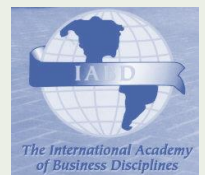

QRBD

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FROM THE EDITORS

The November issue of *Quarterly Review of Business Disciplines* is quite diverse and interesting. It begins with the research of Onur Arugaslan and Ajay Samant, who provide empirical documentation on the risk-adjusted performance of American Depositary Receipt (ADR) in Latin America. Kimberly Reeve and K. Matthew Wong write about the competitive environment of nonprofits, the need for nonprofits to become more collaborative and efficient, and the impact of mergers and acquisitions on nonprofits. C. Christopher Lee, Raymond Schuh, and Jinhee Yoo explore major league baseball team's relative efficiency using a data envelopment analysis model based on salary, population of host city, and runs against wins, revenue, and popularity.

Thomas Prinsen, Louis Falk, and Javier Martinez take us into the growth market of medical tourism – the significant questions that arise about the rewards of traveling outside of national borders for health procedures and the potential risks involved. Lawrence Zeff and Mary Higby, write about social media and multitasking – its advantages in the business world and its disadvantages – their personal observations and their research. Our final paper, written by Ali Kanso and Alyssa Gonzales explores Monsanto, the impact of its publicly endowed title of “Most Evil Corporation” and the PR tactics that the company must pursue to dispel this negative connotation.

Margaret A. Goralski, *Quinnipiac University*, Editor-in Chief

Kaye McKinzie, *University of Central Arkansas*, Associate Editor

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EDITOR-IN-CHIEF

Margaret A. Goralski, *Quinnipiac University*
Email: Margaret.Goralski@Quinnipiac.edu

ASSOCIATE EDITOR

Kaye McKinzie, *University of Central Arkansas*
Email: KMcKinzie@uca.edu

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zswaidan@gmail.com

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RISK-ADJUSTED RETURNS OF AMERICAN DEPOSITARY RECEIPTS FROM LATIN AMERICA

Onur Arugaslan, Western Michigan University
onur.arugaslan@wmich.edu

Ajay Samant, University of North Florida
ajay.samant@unf.edu

ABSTRACT

For many global investors, the instrument of choice for accessing stock markets in Latin America is the American Depositary Receipt (ADR). These ADRs are created when a financial institution holds shares of Latin American corporations in trust and issues receipts which are then listed on stock markets in the U.S. The objective of this study is to provide empirical documentation on the risk-adjusted performance of Latin American ADRs. The first part of the study examines the nature of these ADRs, based on depositary bank, sponsorship status, industry classification, and listing. The second part of the study evaluates the performance of the ADRs using statistical measures grounded in modern portfolio theory. Market returns are adjusted for the degree of total risk and systematic risk inherent in each ADR, and the securities are then ranked on the basis of risk-adjusted performance. In addition to standard Sharpe, Jensen and Treynor performance measures, two newer evaluation metrics, the Modigliani and Sortino measures, are used for ranking the ADRs. The results of this study would be of interest to global investors, managers of international financial institutions, multinational corporate executives, global portfolio managers and academicians in the area of global business and international finance.

Keywords: ADRs, Latin America stocks, portfolio performance measurement

INTRODUCTION

Over the past decade, there has been a significant rise in investor comfort with global financial securities, aided by the ease with which corporate financial information can be accessed via the internet. One of the most convenient instruments for accessing corporate securities listed outside an investor's home country is a Global Depositary Receipt. In the United States, these financial instruments are known as American Depositary Receipts (ADRs). They are listed on the New York Stock Exchange (NYSE), NYSE Amex (formerly American Stock Exchange), the NASDAQ system, and on private trading networks.

Although ADRs from Latin America have been studied before (Creamer, 2009; Schaub, 2013), to our knowledge there has been no study focusing on their risk-adjusted performance. The stock market in this region is significant in size and provides many opportunities for risk diversification. Total market capitalization in Latin America in 2013 was US Dollar (USD) 2,524 billion (World Bank, 2014). The largest market in this region, in terms of market capitalization (USD 1,230 billion) was Brazil. The other large markets were Mexico (USD 525 billion), Chile (USD 313 billion), Colombia (USD 262 billion), Peru (USD 97 billion), and Venezuela (USD 25 billion).

An ADR is created when a financial institution, usually a multinational bank, purchases shares of stock listed on a foreign market and holds them in trust in that country. The bank then issues ADRs in the US based on this holding. These ADRs may be created either at the request of investors or at the request of corporations whose stock is held in trust as collateral for the ADR. These securities serve a dual purpose: they enable firms incorporated in developing countries to raise funds from the U.S. without having to meet the stringent listing requirements of U.S. stock exchanges, and, at the same time, they allow investors to earn returns on securities listed on U.S. stock exchanges without the dual inconvenience of having to deal with foreign stock brokers and with currency conversion. A US based investor who is contemplating investing directly in stocks listed on a market in the Latin American region would need to contact a broker in that country, open a local bank account, convert US dollars into local currency and then execute a buy or sell order. Many US based investors find this inconvenient, and, therefore, prefer to invest in ADRs rather than purchase the stock itself.

The primary securities that underlie an ADR may be corporate stocks or bonds. The earliest ADRs were issued at the request of institutional investors. These ADRs were “unsponsored.” Most of the ADRs that are currently listed are “sponsored” programs, issued at the request of the firm whose securities underlie the ADR. When a sponsored ADR is issued, there may or may not be a corresponding creation of new capital. There are four grades of sponsored ADRs. Level I ADRs are traded in the OTC market. Level II ADRs trade on national stock exchanges (such as the NYSE). If new capital is raised during the process of issuing sponsored ADRs, then the ADRs are categorized as Level III and IV. Level III ADRs are listed on national stock exchanges. Level IV ADRs are privately listed, and are usually issued under rule 144A of the US Securities and Exchange Commission.

This study examines the nature and performance of Latin American ADRs, sorted on basis of depositary bank, sponsorship status, industry classification, and stock exchange on which the security is listed. Data are obtained from the Bank of New York Mellon and Center for Research in Security Prices (CRSP). The intent of the study is to provide documentation to international investors who would like to hold ADRs from Latin America in their global portfolios. The study should be of interest to international investors, managers of mutual funds who are exploring opportunities to diversify their global portfolios, managers of corporations who are planning to sponsor the issue of depositary receipts, and to bank managers who provide international financial services.

The rest of this paper is structured as follows. We summarize pertinent studies in the area of modern portfolio theory and present a review of the literature on ADRs. We then examine the sponsorship status, choice of depositary bank, industrial classification, and market listing. The performance of these ADRs is then evaluated on a risk-adjusted basis, using the Morgan Stanley Capital International (MSCI) Europe, Australasia, and Far East (EAFE) Index as a benchmark for comparison purposes. Finally, we present an analysis of the empirical findings followed by the conclusion of the paper.

LITERATURE REVIEW

Modern Portfolio Theory was pioneered by the research of Treynor (1965), Sharpe (1966), and Jensen (1968). Their performance evaluation metrics are still commonly in use. Treynor (1965)

evaluated an investment portfolio by adjusting the mean excess return (mean return less the risk-free rate of return) for the degree of market risk. Sharpe (1966) calculated mean excess return adjusted for the degree of total risk in the portfolio. Jensen (1968) created a metric (Jensen's Alpha) to determine whether the deviation of portfolio returns from market returns was statistically significant, and, thereby, to determine whether the excess return should be attributed to superior management, or purely to chance.

In 1997, Franco Modigliani and Leah Modigliani did some pioneering work in the area of financial reward and risk. They proposed a new risk-adjusted performance measure (hereafter referred to as M Squared), which is intuitively quite appealing to investors. The idea that underlies their methodology is to adjust the returns of a portfolio to the level of risk in an unmanaged stock market index and then measure the returns on the risk-matched portfolio. Further, academicians and practitioners in finance have shown an interest in downside risk measures for evaluating portfolio performance. The most widely cited performance measure that adjusts for downside risk is the Sortino Ratio (Sortino & Price, 1994). In this paper, we use a modified Sortino Ratio that was introduced by Pedersen and Satchell (2002), who show that this ratio has a sound theoretical foundation.

Academicians have studied the benefits of global diversification of investment portfolios extensively. Solnik and McLeavey (2004) present an excellent summary of these benefits. Officer and Hoffmeister (1987) show that portfolio risk can be reduced significantly by including ADRs in a portfolio of purely domestic (U.S.) securities. Aggarwal, Dahiya, and Klapper (2005) analyse the investment allocation decision of mutual fund managers to invest in emerging market firms that are listed in their domestic markets and have issued ADRs in the U.S. as well. They find that ADRs are the preferred mode of holdings if the local market of the issuer has weak investor protection, low liquidity and high transaction costs, and if the firm is small and has limited analyst following.

The unpredictability of stock returns in emerging markets has been demonstrated widely. Aras and Yilmaz (2008), for example, report evidence on 12 emerging market countries. Obi, Sil, and Choi (2010) study the South African stock market and document that traditional analytical approaches resulted in poor value-at-risk forecasts during the 2008-2009 global financial crisis. They obtain realistic value-at-risk estimates by accounting for the effects of time-varying volatility in portfolio returns. Similarly, Muzindutsi and Niyimbanira (2012) examine the exchange rate risk exposure in the South African stock market and the pricing of this risk. They find the exchange rate exposure to be identifiable and yet different across companies.

The motivation for cross-listing shares on foreign exchanges has also been widely researched (Saudagaran, 1988). Umutlu, Salih, and Akdeniz (2007) investigate the consequences of cross listing in emerging markets and find that ADR listing has no effect on the volatility of the underlying stock. On the other hand, Jaiswal-Dale and Jithendranathan (2001) report that ADRs capture the fluctuations of both the domestic and U.S. markets.

The relation between the price of ADRs and the underlying shares has also been studied thoroughly (Alexander, Cheol & Janakiraman, 1987; Alexander, Cheol & Janakiraman, 1988). Jayaraman, Shastri & Tandon (1993) study the impact of international cross-listings using ADRs. Because ADRs can be exchanged for the underlying shares, financial arbitrage usually ensures that

the price of an ADR is within transactions costs of the price of the underlying share. Interestingly, Eichler and Maltritz (2008) model the probability of a currency crisis as a function of the deviation of the ADR price from the price of the underlying stock.

To the knowledge of the authors, this is the first study of the nature and performance of individual ADRs focusing on Latin American firms, particularly their sponsorship status, industrial classification, names of banks that are active in this business, and exchanges on which these ADRs are listed. This is also the first study of the individual returns that have accrued to these ADRs, from the point of view of U.S. based investors. Creamer (2009) and Schaub (2013) also study Latin American ADRs, but Creamer (2009) focuses on the prediction of their returns and Schaub (2013) focuses on the relationship between issue characteristics and long term excess returns.

NATURE OF ADRS FROM LATIN AMERICA

As of November 2013, there were 197 ADR issues on firms in the Latin America region (Bank of New York Mellon, 2014). 94 ADRs are from Brazil, 41 from Mexico, 25 from Argentina, 14 from Chile, 9 from Colombia, 8 from Venezuela, 5 from Peru and 1 from Ecuador. Of these 197 ADRs, 193 are sponsored and 4 are unsponsored. Regarding the financial institutions that have issued these ADRs, the Bank of New York Mellon accounts for 127 of the issues, followed by J.P. Morgan Chase with 36 issues, Citibank with 19 issues, and Deutsche Bank with 15 issues. Regarding the exchanges on which the ADRs are listed, 77 are listed on the NYSE, 6 on NASDAQ, and 1 on NYSE Amex. Further, 103 are listed OTC (other than NASDAQ), 8 are listed on OTCQX, and 2 on PORTAL.

With respect to industrial classification, 26 of the ADRs are in the electricity industry; 22 in the banking industry; 16 in real estate investment and services; 12 each in construction and materials, food producers, and industrial metals and mining; 10 each in beverages and oil and gas producers; 9 in financial services; 8 in household goods and home construction; 7 in industrial transportation; 6 in mobile telecommunications; 5 each in gas, water, and multiutility and support services; 4 each in chemicals, fixed line telecommunications, forestry and paper, media, and travel and leisure; 3 in general retailers; 2 each in electronics and electric equipment, food and drug retailers, general industrials, industrial engineering, and mining; and 1 each in aerospace and defense, automobiles and parts, health care equipment and services, and personal goods. All data are retrieved from the Bank of New York Mellon, 2014.

PERFORMANCE OF ADRS FROM LATIN AMERICA

Data and Methodology

Monthly returns data for the three-year period January 2010 - December 2012 are obtained from CRSP, 2014. CRSP has full returns data for 15 Brazilian ADRs, 14 ADRs each from Argentina and Mexico, 12 Chilean ADRs, and 1 ADR each from Columbia and Peru. Therefore, these 57 ADRs form the final sample in this study for the performance analysis. The return on U.S. 4-week Treasury Bills is utilized as the proxy for the risk-free interest rate. The MSCI EAFE Index is used as the market benchmark.

Monthly returns are averaged over the three-year period to obtain the Mean return. Risk-free rate of return is subtracted from the mean return to compute the Mean excess return, which is divided by its standard deviation to compute the Sharpe (1966) measure:

$$S_i = \frac{R_i - R_f}{\sigma_i} \quad [1]$$

where R_i = mean return on ADR i ,
 R_f = mean risk-free rate of return,
 σ_i = standard deviation of returns for ADR i .

Mean excess return of each ADR is divided by its beta to obtain the Treynor (1965) measure:

$$T_i = \frac{R_i - R_f}{\beta_i} \quad [2]$$

where β_i is estimated from the market model:

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it} \quad [3]$$

where R_{mt} = market return during month t ,
 e_{it} = error term.

Expected return of each ADR is subtracted from its actual mean return to compute Jensen's (1968) Alpha:

$$\alpha_i = R_i - E[R_i] \quad [4]$$

where the expected return for each ADR is obtained using the Capital Asset Pricing Model:

$$E[R_i] = R_f + \beta_i (R_m - R_f) \quad [5]$$

Jensen's Alphas are then tested for statistical significance.

Mean excess return for each ADR is divided by the downside deviation of that ADR's return from the risk-free rate of return to compute the Sortino Ratio (Pedersen & Satchell, 2002; Sortino & Price, 1994),

$$SO_i = \frac{R_i - R_f}{DD_i} \quad [6]$$

where the downside deviation is estimated as follows:

$$DD_i = \left[\frac{1}{n-1} \sum_{j=1}^n (\max\{0, R_f - R_{ij}\})^2 \right]^{1/2} \quad [7]$$

Here, j is the month index.

The Sharpe measure is multiplied by the market standard deviation (σ_m) and then the risk-free rate added to calculate the M Squared measure (Modigliani & Modigliani, 1997):

$$M^2_i = \frac{R_i - R_f}{\sigma_i} \sigma_m + R_f \quad [8]$$

Finally, the market standard deviation is divided by the ADR standard deviation to obtain the Leverage Factor for each ADR:

$$L_i = \frac{\sigma_m}{\sigma_i} \quad [9]$$

The Leverage Factor compares the total risk in the ADR with the total risk in the market portfolio. For example, a Leverage Factor less than one implies that the risk of the ADR is greater than the risk of the market index, and that an investor who is not comfortable bearing risk in excess of market risk should consider un-levering the ADR by selling off part of the holding in the ADR and investing the proceeds in a risk-free security, such as a Treasury Bill. On the other hand, a Leverage Factor greater than one implies that the standard deviation of the ADR is less than the standard deviation of the market index, and that the investor should consider leveraging the ADR by borrowing money (if possible, at the risk-free rate of return) and investing in that ADR.

The significance of the Leverage Factor is that it can be used to form a portfolio containing the ADR and the risk-free asset that has the same total risk (standard deviation) as the market portfolio. By forming this portfolio, risk exposure is limited to market risk and possible gain could be more than the market return. These Leverage Factors are used to compute the adjusted returns in Table 4. First, the Mean Monthly Adjusted Return (MAR) is computed using the Leverage Factor:

$$MAR_i = L_i R_i + (1 - L_i) R_f \quad [10]$$

Then, Mean Annual Adjusted Return (AAR) is calculated by compounding over 12 months:

$$AAR_i = (1 + MAR_i)^{12} - 1 \quad [11]$$

The ADRs are then ranked by order of magnitude of the mean annual adjusted return.

Results

The 57 ADRs with full monthly return data are identified in Table 1 along with their risk, return, and performance statistics. All returns are reported in US dollars. The ADRs are listed in alphabetical order. The ADR with the highest mean return is Admin Fondos Pensiones Provida of Chile with an average monthly return of 3.46 percent. In comparison, the monthly mean return of the benchmark MSCI EAFE Index is 0.50 percent. The ADR with the highest total risk (measured by the standard deviation of returns) is Gafisa of Brazil with a monthly standard deviation of 19.48 percent. In comparison, the standard deviation of the benchmark MSCI EAFE Index is 5.82 percent. Further, Table 1 reports the numerical values of the Sharpe and Sortino measures, which are used later to rank the ADRs in Table 2. The highest Sharpe and Sortino measures (0.44 and 0.88) are also obtained by Admin Fondos Pensiones Provida. In comparison, the Sharpe measure and the Sortino measure of the benchmark MSCI EAFE Index are 0.08 and 0.12, respectively.

Table 1. 3-Year Returns and Performance on Monthly Basis (2010-2012)

ADRs	Country	Avg (%)	Std (%)	Sharpe	Sortino	Beta	M Squared	Alpha	Alpha t-stat	Treynor
1 Admin Fondos Pensiones Provida	Chile	3.46	7.84	0.44	0.88	0.73	2.57	3.10	1.82	4.73
2 Alto Palermo S A	Argentina	3.34	13.89	0.24	0.49	0.32	1.41	3.18	1.13	10.53
3 Companhia De Bebidas Das Amers	Brazil	3.14	8.13	0.39	0.65	0.68	2.25	2.80	1.59	4.58
4 America Movil A B De C V Series A	México	0.27	6.73	0.04	0.06	0.82	0.23	-0.14	-0.15	0.32
5 America Movil A B De C V Series L	México	0.27	6.71	0.04	0.06	0.83	0.23	-0.15	-0.16	0.31
6 Banco De Chile	Chile	2.44	7.69	0.32	0.61	0.89	1.85	1.99	1.21	2.72
7 Banco Macro S A	Argentina	-0.26	13.25	-0.02	-0.03	1.33	-0.11	-0.92	-0.32	-0.20
8 Banco Santander Brasil S A	Brazil	-0.79	11.49	-0.07	-0.10	1.26	-0.40	-1.41	-0.60	-0.63
9 Banco Santander Chile New	Chile	1.01	8.20	0.12	0.19	0.86	0.72	0.58	0.30	1.16
10 Bbva Banco Frances Sa	Argentina	1.05	15.01	0.07	0.11	1.83	0.41	0.14	0.20	0.57
11 B R F Brasil Foods S A	Brazil	1.77	8.33	0.21	0.38	0.94	1.24	1.30	0.75	1.88
12 Cemex S A B De C V	México	1.09	15.62	0.07	0.10	1.84	0.41	0.18	0.21	0.59
13 Centrais Eletricas Brasilei	Brazil	-3.82	10.86	-0.35	-0.36	0.76	-2.04	-4.20	-2.10	-5.03
14 Coca Cola Femsa S A B De C V	México	2.66	6.31	0.42	0.70	0.27	2.46	2.52	1.51	9.94
15 Companhia Paranaense De Energia	Brazil	-0.39	8.23	-0.05	-0.06	0.69	-0.27	-0.73	-0.53	-0.57
16 Companhia Energetica De Minas Gc	Brazil	1.89	9.52	0.20	0.29	0.76	1.16	1.51	0.75	2.48
17 Companhia Siderurgica Nacional	Brazil	-1.59	12.37	-0.13	-0.19	1.45	-0.75	-2.31	-0.92	-1.10
18 Compania Cervecerias Unidas S A	Chile	2.53	7.78	0.32	0.72	0.50	1.90	2.28	1.26	5.07
19 Compania De Minas Bv Sa	Perú	0.72	9.10	0.08	0.12	0.20	0.46	0.62	0.12	3.64
20 Corpanca	Chile	2.27	8.43	0.27	0.54	0.75	1.57	1.89	1.04	3.03
21 C P F L Energia S A	Brazil	0.81	6.91	0.12	0.18	0.61	0.68	0.50	0.21	1.33
22 Cresud S A C I F Y A	Argentina	-0.63	10.88	-0.06	-0.08	1.16	-0.33	-1.21	-0.55	-0.55
23 Desarrolladora Homex S A De C V	México	-1.60	15.15	-0.11	-0.15	1.41	-0.61	-2.30	-0.77	-1.14
24 Ecopetrol S A	Colombia	3.12	7.35	0.42	0.88	0.65	2.47	2.79	1.68	4.77
25 Empresa Distribuidora Y Comercia	Argentina	-2.48	16.69	-0.15	-0.20	1.25	-0.86	-3.10	-1.01	-1.98
26 Embotelladora Andina S A A Shares	Chile	2.25	7.51	0.30	0.56	0.58	1.74	1.96	1.11	3.88
27 Embotelladora Andina S A B Shares	Chile	2.33	6.90	0.34	0.68	0.52	1.96	2.06	1.21	4.45
28 Embraer S A	Brazil	1.26	8.80	0.14	0.24	1.04	0.84	0.75	0.44	1.21
29 Empresa Nacional De Elect Chile	Chile	0.36	6.12	0.06	0.08	0.54	0.34	0.09	-0.10	0.65
30 Enersis S A	Chile	-0.12	7.03	-0.02	-0.02	0.62	-0.10	-0.44	-0.41	-0.21
31 Fibria Celulose S A	Brazil	-1.11	12.36	-0.09	-0.12	1.67	-0.52	-1.93	-0.71	-0.67
32 Gafisa S A	Brazil	-1.57	19.48	-0.08	-0.12	2.02	-0.46	-2.57	-0.61	-0.78
33 Gruma S A B De C V	México	2.17	11.44	0.19	0.33	1.04	1.11	1.65	0.78	2.07
34 Grupo Aeroportuario Del Centro N	México	2.16	8.60	0.25	0.46	1.09	1.47	1.62	0.96	1.98
35 Grupo Aeroportuario Del Pac Sab	México	2.41	7.78	0.31	0.59	0.87	1.81	1.98	1.18	2.75
36 Grupo Aeroportuario Del Sur S A	México	2.98	9.48	0.31	0.54	0.97	1.83	2.49	1.34	3.07
37 Grupo Financiero Galicia S A	Argentina	1.56	15.54	0.10	0.17	1.35	0.59	0.89	0.38	1.16
38 Grupo Simec S A B De C V	México	1.78	7.67	0.23	0.38	0.65	1.35	1.45	0.80	2.74
39 Grupo Televisa Sa	México	1.05	8.28	0.13	0.21	0.96	0.74	0.58	0.33	1.10
40 Empresas Ica S A De C V	México	0.96	12.48	0.08	0.12	1.58	0.45	0.18	0.20	0.60
41 Industrias Bachoco S A B De C V	México	0.96	7.11	0.13	0.20	0.44	0.79	0.74	0.30	2.17
42 I R S A Inversiones Y Rep S A	Argentina	0.45	10.10	0.04	0.06	0.86	0.26	0.02	-0.02	0.52
43 Latam Airlines Group S A	Chile	1.58	9.67	0.16	0.27	0.93	0.95	1.11	0.57	1.68
44 Maxcom Telecomunicaciones Sab De	México	-2.12	13.13	-0.16	-0.22	0.81	-0.94	-2.53	-1.09	-2.62
45 Oi S A	Brazil	-1.63	11.87	-0.14	-0.16	0.91	-0.80	-2.08	-0.97	-1.81
46 Pampa Energia S A	Argentina	-2.72	10.85	-0.25	-0.30	0.84	-1.45	-3.14	-1.57	-3.22
47 Petrobras Energia S A	Argentina	-0.38	12.10	-0.03	-0.05	1.06	-0.18	-0.91	-0.39	-0.36
48 Petroleo Brasileiro Sa Petrobras	Brazil	-1.67	10.60	-0.16	-0.21	1.30	-0.92	-2.32	-1.08	-1.29
49 Companhia De Saneamento Basico	Brazil	2.81	9.57	0.29	0.57	0.97	1.71	2.33	1.24	2.88
50 Sociedad Quimica & Minera Chl Sa	Chile	1.72	8.69	0.20	0.32	1.08	1.16	1.18	0.70	1.58
51 Telecom Argentina S A	Argentina	-0.12	9.50	-0.01	-0.02	0.91	-0.07	-0.57	-0.33	-0.14
52 Tenaris S A	Argentina	0.73	11.11	0.06	0.09	1.41	0.38	0.03	0.11	0.51
53 Ternium S A	Argentina	-0.20	11.93	-0.02	-0.02	1.31	-0.09	-0.85	-0.31	-0.16
54 Transportadora De Gas Del Sur Sa	Argentina	0.53	11.39	0.05	0.07	0.92	0.27	0.07	0.01	0.57
55 Vale S A	Brazil	-0.03	10.16	0.00	-0.01	1.41	-0.02	-0.73	-0.27	-0.03
56 Vina Concha Y Toro S A	Chile	0.19	7.07	0.03	0.04	0.54	0.16	-0.08	-0.20	0.35
57 Y P F Sociedad Anonima	Argentina	-1.53	13.47	-0.11	-0.14	0.85	-0.66	-1.96	-0.83	-1.80
MSCI EAFE		0.50	5.82	0.08	0.12	1.00	0.50	0.00	0.00	0.49
US 4-Week Treasury Bill		0.01	0.00	0.00	0.00	0.00	0.01	0.00	-0.51	0.00

Table 1 also reports the values of Betas, M Squared measures, Jensen’s Alphas (and their t-statistics), and Treynor measures, all of which are computed using the benchmark MSCI EAFE Index. The ADR with the highest systematic risk (Beta=2.02) is Gafisa of Brazil, as was the case with total risk. In comparison, the Beta of the benchmark MSCI EAFE Index is, by definition, exactly 1.00. The ADR with the highest M Squared measure (2.57) is again Admin Fondos Pensiones Provida, as expected. In comparison, the benchmark MSCI EAFE index has an M Squared measure of 0.50. The ADR with the highest Alpha measure is Alto Palermo of Argentina with Alpha equal to 3.18. None of the Alphas are significant at the five percent level. The Alpha of the benchmark MSCI EAFE Index is, by definition, zero. Finally, the ADR with the highest Treynor measure (10.53) is also Alto Palermo of Argentina. In comparison, the Treynor measure for the MSCI EAFE Index is 0.49.

Table 2 reports the rankings of all the ADRs. The Sharpe and Sortino ranks indicate that 26 ADRs have returns (adjusted for both total risk and downside risk) that exceed the risk-adjusted returns of the MSCI EAFE Index. The Treynor and Alpha ranks in Table 2 indicate that 34 ADRs have returns (adjusted for systematic risk) that exceed the risk-adjusted returns of the MSCI EAFE Index. By definition, the ranking based on the M Squared measure is identical to the ranking based on the Sharpe measure. However, the M Squared measure enables us to draw some inferences, which cannot be drawn from the Sharpe measure and these are detailed at the end of this section.

Table 2. Three-Year Ranking (2010-2012)

ADRs	Country	Sharpe Rank (M Squared Rank)	Sortino Rank	Treynor Rank	Alpha Rank
Admin Fondos Pensiones Provida	Chile	1	1	5	2
Ecopetrol S A	Colombia	2	2	4	4
Coca Cola Femsa S A B De C V	México	3	4	2	5
Companhia De Bebidas Das Amers	Brazil	4	6	6	3
Embotelladora Andina S A B Shares	Chile	5	5	7	9
Compania Cervecerias Unidas S A	Chile	6	3	3	8
Banco De Chile	Chile	7	7	15	10
Grupo Aeroportuario Del Sur S A	México	8	11	10	6
Grupo Aeroportuario Del Pac Sab	México	9	8	13	11
Embotelladora Andina S A A Shares	Chile	10	10	8	12
Companhia De Saneamento Basico	Brazil	11	9	12	7
Corpbanca	Chile	12	12	11	13
Grupo Aeroportuario Del Centro N	México	13	14	19	15
Alto Palermo S A	Argentina	14	13	1	1
Grupo Simec S A B De C V	México	15	15	14	17
B R F Brasil Foods S A	Brazil	16	16	20	18
Companhia Energetica De Minas Gc	Brazil	17	19	16	16
Sociedad Quimica & Minera Chl Sa	Chile	18	18	22	19
Gruma S A B De C V	México	19	17	18	14
Latam Airlines Group S A	Chile	20	20	21	20
Embraer S A	Brazil	21	21	24	22
Industrias Bachoco S A B De C V	México	22	23	17	23
Grupo Televisa Sa	México	23	22	27	25
Banco Santander Chile New	Chile	24	24	25	26
C P F L Energia S A	Brazil	25	25	23	27
Grupo Financiero Galicia S A	Argentina	26	26	26	21
MSCI EAFE		27	27	35	35

Compania De Minas Bv Sa	Perú	28	28	9	24
Empresas Ica S A De C V	México	29	29	29	29
Cemex S A B De C V	México	30	31	30	28
Bbva Banco Frances Sa	Argentina	31	30	31	30
Tenaris S A	Argentina	32	32	34	33
Empresa Nacional De Elect Chile	Chile	33	33	28	31
Transportadora De Gas Del Sur Sa	Argentina	34	34	32	32
I R S A Inversiones Y Rep S A	Argentina	35	35	33	34
America Movil A B De C V Series A	México	36	36	37	37
America Movil A B De C V Series L	México	37	37	38	38
Vina Concha Y Toro S A	Chile	38	38	36	36
Vale S A	Brazil	39	39	39	42
Telecom Argentina S A	Argentina	40	40	40	40
Ternium S A	Argentina	41	41	41	43
Enersis S A	Chile	42	42	43	39
Banco Macro S A	Argentina	43	43	42	45
Petrobras Energia S A	Argentina	44	44	44	44
Companhia Paranaense De Energia	Brazil	45	45	46	41
Cresud S A C I F Y A	Argentina	46	46	45	46
Banco Santander Brasil S A	Brazil	47	47	47	47
Gafisa S A	Brazil	48	49	49	55
Fibria Celulose S A	Brazil	49	48	48	48
Desarrolladora Homex S A De C V	México	50	51	51	51
Y P F Sociedad Anonima	Argentina	51	50	53	49
Companhia Siderurgica Nacional	Brazil	52	53	50	52
Oi S A	Brazil	53	52	54	50
Empresa Distribuidora Y Comercia	Argentina	54	54	55	56
Petroleo Brasileiro Sa Petrobras	Brazil	55	55	52	53
Maxcom Telecomunicaciones Sab De	México	56	56	56	54
Pampa Energia S A	Argentina	57	57	57	57
Centrais Eletricas Brasilei	Brazil	58	58	58	58

Table 3 reports the average returns that accrue to the ADRs with and without risk-adjustment. The risk-adjustment is performed using the Modigliani methodology. The returns are annualized for the convenience of investors. This is done by compounding the monthly mean returns over twelve periods. In that table, Alto Palermo of Argentina, which ranks second based on unadjusted returns, falls back to rank 14 on the basis of returns adjusted for risk. On the other hand, Coca Cola Femsa of Mexico, which ranks seventh on an unadjusted basis, ranks third when the returns are adjusted for risk. Also, Embotelladora Andina of Chile ranks 11th on the basis of unadjusted returns, but ranks fifth based on returns adjusted for risk. The leverage factor for this ADR is 0.84, which implies that an investor, who is comfortable bearing at most the same level of risk as in the benchmark MSCI EAFE index, could unlever this ADR (lend 16 percent of available funds at the risk-free rate of interest, if possible, and invest the rest in the ADR) and thereby attain an annual return of 26.28 percent which is considerably higher than the annualized return on the benchmark index.

Table 3. Three-Year Annualized Performance: Unadjusted and Adjusted for Risk

ADRs	Country	Unadjusted Annualized Returns	Unadjusted Rank	Adjusted Annualized Returns (%)	Adjusted Rank	Leverage Factor
Admin Fondos Pensiones Provida	Chile	50.45	1	35.63	1	0.74
Ecopetrol S A	Colombia	44.53	4	34.00	2	0.79
Coca Cola Femsa S A B De C V	México	37.04	7	33.81	3	0.92
Companhia De Bebidas Das Amers	Brazil	44.93	3	30.60	4	0.72
Embotelladora Andina S A B Shares	Chile	31.76	11	26.28	5	0.84
Compania Cervecerias Unidas S A	Chile	35.03	8	25.31	6	0.75
Banco De Chile	Chile	33.55	9	24.60	7	0.76
Grupo Aeroportuario Del Sur S A	México	42.19	5	24.31	8	0.61
Grupo Aeroportuario Del Pac Sab	México	33.14	10	23.99	9	0.75
Embotelladora Andina S A A Shares	Chile	30.59	13	23.06	10	0.78
Companhia De Saneamento Basico	Brazil	39.46	6	22.60	11	0.61
Corpbanca	Chile	30.89	12	20.55	12	0.69
Grupo Aeroportuario Del Centro N	México	29.26	15	19.09	13	0.68
Alto Palermo S A	Argentina	48.40	2	18.23	14	0.42
Grupo Simec S A B De C V	México	23.51	17	17.44	15	0.76
B R F Brasil Foods S A	Brazil	23.47	18	15.95	16	0.70
Companhia Energetica De Minas Gc	Brazil	25.18	16	14.82	17	0.61
Sociedad Quimica & Minera Chl Sa	Chile	22.75	19	14.78	18	0.67
Gruma S A B De C V	México	29.42	14	14.14	19	0.51
Latam Airlines Group S A	Chile	20.66	20	12.05	20	0.60
Embraer S A	Brazil	16.26	22	10.53	21	0.66
Industrias Bachoco S A B De C V	México	12.15	28	9.86	22	0.82
Grupo Televisa Sa	México	13.41	24	9.29	23	0.70
Banco Santander Chile New	Chile	12.78	26	8.95	24	0.71
C P F L Energia S A	Brazil	10.14	29	8.50	25	0.84
Grupo Financiero Galicia S A	Argentina	20.43	21	7.30	26	0.37
MSCI EAFE		6.14	33	6.14	27	1.00
Compania De Minas Bv Sa	Perú	9.01	31	5.71	28	0.64
Empresas Ica S A De C V	México	12.20	27	5.58	29	0.47
Cemex S A B De C V	México	13.88	23	5.03	30	0.37
Bbva Banco Frances Sa	Argentina	13.30	25	5.02	31	0.39
Tenaris S A	Argentina	9.10	30	4.71	32	0.52
Empresa Nacional De Elect Chile	Chile	4.43	35	4.22	33	0.95
Transportadora De Gas Del Sur Sa	Argentina	6.50	32	3.32	34	0.51
I R S A Inversiones Y Rep S A	Argentina	5.55	34	3.20	35	0.58
America Movil A B De C V Series A	México	3.29	36	2.85	36	0.87
America Movil A B De C V Series L	México	3.24	37	2.82	37	0.87
Vina Concha Y Toro S A	Chile	2.33	38	1.93	38	0.82
Vale S A	Brazil	-0.39	39	-0.19	39	0.57
Telecom Argentina S A	Argentina	-1.44	40	-0.86	40	0.61
Ternium S A	Argentina	-2.36	42	-1.12	41	0.49
Enersis S A	Chile	-1.47	41	-1.21	42	0.83
Banco Macro S A	Argentina	-3.11	43	-1.34	43	0.44
Petrobras Energia S A	Argentina	-4.48	44	-2.14	44	0.48
Companhia Paranaense De Energia	Brazil	-4.53	45	-3.20	45	0.71
Cresud S A C I F Y A	Argentina	-7.29	46	-3.93	46	0.54
Banco Santander Brasil S A	Brazil	-9.04	47	-4.64	47	0.51
Gafisa S A	Brazil	-17.25	50	-5.42	48	0.30
Fibria Celulose S A	Brazil	-12.52	48	-6.05	49	0.47

Desarrolladora Homex S A De C V	México	-17.58	52	-7.08	50	0.38
Y P F Sociedad Anonima	Argentina	-16.93	49	-7.64	51	0.43
Companhia Siderurgica Nacional	Brazil	-17.52	51	-8.60	52	0.47
Oi S A	Brazil	-17.93	53	-9.16	53	0.49
Empresa Distribuidora Y Comercia	Argentina	-26.00	56	-9.85	54	0.35
Petroleo Brasileiro Sa Petrobras	Brazil	-18.33	54	-10.46	55	0.55
Maxcom Telecomunicaciones Sab	México	-22.69	55	-10.69	56	0.44
Pampa Energia S A	Argentina	-28.13	57	-16.12	57	0.54
Centrais Eletricas Brasilei	Brazil	-37.33	58	-21.96	58	0.54

To explore this possibility fully, consider an investor who would like to bear only an average level of risk and still earn returns superior to the benchmark index. In this context, the average level of risk is measured by the standard deviation of the benchmark MSCI EAFE index, which is 5.82 percent on a monthly basis. Now consider the following investment strategy: Suppose that the investor has \$1,000 to invest. The investor could lend \$160 and invest \$840 in the Embotelladora Andina ADR. The end of month return from the ADR portion of the portfolio will be $\$840 \times 0.0233 = \19.57 . Suppose that the loaned funds were deposited at the monthly risk-free rate of 0.01 percent. In that case, the loaned funds will earn interest of $\$160 \times 0.0001 = \0.02 . The portfolio return is $\$19.57 + \$0.02 = \$19.59$, which is a return of 1.96 percent on a monthly basis or 26.23 percent annualized. This return is considerably higher than the annualized return on the EAFE index (6.14 per cent). Note that the monthly risk of the portfolio is $0.84 \times 6.90 = 5.80$ percent, approximately equal to the 5.82 percent risk of the MSCI index in Table 1. This investment strategy, therefore, enables the investor to earn substantially better returns for an average level of risk. It may be noted that the above example assumes that the returns on the ADR are not correlated with the returns on risk-free US treasury bills.

ANALYSIS

This study has clear managerial implications. There may be firms located in Latin America whose ability to raise capital is constrained by the limited size of the local stock market. One possible way out of this constraint is to issue shares in the local stock market, present a credible business plan to an international bank and then request the bank to hold the shares in trust and create a sponsored ADR which is subsequently traded in a developed stock market such as the US. By using this technique of financing, the ability of the issuing company to raise capital is not constrained by a relatively small local stock market.

Further, investors who would like to diversify their global portfolios would do well to examine investment opportunities in Latin America. In particular, stock markets in Brazil, Mexico, Argentina, and Chile have a range of investment opportunities and market depth. A convenient way to access these markets would be via ADRs. These ADRs vary widely in terms of their risk and return, as documented in this study. However, the risk-adjusted returns of some of these ADRs can be quite attractive and may be superior to the return on a benchmark international stock index such as the MSCI EAFE. For investors who seek a level of risk no higher than the benchmark index, this study presents a technique of raising the return on a portfolio by holding the ADR in combination with a risk-free security such as a treasury bill.

Finally, for managers of financial institutions, ADRs present an opportunity to diversify operations by providing financial services to a historically underserved region of the world which has a large

untapped potential for economic growth. These managers may want to evaluate business plans from firms based in Latin America with a view to creating ADRs based on their shares. This activity will not only result in providing much needed capital to firms from developing nations but will also provide fee income for financial services provided by international banks. In many cases the reputation of the issuing bank will facilitate the acceptance of these ADRs by the investing public in the US and other developed financial markets.

CONCLUSION

ADRs represent a convenient investment vehicle to access markets in Latin America for international investors who are contemplating purchase of stocks listed in those markets. These securities are useful in two main ways. First, they enable global investors to earn returns on Latin American stocks without the dual inconvenience of having to deal with local stock brokers and currency conversion. Second, they allow firms incorporated in Latin America to tap U.S. capital markets without having to meet the stringent listing requirements of U.S. stock exchanges. There are 197 ADRs from Latin America that are listed on U.S. markets, and investors have a wide range of choice of companies across diverse industry groups. This study examines the nature of these ADRs sorted on the basis of the depository bank, sponsorship status, industry classification, and market listing.

Prior research has reported the performance of individual Latin American stocks in local currencies. However, risk-adjusted returns on ADRs reported in US dollars are more useful to international investors for, both, security selection and portfolio construction. Hence there is need for thorough evaluation of the performance of ADRs, using measures grounded in modern portfolio theory. Further, given that there is extensive documentation on the performance of U.S. based stocks, especially for the S&P 500 index components, this study serves as an important complement to the existing literature on the construction of global portfolios.

In order to facilitate comparison with international stock markets, this study uses the MSCI EAFE Index to evaluate the risk-adjusted performance of Latin American ADRs. Some of these ADRs have unadjusted returns which are high, but once risk is factored in, the adjusted returns do not appear to be very attractive. On the other hand, some ADRs with modest returns may be quite rewarding to international investors, when their returns are adjusted for risk. Global investors may want to examine each of these securities in detail, in order to evaluate them further for possible inclusion in an investment portfolio. Of course, the contribution of a security to portfolio return and portfolio risk matters more to global investors than the return and risk of an individual security.

Finally, it would be beneficial to update this information on a continuing basis in order to provide ongoing documentation to international investors who would like to diversify their holdings to include investments based on Latin American stocks, but are not sure of which ADRs to hold. Future research may want to focus on decoupling the return to these ADRs into its two components: the financial performance of the underlying firm and the fluctuations in the exchange rate.

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NONPROFIT MERGERS: A NEW PATH TO SUCCESS?

Kimberly M. Reeve, Cathedral Consulting Group, NY &
International School of Management, France
kreeve@cathedralconsulting.com

K. Matthew Wong, Tobin College of Business, St. John's University, NY
wongk@stjohns.edu

ABSTRACT

This paper analyzes the rationales and success factors for mergers in nonprofits by synthesizing a long list of existing literature as well as conducting interviews with industry practitioners. Mergers and acquisitions are relatively new in the nonprofit sector. With the general decline in funding levels, nonprofits are now facing a more competitive environment as a growing number of organizations are competing for a pool of funding that has stagnated globally. Funders and board members also have increasingly been calling for nonprofits to become more collaborative and efficient. As in the corporate world, such mergers may not always yield the desired synergies and efficiencies. However, in the nonprofit world, unsuccessful mergers can have dire consequences for the organization's indigent clients who often have few other alternatives to obtain the support they may be receiving. Because of this potential outcome, it is important that nonprofits understand reasons for merging, have realistic expectations for outcomes and, above all, contemplate a merger as part of a strategy to expand or augment their mission. This paper argues that although most mergers are conceived in the middle of a cash crisis, successful mergers need to be part of a long-term strategy that is designed to strengthen or expand the organization's mission. Similar to its corporate counterpart, a nonprofit merger should be considered as an opportunity for the organization to better serve its constituencies and as a solution to a broader organizational strategy.

Keywords: Mergers & Acquisitions, nonprofits, organization strategy

INTRODUCTION

Mergers and acquisitions are common activities in the corporate world, but they are still relatively rare in the nonprofit world. However, nonprofits are now facing a more competitive environment, as a growing number of organizations are competing for a pool of funding that has stagnated. At the international level, organizations in countries such as Canada and The Netherlands relied extensively on stipends from their governments, and these stipends are now being cut significantly or eliminated entirely. Under such environment, the opportunity for organizations to merge services and gain administrative efficiencies can be attractive. Increasingly, funders and board members have also been calling for nonprofits to become more collaborative and efficient, which has resulted in more nonprofits considering and engaging in mergers (Soder, 2011).

However, mergers may not always yield the anticipated synergies and efficiencies. In the nonprofit world, unsuccessful mergers can result in cuts to "the beneficiaries of services who have few, if

any, alternatives to obtain the support they may be receiving” (Soloman, 2009, n.p.). Because of this potentially dire outcome, it is important that nonprofits understand the main reasons for merging, have realistic expectations for desirable outcomes and, above all, contemplate a merger as part of a strategy to expand or augment their mission. This study synthesizes the extensive literature in this area and conducts a number of interviews with practitioners to gain additional insights of the practice of nonprofit mergers in the real world. We seek to review the growth of mergers in the nonprofit sector, highlight why an organization should merge, identify issues to consider when merging, and outline key factors of successful mergers. Our analysis demonstrates that although typically mergers for nonprofits are contemplated in the middle of a cash crisis, for the merger to be successful it needs to be part of a long-term strategy that is designed to strengthen and/or expand the nonprofit’s mission. Otherwise, the merger will likely become a failure, similar to the merger experience exhibited in the commercial sector.

THE INDUSTRY

In the United States, there are approximately 1.6 million nonprofit organizations registered with the IRS (Roeger, Blackwood, & Pettijohn, 2012). In 2011, these organizations had total revenues of \$1.59 trillion (ibid.), including \$298.4 billion in donations (“Has America’s Charitable Giving...”, 2012). Out of these 1.6 million nonprofit organizations, only 40 percent had to file annual tax returns, indicating that the remaining 60 percent had receipts of less than \$50,000, the threshold at which the IRS exempts nonprofits from filing the standard form 990 (Roeger et al., 2012). While the public may think of nonprofits as being the Red Cross or the Metropolitan Museum of Art, in fact only 4 percent of all nonprofits have revenue of over \$10M annually. On average, 22 percent of funds that nonprofits receive come through charitable donations from individuals, corporations and foundations, and this giving has fallen by 10% between 2005 and 2011 when adjusted for inflation (“Has America’s Charitable Giving...”, 2012). This is exacerbated by the fact that the nonprofit sector has been expanding rapidly, increased by 23.6 percent between 2001 and 2011, surpassing the growth rate of both government and corporate sectors (Roeger et al., 2012). In other words, the number of nonprofits is increasing while available funds are decreasing.

The bulk of revenue for nonprofits (72 percent) comes from revenue for program service fees, which includes government contracts, fee-for-service programs and memberships (Roeger et al., 2012), and this means that many nonprofits compete with for-profit service providers (Brinckerhoff, 2000; Toepler, Seitchek, & Cameron, 2004). While program service fees are good in that they diversify an organization’s revenue base, they are also a challenge, particularly those that are tied to government contracts that may be cut. In addition, nonprofit hospitals, fitness centers and childcare organizations compete directly with their for-profit counterparts, many of whom have enjoyed the economies of scale and increased market share that come from merging (Giffords & Dina, 2003). As a result, nonprofit organizations now exist in an environment that “might have a bit of a Darwinian effect, with stronger nonprofits surviving to better support their constituents as well as a drive for mergers between smaller organizations” (Kibbe, 2009, p. 19).

In the nonprofit world, where the concept of collaboration is valued, there are few who use the term “acquisition” (Kibbe, 2009). That leaves us with the option of mergers, which is defined as “the results of a decision by two or more organizations to combine their operations in a permanent

relationship” (Golensky & DeRuiter, 1999, p. 138) or “fusing their boards, management, and legal entities to form a single organization” (La Piana, 2010, p. 28). In general, a merger of nonprofit organizations is either an “absorption merger” in which one organization dissolves and is assimilated within another or a “merger of equals” in which two or more entities dissolve to form a new structure that integrates the full programs of the organizations (Pietroburgo & Wernet, 2010, p. 24). This “absorption,” which others term “acquisition” or “consolidation,” does not typically involve big buyouts, (Campbell, 2009; Toepler et al., 2004) and no financial incentives drive deals (Cortez, Foster, & Smith Milway, 2009; Kibbe, 2009). Finally, there is a parent/subsidiary relationship, a legal arrangement in which one organization governs a previously autonomous organization (Campbell, 2009).

There are many reasons why a nonprofit may want to merge. Institutional and individual donors often believe that because the nonprofit sector has grown so quickly, there must be duplication of services and operational inefficiencies, particularly among smaller organizations (La Piana, 2010). Managers of nonprofit organizations cite other reasons for mergers, including expanding market share or eliminating competition for programs or services, increasing their asset base or borrowing power, and increasing efficiencies (Golensky & DeRuiter, 1999; Sargeant & Jay, 2002). Taking a page from its corporate counterparts, nonprofits are also interested in merging as a growth strategy, to diversify program or service offerings, to enter new markets, and even to share the risk in particularly innovative projects (Pietroburgo & Wernet, 2010). Nonprofits may also be driven by external events (Benton & Austin, 2010), such as changes in the demographics of the communities they serve, an influx of new immigrant groups, an aging marketplace that calls for an increase in services to the elderly, or a loss of constituents who leave because of a poor economy or closed factories (Cowin & Moore, 1996).

Fundamentally, the driver for merger may simply come down to money. Increasingly, funders want nonprofits to focus on “economizing and streamlining service delivery and preventing struggles for available funds” (Toepler et al., 2004, p. 103). Nonprofits are willing to merge because they need to get out of a crisis – “Donations are down, endowments are down and government grants are harder to get, but the need for services in many cases has increased” (Soder, 2011, p. 13). In fact, for nonprofits in a financial crisis, a merger may be the only way for them to save a hallmark program or service by integrating it into a larger, more stable organization’s suite of services (La Piana, 2010). Foundations and individual donors who often want organizations to share resources exacerbate this increased competition for funds. One of the first surveys of nonprofit organizations in the United States that had merged indicated that 38 percent were driven to merge because of pressure from funders (Sargeant & Jay, 2002). Funders have historically pushed nonprofits to collaborate, and mergers are perhaps the next natural step, particularly for increasingly “weary donors” (Cowin & Moore, 1996).

History

Mergers in the nonprofit sector first appeared in the 1980s and became a more significant activity in the 1990s primarily in the hospital industry. Nonprofit hospitals, like their for-profit counterparts, rely heavily on fees and earned income, so it is not surprising that consolidation gained momentum in this industry (Toepler et al., 2004). In the nonprofit world, estimates point to a merger rate of 1.5 percent in the sector in 2008, with “1 in 10 nonprofits believed to be

considering a merger option” (Pietroburgo & Wernet, 2010, p. 24). This may seem low, but the comparable rate in the for-profit world is 1.7 percent, due mainly to the fact that in both sectors, mergers tend to be between smaller entities (Cortez et al., 2009). Cortez et al. (2009) also point out that the real difference in merger rates between for-profits and nonprofits can be seen among large nonprofits. In this venue, the rate of mergers for nonprofits is a tenth of what it is for similarly-scaled for-profit entities. When mergers first began in the 1980s, they were typically “a last resort for survival in the intense face of competition for resources” (Golensky & DeRuiter, 1999, p. 138). They were primarily motivated by a “resource dependence” theory, which suggests that, “the principal purpose for which organizations come together is the need for resources” (Campbell, 2009, p. 370). Now, more organizations are considering mergers as a “proactive strategic restructuring that could make the resulting nonprofit a more effective social change agent” (Corritore, 2009, p. 1).

It is interesting to note that although the rate of mergers has increased by 28 percent over the past four years, the sector still has an over-all merger rate of merely 1.5 percent due to the continued rapid growth of new nonprofits entering the marketplace (K. Smith Milway, personal communication, September 27, 2013). Whereas mergers used to take place primarily between smaller nonprofits, mergers are now more acquisitional in nature, with bigger organizations “rolling up” smaller entities into their existing program and services (ibid.). Over the past two decades, mergers in the nonprofit sector seem to have moved from being a last-resort attempt to preserve an organization to a way for organizations to strategically work together to better fulfill their mission.

Deal Structure

Most mergers in the industry tend to be between one nonprofit and another because IRS law dictates that if a nonprofit dissolves, its assets must be transferred to another nonprofit with a related mission (K. Wu, personal communication, September 16, 2013). However, laws change, and there has been at least one recent case that involved “nunc pro tunc” approval for a sale of substantially all of the assets of a nonprofit to a for-profit, followed by a dissolution of the nonprofit (ibid.). This was specific to a recent change in a particular area of healthcare law, but there is now precedence for what is essentially a nonprofit acquisition by a for-profit entity.

On the flip side, there are also examples of nonprofit organizations launching bids to acquire for-profit entities. In 2005, The Musculoskeletal Transplant Foundation (MTF) made a \$108 million hostile bid for Osteotech Inc., a corporation that process bone and tissue in preparation for transplant (Cecil, 2005). MTF, the world’s largest tissue bank, was both a customer and competitor of Osteotech. Previously, MTF had also successfully integrated the \$60 million acquisition of The American Red Cross’ tissue services division (Cecil, 2005, p. 2). These examples simply point out that the M&A game in the nonprofit world is changing, and laws may become more flexible to allow more cross-over activity between sectors.

From a functional standpoint, mergers are similar in the for-profit and nonprofit world and can be horizontal, vertical, concentric, or conglomerates (Cowin & Moore, 1996; Toepfer et al., 2004). In the nonprofit world, horizontal mergers are those that occur between organizations that provide the same core services and are or could be competitors. In 2005, the American Bowling Congress,

Women’s International Bowling Congress, and the Youth American Bowling Congress, all membership leagues focused on bowling, completed a horizontal merger to form a combined 2.8 million-member organization (Pietroburgo & Wernet, 2010). Vertical mergers take place between nonprofits that operate in different parts of a similar service delivery system or those who have a customer/supplier relationship (Cowin & Moore, 1996). An example would be when El Barrio, a small organization in Cleveland, OH that focused on helping people of Hispanic descent find jobs, merged with West Side Ecumenical Ministry, a larger, comprehensive social service agency that provided housing, food and educational services to the poor and now expanded to provide job services to this same community (Soder, 2011). Concentric mergers occur between organizations that are not competitors but share a common technology or marketing platform or operate in a related field (Cowin & Moore, 1996; Golensky & DeRuiter, 2002), such as a children’s hospital merging with a rehabilitation center for seniors. Finally, conglomerate mergers bring together organizations that are in different fields, such as a homeless shelter partnering with a drug treatment center (Toepler et al., 2004).

Table 1. Comparison of For-Profit and Nonprofit Mergers

Step	For-Profit	Nonprofit
1	Search for partners	There are few “matchmakers” in the nonprofit world, which makes this process more difficult. As a result, the search for partners may be limited to consider one or two possible options.
2	Due Diligence	Pre-strategy in which history and mission of merging organizations are evaluated for compatibility.
3	Negotiation and Bidding	Board members or designated team of members from both organizations design the merger strategy. Cooperative and collaborative rather than combative.
4	Dealing with law and regulations	Few law and legal issues to abide by, other than updating state and Federal filings.
5	Deal Design	Execution phase, including dissolution of agency and distribution of assets. There are rarely buyouts involved, and there are no stock transactions.
6	Post-merger integration	Official establishment of new agency.

Table 1 above compares the steps in a for-profit merger with those of a nonprofit merger. Tactically, mergers in the non-profit world take a slightly different path than those in the for-profit world. In addition to taking longer to consummate (Pietroburgo & Wernet, 2010), they also tend to lack extensive negotiation, mainly because buy-outs and stock transactions are not involved. In general, there is a pre-strategy in which the history and mission of the merging organizations are evaluated. This is followed by a strategy design, in which board members or the designees outline the specifics of the actual merger, including distribution or dissolution of assets, timeline and an over-all budget. The execution phase is next and includes the dissolution of the old agency or

agencies, distribution of assets, cancellation of services and contracts and the official establishment of the new organization (Ricke-Kiely, Parker & Barnet, 2013).

ISSUES WITH NONPROFIT MERGERS

Because nonprofit mergers are still a relatively new phenomenon, there are several legal, organizational, and systemic issues that must be addressed. First, anti-trust law is now being applied to nonprofit merger situations. This issue is specific to entities that depend on program fees and revenue from clients in a way that is similar to their for-profit counterparts, such as hospitals. Anti-trust law becomes an issue if a nonprofit merger that results in increasing the market share of an organization then tries to increase its prices or establish a monopoly in that particular service or geographic area (Richman, 2007). To date, the nonprofit's market power has perhaps been under-estimated, and most rulings have indicated that judges fundamentally believe that nonprofits operate "for good" and are therefore not going to engage in monopolistic pricing behavior. This precedence was set in one of the first rulings that applied anti-trust law to a nonprofit hospital merger - *FTC vs. Freeman Hospital*, 1995. The judge believed that the nonprofit hospital would not increase its prices simply because it was a nonprofit. In the ruling, the judge stated, "If a nonprofit organization is controlled by the very people who depend on it for service, there is no rational economic incentive for such an organization to raise its prices to the monopoly level even if it has the power to do so" (Richman, 2007, p. 130, quoting the case).

However, a survey conducted in 1997 of hospital mergers in the United States showed that there is cause for concern about nonprofit hospitals merging and gaining market share. The data indicated that while nonprofits still price their services lower than for-profits, merged nonprofit hospitals increase their pricing by \$4 per bed-day while for-profit hospitals that merge increase their pricing by \$7.35 per bed-day (Danger, 1997). Hospitals that pursue horizontal mergers and essentially expand the market share of existing services are the ones most likely to increase pricing (*ibid.*).

Nonprofits considering a merger also need to be aware of the impact of a consolidation on restricted income funds or endowments. Because these funds are restricted for designated purposes by the donors or board of directors, they need consent to transfer, and this process, which typically involves seeking approval from a judge, can be expensive and time consuming (Sargeant & Jay, 2002). Other legal issues can emerge when a nonprofit seeks to acquire a for-profit entity, including the question of whether or not the acquirer can retain its non-profit tax status post-merger (Cecil, 2005).

DIFFERENCES BETWEEN NON-PROFIT AND FOR-PROFIT MERGERS

While the merger process may be similar between nonprofits and for-profits in many aspects, there are some major differences. First, nonprofits must communicate with a variety of stakeholders, including staff, board members, donors and volunteers (Pietroburgo & Wernet, 2010). While businesses also have different stakeholders involved, nonprofits rely on the full engagement of each of their stakeholder groups post-merger in order to successfully implement the programs and services of the new entity. Fundamentally, it can be difficult for stakeholders of a nonprofit organization to see, a priori, the benefit of a merger. Unlike in for-profit mergers, there is no

increase in shareholder wealth and no buyouts. This underscores the importance of selling the merger concept to an organization's stakeholders, and this process begins with the donors. While a business may need to convince shareholders of the importance of merging, unlike a nonprofit they do not have to convince legacy donors – those who have pledged a gift to a nonprofit organization upon their death – that the planned bequest should be fulfilled with a new organization that has a new name (Sargeant & Jay, 2002). It is these elderly donors, in particular, who may be confused by the concept of a merger and who may not want to support an organization that has a different name or logo from the one they have been used to supporting (ibid.).

Volunteers are another key stakeholder group for nonprofit organizations. In a merged organization, volunteers may feel a loss of identity or believe that “their” organization has fundamentally changed because they are so emotionally tied to the former organization's brand and mission (La Piana & Hayes, 2005; Sargeant & Jay, 2002). For example, a small nonprofit based in Amsterdam is facing significant cuts in its government subsidies, and when volunteers were informed of the possibility of the organization needing to join forces with another entity simply to survive, volunteers stated they would rather see the organization fail than “lose” it to a partnering organization (R. Bottenbley, personal communication, October 18, 2013). This concept is confirmed by research completed by Sargeant & Jay (2002), which points to the fact that when an organization merges, they lose an average of 5-10 percent of their volunteer base because these individuals feel that “their” organization has died (ibid., p. 964). Again, because many nonprofits rely on volunteers to deliver program services, their acceptance of the merger is essential.

Nonprofit mergers also need to obtain the support and buy-in of their staff, who are “the most crucial stakeholder group in merger negotiations” (Toepler et al., 2004, p. 104). Unlike for-profit mergers, nonprofit mergers typically do not entail financial incentives for staff, including the CEOs or executive directors. This issue is complicated by the fact that many employees of nonprofit organizations are driven by the mission of their organization, and if they believe that the mission or purpose of the organization is fundamentally changing, they will be less motivated to stay in their current position (Chen & Krauskopf, 2013). One survey of 18 organizations that had recently merged revealed that two-thirds suffered a loss of productivity both before and after the merger due to low employee morale (Singer & Yankey, 1991). The same issues that a for-profit merger encounters with combining two different cultures are amplified in a nonprofit merger when one factor is a decrease in financial incentive and an increase in personal ownership of the previous organization (P. Clements, personal communication, October 1, 2013). While “people are the bottom line in the nonprofit merger,” (“Keys to a Successful Nonprofit Merger”, 1992, p. 18), it can be difficult to keep them focused on the potential benefit of the merger.

In the for-profit world, “adversarial negotiations” are the norm, but in the non-profit world, donors and other investors want to see organizations focused on the mission and working together to see a merger through to consummation (La Piana & Hayes, 2005, p. 12). This also plays out in the legal counsel that is used. Nonprofits have historically focused on collaboration and stakeholders such that merger transactions need to be handled harmoniously. While the entities involved in for-profit mergers bring teams of attorneys to the table, it is not unusual for the organizations in a nonprofit merger to jointly hire a consultant to assist with the process and then jointly hire a single attorney to complete the related paperwork once the merger terms have been agreed (La Piana & Hayes, 2005).

Finally, the failure of a nonprofit merger perhaps has more risk to society than failure in the corporate world. In for-profit mergers, the rationale for a merger is increasing shareholders' value, while in a nonprofit merger, the driving force is the mission (La Piana & Hayes, 2005). If a nonprofit merger is all about the mission, then a merger should allow the combined entities to better fulfill their now shared mission by serving more, serving better, or doing more with less. However, if the merger fails, it is the organization's mission and its beneficiaries that lose. While there is not enough quantifiable data to determine the average number of mergers in the nonprofit world that fail, Soloman (2009) brings this up as a critical issue given that the failure rate of mergers in the for-profit world is 50-80 percent. As Soloman (2009) summarizes,

In the for-profit world, shareholders risk their own money for the potential of personal gain. But at nonprofit organizations, where board members steward society's charitable dollars, the risk is squarely assumed by society. It is neither strategic nor prudent to gamble society's scant resources when the odds of a merger's succeeding are less than those of a flip of a coin. (para. 7)

BENEFITS

When nonprofits merge, it is anticipated that synergies will include cost efficiencies, increased or improved services, expanded market share and even increased funding. The question, then, is whether or not merged organizations are experiencing these synergies. To date, the answer is somewhat discouraging. In a 2012 survey of 104 nonprofit executive directors whose organizations had merged, shared back-office functions or collaborated with another nonprofit in Fairfield County, only 14 percent indicated that they had seen cost savings as a result of their mergers or merger-related activities (Gallagher, 2013).

The reason why merged organizations do not often see cost savings is the reality that the new entity is larger and more complex and requires more management (Giffords & Dina, 2003). La Piana (2010) expands on this concept by noting,

It is simplistic to think that two organizations that do similar work could gain efficiencies by merging together. When there is more than one organization in the same geographic area doing similar work, it often means that there should be more – not less – doing the work. It is not the duplication of services that is the issues, it is the duplication of service provider infrastructure. (p. 30)

Another expectation of mergers is that they will result in decreased competition for funding, which, in turn, could result in increased funding for the merged entity. However, several studies (Sargeant & Jay, 2002; Singer & Yankey, 1991) indicate that on average, a merged entity will see donations fall just before and then after the merger or will struggle with decreased funding for a period of time after the merger. Much of this is due to the overlap of donors between the two organizations. When an institutional or individual donor previously gave to both "old" organizations, they typically give less in total to the merged organization (Sargeant & Jay, 2002).

SUCCESS FACTORS

If merged organizations are not seeing cost savings or increased donations, what synergies are they experiencing? Primarily, merged organizations are seeing an increase in the quality of services provided. Two-thirds of those surveyed in the 2012 Fairfield County study indicated that their services increased in scope or quality as a result of the merger (Gallagher, 2013). An important aspect of achieving increased program scope or quality is by focusing on merging as a way to strategically grow an organization. In a 2009 study of twelve merged organizations, each organization listed the need for financial resources as a reason for contemplating a merger. However, of the mergers that were consummated, those that were successful focused on restructuring as a growth strategy (Campbell, 2009). Similar to the for-profit sector, growth in nonprofits can be gained by increasing scale, such as serving more people with the same programming space or acquiring additional programming space or through scope, and by providing expanded programming to an existing client base (La Piana & Hayes, 2005), all of which can be accomplished through a merger. While the pursuit of growth may seem like a small detail, it is important because it points to successful mergers being strategic and driven by mission rather than being a last-resort attempt to pool a failing base of resources.

While the perception may still be that nonprofits are motivated to merge because of pressure from funders or by lack of resources, those that merge successfully begin and end with a strong strategic and organizational fit (Cowin & Moore, 1996). In a study of mergers in the U.K., it was determined that “mergers were most successful when there was a shared vision of how the merger could benefit both partners. The evidence suggests that where there was a conviction that greater good could be achieved together, the merger was a success” (Cowin & Moore, 1996, p. 81).

Another key factor in successful mergers is the creation of a new organizational culture. Giffords and Dina (2003) go as far as saying that “culture fit” can make or break a merger (p. 74). Fundamentally, each nonprofit is established by someone who has a passion to make a difference and feels that they are the only person who can develop an organization to provide the specific program or service that is outlined in their mission. Because of this, nonprofits, often more than for-profits, have a strong culture. This strong culture is “invisible” and “unconscious” and “exacerbates the challenges for leaders in merger situations” (Hiland, 2003, p. 13).

While culture is also an issue in for-profit mergers, it is a more extreme issue in non-profit mergers because it is the mission, not the golden parachute or bonuses for staying that motivate employees, and it can be difficult to preserve the cultures of the old organizations and establish a new culture that is a fit for the merged entity (Pietroburgo & Wernet, 2010). As Hiland (2003) summarizes, “because nonprofit organizations are mission-focused (versus bottom line-driven), they attract board members and staff who are motivated by a passion for the organization’s cause. This passion, more than reason, can be a powerful motivator and can influence thinking and behavior throughout a merger process” (p. 12). Singer and Yankey (1991) remind us that, “although specific organizations and programs come to an end, their pasts survive in the minds, attitudes, and behaviors of former employees. This historical artifact is likely to continue well past the implementation phase of a merger, acquisition, or consolidation” (p. 366). Because of this, Benton & Austin (2010) suggest that organizations should undergo a “cultural due diligence” to ensure that both organizations fully understand the cultures they are seeking to integrate (p. 468).

Communication is often a critical component of creating a new and shared culture in a nonprofit merger. In a survey of 18 merged organizations, 52 percent indicated that communication was the most important part of the merger process (Singer & Yankey, 1991). Communicating openly with everyone from staff and board members to clients and community members critical to the over-all success of a merger (Sargeant & Jay, 2002). Giffords and Dina (2003) call communication the “sine qua non” that helps employees adapt and create support for the merger (p. 75). It may seem inconceivable to someone familiar with M&A in the corporate sector that one would speak openly about a planned merger with one’s staff let alone with clients. However, it is important to remember that if the mission is the primary driving force for a nonprofit, then the extent to which an organization can effectively communicate its vision for change and demonstrate how the merger will positively affect its clients, funders and supporters will largely determine the success it will have in retaining these same stakeholders post merge (Benton & Austin, 2010).

Increasingly, successful mergers are based on prior collaborations. This is not surprising, because funders have been encouraging collaboration between similar organizations for years (Sargeant & Jay, 2002). In a recent survey of 104 executive directors of nonprofits in Fairfield County, only 8 percent merged with another organization, but 10 percent shared back office functions with another organization, and a full 57 percent collaborated on programming and services with at least one other organization (Gallagher, 2013). Collaboration requires less effort and less integration and can be a “trial” for two organizations (La Piana, 2010). In addition, while straight mergers may not result in cost savings, 60 percent of organizations surveyed in Fairfield County who shared back office functions reported cost savings (Gallagher, 2013). More formal types of collaboration can include strategic alliances or joint programming, which unite services of two organizations without legally combining the entities, or administrative consolidation, which can help reduce costs by combining back office functions (La Piana, 2010). These collaborations also allow organizations to retain their existing identities and autonomy in varying degrees, unlike a merger that ultimately requires a loss of control and full integration of programs and staff (Benton & Austin, 2010). This ties back to the concept that if successful mergers result in the strengthening of services or expansion of mission, then the consideration of a merger needs to be proactive and strategic.

OPPORTUNITIES

In the nonprofit world there is a need to draw more attention to the concept of mergers and other restructuring opportunities such as joint ventures. In a 2002 survey of nonprofit leaders, nearly two-thirds indicated that they were not very familiar with the concepts of strategic restructuring (Connolly & York, 2002). In addition, Connolly and York (2002) point to the fact that because nonprofit restructuring is still relatively new, there is a significant amount of confusion on the part of funders, board members and other stakeholders as to their roles and responsibilities in the merger process. Although we can presume that awareness of mergers in the nonprofit sector has increased over the past decade, nonprofits need to have the concept of merging in their toolkit of possible strategies for achieving their mission.

Second, although the majority of nonprofits consider merging because of a funding issue, mergers may not be right path for organizations that are already in financial distress (La Piana, 2010). Instead of merging, nonprofits in a financial crisis should consider pursuing a partnership option

before seeking to merge (Gallagher, 2013; Giffords & Dina, 2003; La Piana, 2010; Sargeant & Jay, 2002). The establishment of a collaboration can help nonprofits provide better client services (Giffords & Dina, 2003), and if successful, organizations can later consider a more formal partnership or merger.

Third, the pursuit of a merger should be a result of a strategic priority to strengthen the organization's mission in some way. As Cortez et al. (2009) highlight, "The question facing a nonprofit should not be, 'Do we or do we not pursue M&A?' but rather 'How do we best fulfill our organization's mission and strategy to be effective, and is M&A a better option than other alternatives?'" (p. 5). In this process, it is important for nonprofits to remember that it is their mission and the individuals they serve who will suffer in the case of a bad or failed merger. Soloman (2009) summarizes, "In the case of charities, the losers are not corporate shareholders – they are generally the beneficiaries of services who have few, if any, alternatives to obtain the support they may be receiving. Therefore, reactionary nonprofit mergers lack strategic merit". A merger should always be part of a broader strategic plan and the desire to strengthen or expand a program's mission.

Fourth, nonprofit boards, staff, volunteers and funders need to be clear on the expected synergies of a merger and to focus on the compatibility of the merging organizations' missions. This process often requires a strong, visionary leader. As outlined earlier, mergers do not necessarily result in cost savings or increased donations. What a merger can provide is increased market share or expanded programming if the missions of the merging organizations are compatible and the new organization has a clear vision. As Benton & Austin (2010) note, "organizations can create a solid foundation from which to work toward their goals if they begin with a clear, shared definition of merger to specify the driving forces behind the merger and the potential challenges that need to be addressed throughout the merger process" (p. 460). The leader of this process needs to be a change agent or a catalyst who can move all parties forward to achieve the desired future of the new organization (Pietroburgo & Wernet, 2010).

Finally, there is the opportunity for future research on the success and failure of nonprofit mergers. To date, this area has not been studied extensively, and measures of success have not been clearly defined. While it is easier to define a successful for-profit merger as resulting in an increase in shareholder value, there are fewer benchmarks of success in non-profit mergers versus their for-profit counterparts. There should, however, be a standardized evaluation template that can help nonprofits plan achievable goals to gauge their success before, during, and after a merger.

CONCLUSION

While mergers in the nonprofit world may not have become a widely popular trend, as organizations continue to increasingly adopt for-profit business principles, the concept of mergers is likely to also spread (Jones, 2013). However, it is important to remember that nonprofit mergers revolve around the mission. A merger in the private sector "is typically viewed as a diversification strategy creating opportunity for future growth" (Norris-Tirrell, 2001, p. 315), but in the nonprofit world, the key factor driving a decision to merge is the belief that the merged entity will be able to advance the mission (La Piana & Hayes, 2005, p. 12). However, while the pursuit of the mission is critical to the success of a nonprofit merger, the fact remains that most mergers are contemplated

and consummated as a result of a financial crisis. This lack of “strategic rationale” (Cortez et al., 2009, p. 4) sets the stakeholder of merging organizations up for a mismatch of expectations.

Instead of being “the death of an organization or the failure of a mission,” (McCormick, 2001, p. 1), a merger should be an opportunity for an organization to better serve its beneficiaries (Benton & Austin, 2010; Norris-Tirrell, 2001). Because of this, mergers should not be contemplated as a response to financial pressures but instead should be viewed as a solution to a broader organizational strategy. Mergers can create value in the nonprofit sector, but such value can be maximized if a merger is being contemplated proactively to strategically produce a strong organization.

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MEDICAL TOURISM: HOW FAR ARE YOU WILLING TO GO TO SAVE MONEY?

Thomas J. Prinsen, Indiana Wesleyan University
Tom.Prinsen@indwes.edu

Louis K. Falk, University of Texas at Rio Grande Valley
Louis.Falk@utrgv.edu

Javier Martinez, University of Texas at Rio Grande Valley
Javier.Martinez@utrgv.edu

ABSTRACT

Medical needs of Americans are increasing as the population is aging and struggling with obesity. The addition of new medical technology and techniques, their widespread availability, and procedural improvements have created a more open market for medical providers. Costly procedures in cardiology and orthopedics serve as examples of increasingly needed medical treatments. Individuals, businesses and insurance companies have struggled to find ways to pay for these necessary procedures. Traditionally, in the U.S. the majority of medical procedures have been performed locally. Because of the rising costs associated with these procedures individuals and some healthcare providers are now looking to foreign markets. The performance of medical procedures by foreign providers has created a whole industry referred to as Medical Tourism. The growth of the field of Medical Tourism has presented significant questions, as well as substantial risks and rewards that need to be addressed before the consumer decides what is right for their particular circumstances.

Keywords: Medical, Tourism, Medical Tourism, Healthcare, Advertising, Marketing

INTRODUCTION

Many factors have been offered for fluctuations in healthcare markets. Healthcare affordability, population health trends such as obesity rates, insurance availability, overall economic conditions and the availability of surgeons and facilities have been discussed. One factor that has been discussed less is medical tourism when, in fact, medical tourism encompasses all of the previously mentioned factors. When considered together, these factors may lead a patient to travel to a foreign country or to another part of his or her home country. Any market factor that has the potential to drive thousands of patients to or away from treatments and/or treatment locations is worthy of closer examination.

The objectives of this paper are to: 1) Define medical tourism, 2) better understand the scope of the medical tourism industry and 3) better understand the factors that may drive patients to consider medical tourism.

MEDICAL TOURISM DEFINING THE MARKET

The Medical Tourism Association (MTA) is a Global Non-profit dedicated to ensuring that patients receive high quality healthcare. They work with and provide education for all stakeholders in the medical tourism equation including hospitals and their employees, governments, healthcare purchasers and patients. The MTA defines medical tourism as, “where people who live in one country travel to another country to receive medical, dental and surgical care while at the same time receiving equal to or greater care than they would have in their own country, and are traveling for medical care because of affordability, better access to care or a higher level of quality of care” (Medical Tourism Association, n.d., FAQ, para. 1). The MTA differentiates medical tourism from domestic medical tourism, which is people traveling within their home country to receive medical care.

Another definition comes from the Contemporary World Issues series of books which are designed to offer a starting point for the study of world issues such as Autism, Climate Change, Environmental Justice, Women in Developing Countries and several other important topics including Medical Tourism. Their definition of medical tourism, located in the text of that title is, “the idea of traveling for the purposes of obtaining healthcare or wellness services. It can range from driving to a hospital in a neighboring state to take advantage of discounted foot surgery, to flying to Costa Rica for a tummy tuck, or to India for an artery bypass” (Stolley & Watson, 2012, p. 2).

In the academic publication, the *Journal of Medical Ethics*, Crozier and Baylis (2010) define international medical tourism as “patient-customers who travel overseas for normally nonemergency medical treatment, healthcare, or aesthetic services” (p. 366). An important distinction in their definition is the specification of “nonemergency” care with the inclusion of “aesthetic services.”

It quickly becomes apparent that there are differences, sometimes subtle, between definitions of medical tourism. In this case, the definition determines the size and scope of the medical tourism market, and by extension, its level of importance to each stakeholder group.

Medical Tourism Market Size and Scope

The scope of the medical tourism market is global, to say the least. In 2008, Woodman stated, “Currently, at least 28 countries on four continents cater to the international health traveler, with more than 2 million patients visiting hospitals and clinics each year in countries other than their own” (p. 7). In 2012, Stolley and Watson’s *Medical tourism a reference handbook* included details for seeking treatment in 23 countries outside of the U.S.

The inclusion or non-inclusion of dental care, aesthetic services, and even trauma services at international ski destinations can skew the reported size and scope of the medical tourism market. Furthermore, current sources are difficult to find. Academic sources generally do not offer the most current industry data, based on the nature of the sometimes lengthy peer-review process. Academic sources tend to rely on industry or governmental publications for these types of figures. Industry sources are proprietary and are often not shared, or at least fully shared, with the public.

“Deloitte provides industry-leading audit, consulting, tax, and advisory services to many of the world’s most admired brands, including 70% of the Fortune 500” (Deloitte, n.d., About, para. 1). Their work crosses more than 20 industry sectors, including life sciences and healthcare. Medical tourism sources often quote Deloitte reports when citing the size of the market, (Chen & Flood, 2013; Crozier & Baylis, 2010; Stolley & Watson, 2012). The publications most typically cited are Deloitte’s 2009 *Medical tourism: Consumers in search of value* and *Medical tourism: Update and implications*. The 2009 update predicted 1.6 million U.S. patients will travel to foreign countries to seek medical care by 2012, with a sustainable growth rate of 35%. The report also predicted 561,000 foreign patients will travel to the U.S. for treatment.

Deloitte has not provided another update specific to medical tourism but has released a report for healthcare in general, and that 2014 report includes information about medical tourism. The report offers some region specific information concerning medical tourism and some country specific information. Southeast Asia may be at a healthcare tipping point and medical tourism is one of the growth strategies for their industry. Country-wise, improving the quality of care and achieving Joint Commission International (JCI) certification would help give Mexico a competitive advantage in medical tourism and with local markets. “Oil-rich countries, in the middle east - notably the UAE and Saudi Arabia, see better healthcare provision (including medical tourism) as a way to ease political dissent and also diversify their economies” (p. 14). The report offers specific information concerning India. India is a fast growing medical tourism market receiving patients from Africa, the Middle East, and other regions.

Deloitte has also been putting out country specific reports. The 2015 report for India, which itself relies on multiple sources, predicts medical tourism of \$1.8 billion by 2015. Further, 2.2% of foreign tourists who came to India in 2009 came for medical reasons. This percentage increased to 2.7% in 2010.

The World Health Organization offered a bulletin (Helble, 2011) on medical tourism that included some data. It quoted the Deloitte (2008) data along with another frequently cited source by Ehrbeck, Guevara, and Mango, which was listed in McKinsey Quarterly, 2008. The McKinsey report placed the then-current 2008 market of U.S. residents traveling out of country at 60,000 to 85,000 inpatients per year. These McKinsey Quarterly numbers are much smaller than those reported by Deloitte and other sources. As the report noted, this may be a result of McKinsey’s market estimate not including emergency cases, wellness tourists, or expatriates seeking care in their country of residence. McKinsey also excluded patients traveling in largely contiguous geographies.

The scope of the medical tourism industry is clearly global but details, including overall and country-specific numbers vary substantially and are difficult to find. Ultimately, many factors driving growth were offered within the sources noted above and those factors deserve further exploration.

FACTORS PROPELLING PATIENTS TOWARD MEDICAL TOURSIM

There are many factors that individually are causing an increase in medical tourism. Cost, quality of care, healthcare legislation, and healthcare infrastructure all have to do with an individual's decision to travel across international borders to seek healthcare.

Healthcare Costs

In 2013, the Medical Tourism Association conducted a survey of 500 website registrants and found that “nearly 80% of demand for medical travel is driven by cost savings” (Medical Tourism Association, 2013, Survey Report, para. 5). The 2013 Healthcare Cost and Utilization Report examined healthcare cost and utilization trends for a narrow group, Americans younger than age 65 that were covered by employer sponsored insurance (ESI). The age component is significant because Medicare coverage begins at age 65. Although this analysis uses a limited sample of the U.S. healthcare market, the report does offer a statistical look into healthcare.

Healthcare spending for the ESI group increased 3.9% in 2013. This was fueled largely by the rising prices of medical services and brand prescriptions even as utilization of these services and prescriptions fell. While medical tourism was not discussed in the report, it is clear that among the insured, costs were putting pressure on individuals to keep use down.

For those that are purchasing coverage through the insurance exchanges created in conjunction with the Affordable Care Act many national news outlets point out that costs are increasing. Pear, Abelson and Armendariz (2014) noted in their New York Times article how the Obama administration offered data showing that the exchange purchasers were facing increases up to 20% unless they switched plans. Kevin Maney (2013) used the following analogy to describe healthcare and healthcare costs: “U.S. healthcare is like movie theater popcorn – ridiculously overpriced and nothing special compared to what you can get elsewhere. We put up with it because we’re captive” (p. 122).

One of the companies to rise up to support medical tourism is MedRetreat. MedRetreat is a company that was founded in 2003 to “fully introduce the concept of medical travel as a viable option to the increasing costs and exclusivity of the US healthcare system” (MedRetreat, n.d., About, para. 3). MedRetreat offers their services to individuals, privately funded corporations, institutions, and insurance companies. Following is an example of an insurance company and an individual working together to show how one of their programs would dramatically decrease the cost of the procedure if a patient were in need of a hip replacement:

In the U.S., hip replacements can cost from \$40,000.00 - \$65,000.00. If an individual would agree to utilize a foreign destination for medical services they may offer the following incentives to the patient:

- 1) Waive the deductible
- 2) Waive the co-pay
- 3) Offer them the opportunity to take a companion along on their medical retreat
- 4) Allow an extended stay in the destination for recuperation

5) Offer a cash incentive to receive their procedure abroad

Review of savings:

For purposes of averaging the costs, \$50,000.00 is used as the base price for a hip replacement in the U.S. The average cost for this procedure in one of our overseas destinations is approximately \$15,000.00 and includes the following:

- 1) Hip replacement including doctor's fees, anesthesiologist fees, operating theater, prosthesis, 10 days physical therapy, 10 days stay in a private room, surgeon's follow-up visits, nursing care, meals, supplies & a limited supply of medications
- 2) Two round trip coach tickets
- 3) Three weeks post-operative recuperation in a 4-5 star hotel
- 4) Full facilitation by MedRetreat
- 5) Destination Program Management Services

This calculates to a savings of \$35,000.00, or, 70% of the costs in the U.S. leaving a considerable amount of surplus for a cash incentive to the healthcare recipient.

(Medretreat, n.d., Corporate/Insurance, para 4-5)

Additionally, an insurance company could offer to share a portion of the savings (cash incentive) with the healthcare recipient. Accordingly, the biggest motivating factor to someone choosing to receive surgery abroad is financial preservation (Medretreat, n.d., Corporate/Insurance). The net result could be that the employee will be in a positive cash flow situation instead of a cash deficit had they stayed in the U.S.

This example suggests how the insurance company or other payer and the patient may come out financially ahead as compared to having the hip replacement in the U.S. The insurance company or other payer saves \$35,000 and so has money with which to offer substantial incentives to the patient in return for their willingness to have the hip replacement performed in a foreign country. The patient also comes out ahead as they go from a cash outlay for deductibles, co-pays, and other expenses to a potential positive cash flow, depending upon the incentive offered by the insurance company/payer, in addition to receiving the necessary medical care often in a luxury environment. In scenarios in which an individual has no coverage at all, there may not be a cash windfall, but the individual would save the full \$35,000 by having his or her hip replaced outside of the U.S.

Not all procedures and not all medical tourism destinations offer the same savings, but the MTA estimates these savings for the following destinations:

- Brazil, 25-40 percent
 - India, 65-90 percent
 - Malaysia, 65-80 percent
 - Singapore, 30-45 percent
 - Thailand, 50-70 percent
 - Costa Rica, 40-65 percent
 - Korea, 30-45 percent
 - Mexico, 40-65 percent
 - Taiwan, 40-55 percent
 - Turkey, 50-60 percent
- (Stephano, 2013, p. 12)

Insurance Companies & Employers

Employers changing the type of insurance coverage may have an effect on participant decisions concerning their willingness to travel for their healthcare. According to the Kaiser Employer Health Benefits 2006 Annual Survey, 4% of plans were high deductible plans. The percentage of high deductible plans had doubled to 8% by 2009, was 13% by 2010, jumped to 17% by 2011, and then expanded to 19% in 2012. In 2013 and 2014 the percentage was steady 20 (Kaiser, 2014). While a statistical relationship between insurance plan types and changes in willingness to travel may not correlate, a common sense lens should be applied. A high deductible combined with a reduction of out of pocket expenses should expand the possibility of patient's willingness to travel for healthcare either domestically or abroad.

In addition to insurance types, the Affordable Care Act and economic factors have forced significant changes in the medical industry as a whole and specifically within the health insurance industry. There have been winners and there have been losers as some Americans have gained coverage and others have lost coverage. In some cases the loss was a change in plans. For others it was a complete loss of coverage. These changes have forced insurance companies, employers, and the insured to look for new alternatives.

The Medical Tourism Association magazine from January 16, 2012 includes an article (p. 107) about what was believed to be the first agreement of its kind. The agreement between the New Era Life Insurance Company and four hospitals in Taiwan allows policy holders to seek treatment overseas. The participants will receive healthcare, as well as travel-related costs. While the actual insurance policy was limited primarily to patients of Asian descent, it was an important first step. An article in the same magazine issue (p. 121) announced that PepsiCo had signed an agreement with Johns Hopkins Medicine in Baltimore which would give the nearly 250,000 PepsiCo employees the option of traveling to Baltimore for cardiac procedures and complex joint replacement surgery. PepsiCo will waive deductibles and coinsurance for those who travel. This deal followed a similar deal between Lowe's and the Cleveland Clinic. Although the PepsiCo deal was domestic, it is still important in that it has the potential to normalize Medical Travel.

It may take years to normalize Medical Travel, or at least to normalize it to the level that insured individuals take full advantage of the savings offered by their insurers - for receiving healthcare in a foreign country. To that end in 2008, with much fanfare WellPoint introduced their international medical tourism pilot program. In WellPoint's press release (PR Newswire, 2008) they wrote:

The nation's largest health benefits company in terms of medical membership, today announced a new international medical tourism pilot product that will allow members to access benefits for certain common elective procedures at designated facilities in India. Beginning in January 2009, WellPoint's affiliated health plan in Wisconsin will pilot the program with Serigraph, Inc., a Wisconsin based global provider of printed decorating solutions". The program was to begin in January, 2009. (para. 1-2)

Although Serigraph was known to reduce healthcare costs around the time the program was started, a literature search has been unable to determine the success or failure of this specific program.

Perhaps India was too far to travel, or too different. Aetna (Aetna 2010), Blue Shield of California (Blue Shield 2010) and Health Net (Health Net, n.d., Salud Plan Highlights) each provide health insurance plans that cover healthcare provided in Mexico. A key distinction in this type of medical tourism is that there are limited cultural differences. The Health Net website notes this when writing, “Salud con Health Net is a system of healthcare designed to specifically meet the cultural preferences of the Hispanic community” (Health Net, n.d., Salud Plan, para. 1).

Interest in medical tourism in the U.S. may be increasing. Pani Tademeti’s (HR Manager-Total Compensation, Office of Personnel for the State of North Carolina) speaking at the Medical Tourism Association’s 2011 annual congress stated, “Employee benefits and medical tourism have a key factor in common; the participant seeking the benefit that fits the cost.” He goes on to say “Exposure of benefits professionals to medical tourism topics gives a vital opportunity to recognize each other’s needs and how the medical tourism benefit could be offered as an attractive employee benefit” (Stephano 2012 p. 3). A few of the states, West Virginia and Colorado, have introduced bills that would offer incentives for covered employees to obtain medical care or medical procedures in foreign healthcare facilities. The West Virginia bill stipulated that the healthcare facility must be accredited by the Joint Commission International (Deloitte, 2009). While neither bill passed, it shows that as early as 2007, states had been looking at foreign medical care as an option.

Medical Tourism Destinations

Whether the anticipated growth comes from increased insurance company participation or other sources, the expected growth in the medical tourism market has fueled the construction of new hospitals around the globe. In countries such as Trinidad and Tobago new specialized medical centers are being built. Trinidad’s Health Minister, Dr. Fuad Khan, announced plans for the new complexes. “The centers would include cardiovascular, neuro-surgical, critical care medicine, interventional radiology, interventional cardiology, radiotherapy, hematology, blood transfusion, gastroenterology, orthopedic and other areas. Khan could not state how many centers would be built but that they will be financed by the private sector” (Medical Tourism Magazine 2013, para. 2). More specific plans were offered in a September, 2014 news article (Dhalai, 2014, para. 8), in which Trinidad’s Minister of Housing and the Environment, Dr. Roodal Moonilal, “addressed infrastructural improvements for the healthcare sector saying construction of six more major healthcare facilities had been allocated in the national budget.”

Other countries are using medical tourism as a means to grow their economies. Deloitte (2014, p. A14) writes that “Oil-rich countries, notably the UAE and Saudi Arabia, see better healthcare provision (including medical tourism) as a way to ease political dissent and also diversify their economies.” Annually serving more than 520,000 international patients Bumrungrad International Hospital is one of the largest private hospitals in Southeast Asia and is one of 14 Joint Commission International accredited hospitals in Thailand (Bumrungrad, n.d., Who we are).

India offers somewhat of a microcosm of the state of many countries in the medical tourism industry. The 2015 Deloitte report specific to India provides a fairly negative picture of India’s public healthcare system, calling it “patchy and underfunded” (p. 1). In short, the healthcare system has fallen behind over the past several years and it is going to take serious efforts and serious

funding to get it up to the desired level. Even so, medical tourism is expected to double from \$980 million in 2011 to \$1.8 billion in 2015. The optimism may be coming from the Indian government's placing priority in its 2014-2015 budget on the healthcare sector. Proposed changes include building four more India Institute of Medical Sciences medical institutions, 12 more medical colleges, improving the telemedicine system, allowance of more foreign investment in the medical insurance business, and \$1.7 billion for establishing other medical related businesses. S. Premkumar, CEO of Apollo Hospitals in India is optimistic about the future of healthcare in India and plans to do with Indian healthcare as he did with the Indian software industry, grow it dramatically (Maney, 2013). Premkumar "wants to make medicine truly global, so every patient feels that choosing from options around the globe is as safe and easy as deciding whether to buy the premium designer umbrella or the Chinese-made version that costs 75 percent less" (para. 8). Part of his plan is to "partner with a U.S. hospital company that would take care of patients before and after the trip abroad" (para. 14).

To some degree, Cleveland Clinic Abu Dhabi is an example of Premkumar's vision. It is the type of facility that will allow people from the area seeking quality healthcare to stay in the region. While not open to patients yet, Cleveland Clinic Abu Dhabi is set to open in 2015.

Cleveland Clinic Abu Dhabi, a Mubadala Company, is a world-class multispecialty hospital on Al Maryah Island in Abu Dhabi, UAE, specifically designed to address a range of complex and critical care requirements unique to the Abu Dhabi population. A 364 (expandable to 490) bed hospital, Cleveland Clinic Abu Dhabi will combine state-of-the-art amenities and world-class service standards. It will be a physician-led hospital served by North American board certified (or equivalent) physicians. Cleveland Clinic Abu Dhabi will provide patients in the region direct access to the world's best healthcare providers and Cleveland Clinic's unique model of care, reducing the need to travel abroad for treatment. (Cleveland Clinic Abu Dhabi, n.d., FAQ, para. 1).

The delineation between Premkumar's vision and the Cleveland Clinic Abu Dhabi is that Premkumar would like to see patients travel from outside the region to use Indian medical facilities.

Not all hospitals will have the built in credibility that comes from the Cleveland Clinic name so the focus of those promoting medical tourism cannot be on price alone. While the number of countries with international hospitals increase, issues remain about how to best monitor quality and how to communicate that quality to potential medical tourism patients. The Joint Commission International (JCI) is the international arm of the Joint Commission, a highly recognized healthcare accreditation body in the U.S. "Joint Commission International (JCI) identifies, measures, and shares best practices in quality and patient safety with the world. We provide leadership and innovative solutions to help healthcare organizations across all settings improve performance and outcomes" (Joint Commission International, n.d., para. 1). For practical purposes, JCI accreditation lets patients know that the hospital has met the standards expected of a quality institution. Benefits of JCI accreditation are that it provides an American patient with peace of mind by evaluating whether a physician or hospital is credible and offers the level of care to which they are accustomed (Moreno, 2013).

The most likely destination for the U.S. medical tourists is Mexico, because of its proximity. “Achieving Joint Commission International (JCI) certification and complying with industry best practices could dramatically improve the quality of care provided by Mexico’s health institutions and give them a competitive advantage both globally (i.e., for medical tourism purposes) and in their local market” (Deloitte, 2014, p. A12). Mexico is expected to have a higher rate of increase in medical spending over the next few years and has a demographic that will continue to need increasing levels of care. At the same time, lack of resources for health infrastructure is a major problem. Even with these issues, Mexico is the second rated medical tourism destination (Deloitte, 2014).

Given the reluctance of Americans to travel outside of U.S. borders for medical care, the MTA has created a Medical Tourism Documentary “Angels Overseas” with the goal of helping potential international medical tourists feel more comfortable with this type of travel by showing them the experience of someone like them (Medical Tourism Association, n.d., Documentary).

After considering the market size, cost savings, quality of care and other aspects of the medical tourism marketplace, there is still a missing element. Many ethical issues arise when resources begin to move within and between countries.

ETHICAL QUESTIONS

Many ethical issues arise as patients and healthcare providers weigh medical decisions, and medical tourism adds substantially to the list of issues. If a U.S. patient cannot afford a procedure if done in the U.S., but could afford the procedure if completed in Brazil, should the physician promote or attempt to constrain the patient’s medical travel? Would the advice change if the procedure were illegal, or at least not FDA approved in the U.S. but was not regulated in Brazil? Another scenario could be a patient living in pain but on a year-long waiting list for Hip Replacement Surgery and living in Canada, a country with national healthcare. If the patient could have his or her hip replaced in a matter of weeks rather than in a year by traveling to India, should the patient be encouraged to take the trip? Should Canada fund the procedure? Would the decision be different if a majority of the residents of India did not have access to the type of care being sold to the Canadian citizen? These questions are starting to be answered. Crozier and Baylis (2010) created four broad categories, or “decision spaces” that cover many of the ethical issues likely to be encountered:

- A. Elective procedures that are expensive in their home country, and which are available at a fraction of the cost in destination countries;
- B. Medically necessary procedures for which there are long domestic waiting lists;
- C. Medical interventions unavailable in their home country because they have not yet been shown to be safe and effective; and
- D. Medical interventions that are illegal in their home country because they harmfully exploit vulnerable third-parties. (p. 299)

For the most part, Crozier and Baylis (2010) would have physicians perhaps promote, but at least not inhibit travel for scenarios in the A and B categories. More restrictive considerations, including outright discouraging of travel are likely for scenarios in the C and D categories.

Specific questions concerning the ethical issues within medical tourism generally fall under the questions of whether or not medical care is or is not and whether it should or should not be a commodity. Pellegrino (1999) offered this succinct response to the questions surrounding commodification of medical and healthcare:

- 1) health and medical care are not, cannot be, and should not be commodities;
- 2) the ethical consequences of commodification are ethically unsustainable and deleterious to patients, physicians, and society;
- 3) commodification does not fulfill its economic promises;
- 4) Healthcare is a universal human need and a common good that a good society should provide in some measure to its citizens (p. 244).

Whether or not healthcare is considered a commodity comes down to whether or not a person sees healthcare differently from other commodities that can be bought and sold such as automobiles or automotive parts. If there is no distinction, then healthcare can be bought, sold and traded just like automobiles. If, however, medical care is seen as something different, something with a greater value than monetary, then healthcare should be treated as something more than a commodity. Medical tourism exacerbates the issue because in most cases the person purchasing the healthcare is from a country of much greater wealth and opportunity than the host country and this income disparity is a root cause of the inequality in healthcare. While this imbalance seems to be mostly okay for many products, it may not be for healthcare.

PUTTING THE TOURISM IN MEDICAL TOURISM

Clearly, one of the biggest reasons to travel abroad for medical services is to save money. That written, the patient's personality also helps determine whether or not having medical procedures performed in another country is right for them. An adventurous type may not think twice, while someone more risk averse may never be convinced. Combining the medical nature of the trips with the personality of those willing to travel for healthcare may allow medical trips abroad to serve a dual purpose. The first being the procedure, the second could be the chance to enjoy more traditional tourism opportunities. Countless people dream of traveling overseas and visiting holy places or connecting with distant relatives. To hear family speak of things from their childhood in distance lands leads many to want to visit those lands. Tying these types of trips into an all-encompassing vacation may be an extra incentive to some people.

The 2013 MTA Medical Tourism Survey Report (Sayfullaah, Huiyu, & Shuai, 2013) suggests that, while not at the same importance level of cost, technology or accreditation, leisure and tourist attractions were also important in the selection of a destination country (10% Very Important, 23% Fairly Important, 43% Neither Important nor Unimportant, 14% Fairly Unimportant, 10% Very Unimportant). In other words, 33% of respondents indicated that leisure and tourist attractions were fairly or very important. A specific breakdown of activities conducted during past trips by medical tourists shows the percent of medical tourists that participated in the following tourism activities: Adventure (6%); Art, Galleries, Museums (6%); Beaches (3%); Day and Health Spas, Health and Beauty (11%); Entertainment, Events, Festivals and Show (6%); Heritage and History (11%); Performing Arts and Culture (3%); Sightseeing (17%); Tourist Shopping and Souvenirs (19%); Tramping, Hiking, Guided Walks (6%); Zoos, Wildlife Parks, Aquariums (3%). Other

included categories had no participants: Boats, Sailing and Charters; Surfing, SUP Boarding, Water Sports; Theme and Leisure Parks.

CONCLUSION

There are few medical tourism related numbers upon which there is a sense of agreement. The market size depends largely upon the definition that one uses and, even if there is mostly agreement on the definition, different sources provide very different figures. The tremendous growth predicted in the 2000s was slowed by an economic downturn, but the underlying premise for medical tourism remain.

- 1) Healthcare costs are high and increasing, putting medical care out of the reach of many people across the globe.
- 2) There is great disparity in medical costs across regions and countries.
- 3) Many stakeholders have a vested interest in providing healthcare at lower costs, including patients, insurance companies, private investors, employers and those providing the care.
- 4) People from regions where medical care is out of reach locally are able to afford the care if the care is given in another location.
- 5) Organizations (Ex: MTA, JCI) exist with the purpose of putting the stakeholders in place so that patients receive the care they need from quality healthcare providers in quality facilities.

Actions are being taken on the presumption that the above factors will drive growth in the medical tourism industry. Hospitals are being built around the globe with both public and private funding, with the hope that these facilities will bring in the necessary patients needed for them to thrive. Medical tourism seems to be at a tipping point as it has grown into a significant business representing billions of dollars, yet represents a fraction of the total dollars that could be spent in this manner. Much of this investment is in countries that are not providing an acceptable level of healthcare to their own citizens, creating ethical issues that will need to be resolved. The next decade will provide increasing healthcare opportunities and fuel the medical tourism trend.

If you decide to become a Medical Tourist, then the Center for Disease Control and Prevention (2013) lists ten things you should do:

- 1) See a travel medicine practitioner at least 4–6 weeks before the trip to discuss general information for healthy travel and specific risks related to the procedure and travel before and after the procedure.
- 2) Check for the qualifications of the healthcare providers who will be doing the procedure and the credentials of the facility where the procedure will be done.
- 3) Make sure that you have a written agreement with the healthcare facility or the group arranging the trip, defining what treatments, supplies and care are covered by the costs of the trip.
- 4) Determine what legal actions you can take if anything goes wrong with the procedure.

- 5) If you go to a country where you do not speak the language, determine ahead of time how you will communicate with your doctor and other people who are caring for you.
 - 6) Obtain copies of your medical records that includes the lab and other studies done related to the condition for which you are obtaining the care and any allergies you may have.
 - 7) Prepare copies of all your prescriptions and a list of all the medicines you take, including their brand names, their generic names, manufacturers and dosages.
 - 8) Arrange for follow-up care with your local healthcare provider before you leave.
 - 9) Before planning "vacation" activities, such as sunbathing, drinking alcohol, swimming, or taking long tours, find out if those activities are permitted after surgery.
 - 10) Get copies of all your medical records before you return home.
- (Center for Disease Control and Prevention, 2013, para. 4).

With all this information the question becomes - are you ready to have your medical procedures performed on foreign soil?

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TO MULTITASK OR NOT, THAT IS THE QUESTION

Lawrence E. Zeff, University of Detroit Mercy
lawrence.zeff@udmercy.edu

Mary A. Higby, University of Detroit Mercy
mary.higby@udmercy.edu

ABSTRACT

Connectivity through the use of smartphones takes place both on the job, as employees “multi-task,” talking/texting with friends and family, and out of the workplace, as employees continue to work on job-related tasks. Our research examines how work productivity increases and decreases through the use of smartphones. It increases, e.g., when work related outcomes are accomplished during off-work hours, while productivity decreases, as when social connections are maintained during working hours. As more and more people become tech savvy, social and business connectivity blurs the boundaries between work and home. In 2010 there were 62.6 million smartphones, and in 2014 the estimate of smartphones in the U.S. went up to 163.9 million, a little over half of the number of people in the U.S. (Number of smartphone users..., 2015). Globally, over one-quarter of the population has smartphones (1.8 billion phones for 7.1 billion people) and this is expected to increase to over a third of the population by 2017 (eMarketer, 2014). Adding to the complexity of determining the impact on productivity is the concept of Work/Home Interference (WHI). WHI is also affected positively and negatively by the use of smartphones, both increasing the tension created by this interference when home life is affected and decreasing this tension when recovery occurs from WHI. Recovery, the notion of “human sustainability,” re-energizes employees which is required for organizations to be successful in a competitive environment. Connectivity is changing our culture so that completing work-related tasks at home is both more expected by employers and accepted by employees.

Keywords: Multitasking, Work/Home Interference, Smartphones at work, Millennials, Human sustainability

INTRODUCTION

We watched in awe as a student (President of his college class and one of the top graduating students this year) accessed and conversed on several social media applications by using his computer and two smartphones, and occasionally paid attention during class . . . all at the same time. When he was asked to close his laptop and join the class, his response was: “haven’t you ever heard of multitasking?” We have continually noticed that students and employees spend considerable amounts of time in class and on the job paying attention to their smartphones and cyber loafing on their electronic devices (smartphones/tablets/laptops). People at Home Depot text and talk on their phones while, or instead of, stocking the shelves with merchandise; wait staff and bus persons in restaurants check their emails/tweets/messages while, and in between, clearing and waiting on tables; students busily attend to their smartphones, laptops and tablets during

discussions in class; receptionists make customers wait while they finish on their smartphones; drivers do not pay attention to traffic or street lights while texting; executives pay more attention during meetings to their smartphones than to discussions taking place; and salespeople interrupt clients to check a message or take a phone call. And so we started thinking about the impact of the smartphone on the performance of workers and students: is technology increasing or decreasing our efficiency and effectiveness? The relationship between smartphones and job performance is a complex one. Performance may be directly increased through its usage, for example, when smartphones are used at night to solve a pressing problem that may occur overseas, while at the same time this usage causes added stress on employees, thereby making the overall impact on performance highly uncertain.

Smartphones are everywhere! People bump into each other on the streets because they are so busy looking at and typing on their phones that they are not paying attention to where they are walking. Are they also paying so much attention to their phones that they are not aware of their jobs? In the Spring of 2011, 35% of all adults in the United States owned smartphones, and today, that number has increased to 64% (Smith, 2015). If we look only at people in the 18-29 age group, this number increases to 85% (Smith, 2015). In 2010, there were 62.6 million smartphones, and in 2014 the estimate of smartphones in the U.S. goes up to 163.9 million, a little over half of the number of people in the United States (Statista, 2014). Globally, the number of smartphones is greater than one-quarter of the population (1.9 billion phones for 7.3 billion people for 2015) and this is expected to increase to over a third of the population by 2018, with more than 2.56 billion users (Number of smartphone users..., 2015). As of 2013, fifteen countries already have over 55% smartphone penetration of their population, including the U.S., which is only thirteenth on this list (Fox, 2013).

Millennials today comprise the largest single generation in the U.S. workforce, with 53.5 million workers, according to Richard Fry of the Pew Research Center (2015). By this research, Millennials are those people born between 1981 and 1997, while the Bureau of Labor Statistics defines them as being born between 1976 and 2001 (Burrige, 2014). Duggan and Rainie (2012) indicate that 85% of American adults own a mobile phone. That percentage increases to 90% when looking only at ownership for Gen X (those born between 1965 and 1980, according to Taylor & Gao, 2014, of the Pew Research Center) and to 94% for Gen Y (the Millennial generation). Our class president, who started this inquiry, is more the norm than the exception in class. Multitasking in the classroom and on the job has been both applauded as improving performance and questioned as costing companies based on lost time by employees who are using work time to deal with personal issues on electronic devices (see, for example, Choudhary, 2014; Harmon, 2011; Spira & Feintuch, 2005).

MULTITASKING

Multitasking is doing several things at the same time, but is it? Medina (2008), for example, notes that it is virtually impossible to multitask when it comes to paying attention. Furthermore, he indicates how people who are interrupted take 50 percent longer to accomplish a task and tend to make up to 50 percent more errors. Strayer and Watson (2012) report that “our performance deteriorates drastically when we attempt to focus on more than one task at a time” (p. 24). They also found that only a very small percentage of people can actually multitask, in their studies only

2½ percent. Multitasking allows people to achieve more than one goal at a time and to take part in more activities. “However, engaging in multiple attention demanding tasks simultaneously may be cognitively and physically taxing. Moreover, performance on individual tasks may suffer such that errors are made and overall productivity is diminished” (Sanbonmatsu, Strayer, Medeiros-Ward, & Watson, 2013, p. 1). People who are likely to multitask are those who believe they are good at handling multiple activities at the same time and who expect the highest rewards at the lowest costs. Those who exercise high levels of executive control are able to focus on task goals while avoiding conflicting distractions (Kane & Engle, 2002). However, Sanbonmatsu, et al., (2013) suggest that “although perceived multi-tasking ability may increase the willingness to multi-task, multi-tasking activity may also affect perceptions of multi-tasking ability” (p. 7). Ophir, Nass and Wagner (2009) found that individuals who report multitasking more frequently, multitask less well than those who are less frequent multitaskers.

Much of the literature distinguishes between conscious and subconscious multitasking (see, e.g., Bannister & Remenyi, 2009). Since the conscious mind can only focus on one task at a time, tasks must be handled sequentially. When this is done, however, multitasking takes some time to switch from one task to another, thereby adding additional time needed to complete both tasks (see, e.g., Dzubak, 2008; Jarmon, 2009; Wiley & Jaroz, 2012). When the subconscious is involved, one task takes priority and is attended to by the conscious mind. Remaining tasks are put on “autopilot” and are dealt with as if they were done by rote. Bour (2010) provides the example of a student who is attending to reading and responding to text messages during a class lecture. Since the lecture is the task that is handled by the subconscious, it is the lecture material that is not absorbed by the student. With no self-monitoring, such as the self-restraint needed to simply put the phone away, multitasking dramatically lowers the amount of learning that takes place. Grinols and Rajesh (2014) discuss how smartphones “enable users to divert attention from the task at hand to non-germane matters” (p. 89). How many times have we been driving and talking on the phone in the car. Our subconscious mind is handling the driving task, while we attend to the phone conversation. Many car accidents have occurred while the subconscious is on auto-pilot. In the U.S. many states have laws which are designed to prevent individuals from holding a phone in one hand and the steering wheel in the other, while 46 states prohibit text messaging for all drivers (Distracted driving laws, 2015).

Multitasking actually amounts to a stream of interruptions. These types of interruptions for office workers in the U.S. occur as often as eleven times per hour (González & Mark, 2005). In most offices in the U.S. and other countries, it is not unusual to see knowledge workers involved with multiple tasks at the same time. However, such employees are actually juggling tasks. Jobs often require constant shifting among several tasks, although many jobs are more effective without any interruptions (Bannister & Remenyi, 2009). As new technologies such as smartphones, tablets and laptops have become available, more multitasking is expected so that employees may respond more quickly to peers, superiors, customers, vendors, and so forth. One basic issue is whether these new technologies actually improve productivity, performance and quality of life. Mintzberg (1970, 1973) found that managers carry out many tasks during the day and often spend only a minute on some tasks before they are interrupted and move on to another task. More recently, González and Mark (2004) state:

What surprised us was exactly how fragmented the work is. In a typical day, we found that people spend an average of three minutes working on a single event before switching to another event. Informal interactions average somewhat more than four and a half minutes each. Further, people spend on the average somewhat more than two minutes on any use of electronic tool, application, or paper document before they switch to use another tool. The longest duration of tool use is with PC's, yet this averages only slightly more than three minutes at any one time. (p. 119)

Research indicates that when humans switch from single tasking to multitasking, the effectiveness of the brain is greatly reduced. People who are engaged in multitasking become more fatigued and exhibit both raised stress and adrenaline levels (Dzubak, 2008).

There are many knowledge-based tasks where workers need to stay focused on a single task and not be interrupted. Furthermore, multitasking is very inefficient and negatively impacts performance since time is needed to refocus on the initial activity. The need to constantly refocus requires knowledge workers to jump around like grasshoppers (Walesh, 2013). Bannister and Remenyi (2009) indicate that there is minimal research which provides a meaningful evaluation on the effect of multitasking on organizational productivity or on the financial impact of continuous task switching. Arguments about the impact of multitasking on productivity result in uncertainty regarding the effectiveness and desirability of multitasking. Its complexity makes it virtually impossible to conclude that the total impact of multitasking is effective or ineffective. Despite this, multitasking is increasing as a way of working for knowledge workers (Kim, 2007).

Silverman (2010), defending multitasking in a Harvard Business Review Blog, identifies several ways in which multitasking provides positive impacts on performance at work:

1. Multitasking helps us get and give critical information faster
2. It keeps others from being held up. . . .
3. It gives you something to turn to when you're stuck. . . .
4. The higher up you are in the organization, the more important multitasking is. (para. 4-5)

Without looking into the available support for his argument, there are clearly areas in which multitasking enhances performance, for the group and organization, certainly, if not for the individuals involved as well. In contrast, the comparison to the short-term vs. the long-term impact might provide a more 'sustainable' perspective.

INTERRUPTIONS

With the expansion of competitive pressures on most companies, jobs have been restructured as a method of reducing costs and adding to profits. The increasing use of technology both allows for and requires employees to respond more immediately to teammates, supervisors, customers and others via smartphones, tablets and laptops. These expectations and practices result in multiple interruptions during the day. Such interruptions require more multitasking in order to meet the demands of the position. Corragio (1990) defines: "an interruption is an externally-generated, randomly occurring, discrete event that breaks continuity of cognitive focus on the primary task" (p. 19). Such interruptions occur at random times and the individual is expected to respond to these externally-generated events immediately which in many cases require some form of action

(Murray & Kahn, 2014). When technology-driven interruptions occur, and the source may be internally or externally generated, the impact on performance can be negative. Spira and Feintuch (2005) found that “Interruptions now consume 28% of the knowledge worker’s day, based on surveys and interviews conducted by Basex over the past 18 months . . . This translates into 28 billion lost man-hours per annum to companies in the United States alone” (p. 4). And, they found, the cost of such interruptions has been estimated to be as much as \$588 billion (Spira & Feintuch, 2005). Interruptions resulting from multitasking restrict performance. Harmon.ie (2011) found that people check their smartphones 150 times per day, or every 6.5 minutes, which costs companies \$10,375 per employee per year, an amount even greater than the total of \$588 billion dollars estimated by Spira and Feintuch (2005). These interruptions not only take a person away from his/her primary task, they actually result in greater inefficiency. Walesh (2013) states that multitasking “is very inefficient because of the time, perhaps unnoticed, needed to resume a task” (p. 61).

A recent study suggests that even the briefest interruption could have an exponential effect on productivity. In this study a 4.4 second long interruption tripled the rate of errors (Altman, Trafton & Hambrick, 2014). This study also found that interruptions cause a significant loss of time for white collar (knowledge) workers while both reducing performance and increasing stress. However, some studies suggest that interruptions may help workers who need a break from monotonous tasks and allow them to start fresh after returning to their original tasks (Speier, Vessy & Valacich, 1999). These self-initiated interruptions, such as taking a walk or getting a drink of water, may be therapeutic and beneficial to knowledge workers (Corragio, 1990).

Some researchers have suggested that tools or approaches (Corragio, 1990; Lanaj, Johnson, & Barnes, 2014) may be used to control interruptions, but many employees are reluctant to use these methods since in many cases they do not know who may be interrupting them (Horvitz, Apacible, & Subramani, 2005). If such interruptions come from the employee’s supervisor, they are expected to take precedent over the tasks which he or she is doing at the time (Galluch, Grover, & Thatcher, 2015).

There is no worse time to be interrupted than at that moment. When people have nearly completed a task, they are overtaken by goal proximity. This increases irritation at being interrupted, and individuals have no spare time for it, which increases their unwillingness to interrupt present activities relative to potential willingness to be interrupted in the future (Jhang & Lynch, 2014). This, of course, contradicts Silverman (2010) indicating that finishing a task may also interfere with the ability of others to complete their tasks as time pressures affect them.

WORK/HOME INTERFERENCE

Technology, and in particular the smartphone, is dramatically increasing work/home interference (WHI). The boundary is becoming so blurred that people often spend time at home checking their emails, both social and work related, right up until bedtime. And the first thing many people do when they wake up in the morning is to once again check their smartphones for messages. Harmon.ie (2011) found in a survey conducted by uSamp that a majority of people under 40 years of age stay digitally connected in bed. Millennials are so attached to their electronic devices that

one survey noted how 51% would ignore any policy banning the use of personal devices from the workplace (Rebels with a smartphone, 2013).

Perlow (2012) conducted experiments with employees of the Boston Consulting Group (BCG) during the downturn of 2008. Starting with two groups, the experimental group was required to take time off while the control group continued with their 24/7 approach to consulting. After five months the work situation for both groups was measured. On all factors, including job satisfaction and client relationships, the experimental group scored significantly higher. Based on three more years of this research at BCG, Perlow recommends that teams require each individual to take one night off every week. This approach dictates that team members work more closely and provides for needed rest for individuals on a weekly basis. Also highly recommended is that everyone take a break from using their smartphone on a 24/7 basis. According to Perlow's findings, teams meet individual needs better and clients benefited in unexpected ways.

Thomas (2015), in a Harvard Business Review Blog, notes how several companies now prohibit sending emails after 11:00 pm because many team workers come to work too tired to be productive during the day after interacting via email late into the previous night. Lanaj, et al., (2014) studied the impact of smartphone use on sleep quantity, morning depletion and work engagement the next day: "We found that smartphone use for work at night disrupted sleep that night, which was associated with greater depletion the next morning and less engagement during the workday" (p. 18). These findings occurred in both of their studies, the first involving middle and upper level managers and the second including lower level employees. Since most smartphone owners keep them in their bedrooms at night, with over 40% having them within arms' reach of their beds, "your employees might feel pressure to instantly respond to emails or start working on tasks in their off hours. As much as it can be helpful, it might also cause your workers to work longer hours and carry more stress" (Huhman, 2011, p. 2). This lack of clarity regarding the impact of WHI on job performance and productivity is consistent throughout the literature on effects of smartphone usage by employees.

One of the main sources of stress comes from lack of control (Jhang & Lynch, 2014). If an employee is fatigued, he may be tired, depleted and sluggish (McNair, Lorr, & Doppelman, 1992; Watson & Clark, 1994). Employees need energy in order to complete everyday tasks as well as go beyond what is expected of them (Fritz, Fu Lam, & Spreitzer, 2011). Energized employees make the organization run more successfully and such employees are required for the high performance that organizations need to effectively compete in today's competitive environment (Dutton, 2003). Sonnentag, Binnewies, & Mojza, (2008) found that positive unwinding experiences during evenings result in high levels of energy during the following workday. Fritz and Sonnentag (2005) noted that relaxation, mastery experiences and psychological detachment from work can be very beneficial in recovery. Fritz, Sonnentag, Spector, and McInroe (2010) suggest that weekends are particularly important in this recovery process. Pfeffer (2010) suggests that many organizations do not understand the need for human sustainability.

Depletion described by Lanaj, et al., (2014) is consistent with Pfeffer's (2010) concern for human sustainability. Fritz, et al., (2011) focused on maintaining or recharging one's energy at work. They looked at strategies people used to replenish their energy. One of the most common is to use their smartphones to surf the internet while at work. Multitasking was another basic strategy. Neither of

these strategies was associated with higher levels of energy. Instead, they found that work-related strategies that “reflect notions of learning, relationships, and meaning at work” were positively related to vitality, while “micro-break strategies were mostly related to lower vitality and to higher levels of fatigue” (p. 34). Yun, Kettinger, and Lee (2012) studied smartphone usage at both work and home, what they called office-home smartphone (or OHS) and its impact on work-to-life conflict. This study was carried out in South Korea, and while there may be cultural differences that help explain some results, conclusions seem to be transferrable to other cultures including the United States. “The findings of this study show that an increased work overload due to OHS use results in greater work-to-life conflict, which creates job stress and user resistance to OHS; however, productivity gained due to OHS use can reduce work overload” (p. 121). These negative results occur when “OHS use is only concerned with expanding flexibility in terms of work hours and locations. Instead, when OHS use allows workers a means to ‘work smart’ and improve the quality of their work and productivity, work overload and work-to-life conflict will decrease” (p. 145).

According to Fritz, et al., (2011) there are many factors which contribute to depletion of human energy at work. First, long work hours prevent workers from having adequate time to unwind from work. Second, more employees are “attached” to work via smartphones, tablets or laptops. They are expected to respond to calls and emails outside of work. Third, during recessions or financial downturns, employees are threatened by job security and may be less likely to take vacations. They are also more likely to work on job related tasks at home, thereby being unable to unwind while off the job. Moreover, companies often eliminate those perks which might help to reenergize employees, such as free food or fitness facilities, during these downturns (Storseth, 2007). At such times worries about work security may negatively impact sleep leading to higher levels of fatigue during work hours (Sonntag, et al., 2008). Furthermore, with the advent of more dual-income families, employees may have a second shift at home involving childcare and housework (Hochschild, 1990).

Cyber loafing and electronic interruptions of knowledge workers in the United States take a phenomenal amount of time away from the job as Spira and Feintuch (2005) noted. For all of the work interference at home, there is certainly a large amount of social and personal activity taking place at work. And the general culture, particularly created by Millennials, who today comprise over one-third of the total workforce, supports this blurring of boundaries (Fry, 2015).

The effects of WHI are both positive and negative from the perspective of the work organization. Studies note, for example, how productivity is increased as a result of multitasking, particularly resulting from the use of technology. While multitasking may initially increase productivity, Bannister and Remenyi (2009) note that the relationship really follows an inverted “U” curve: “Productivity improved when workers moved from single tasking to multitasking. As the number of tasks increased, productivity levelled off and after a critical number of tasks was reached, productivity declined precipitously” (p.6). Cavazotte, Lemos, and Viladsen (2014) note how workers perceived that they had more autonomy and flexibility in getting work done, although in reality, electronic devices were adding constraints and lessening autonomy in completing tasks.

Some studies conclude that cyber loafing provides one of the more critical positive effects on WHI, reducing the stress by allowing for recovery. Previous studies note that “respite” breaks, i.e.,

socializing or relaxing, aided recovery and performance while breaks that included running errands or preparing for another activity did not improve recovery (Fritz, et al., 2011). They actually found that browsing the Internet (cyber loafing) was not related to improving energy at work.

Several studies use net income per employee as an appropriate metric to identify the impact of smartphone usage on performance on the job. Perhaps most people equate the amount of time spent on job-related activities with overall performance. Therefore, spending more time, either on the job itself or at home working on job tasks, is evidence that performance has improved. Most studies use impressionistic data regarding whether performance has been enhanced.

Choudhary (2014), on the other hand, actually measured the impact on the organization's bottom line. He describes the mixed effects of the blurred lines between work and home life. Increases in net income per employee were noted for the organization. This short term improvement came, however, at the expense of an extended workday for the workers. In addition, there were more health problems resulting from the added stress created by WHI. He also found there was an increased social isolation for employees resulting from the greater time spent on work activities.

These mixed effects help explain employee behaviors on the job that have a negative impact on the work organization. For example, cyber loafing and multiple work distractions may be necessary for the employee to overcome the sense of social isolation resulting from the perceived lack of opportunity to interact with others while at home, since employees feel they are spending additional time doing work-related activities. The acknowledgement that their workday is extended may also support the belief that cyber loafing is acceptable in the workplace. And the Millennials' belief that multitasking has no negative impact on performance, supported by our culture that holds multitasking actually increases performance and, at the very least, certainly does not decrease performance, suggests that cyber loafing is an acceptable activity at work.

Tarafdar, D'Arcy, Turel, and Gupta (2015) found employees spent over three and one-half hours per week responding to work emails at home (23 minutes on the average day), commuting (12 minutes) and on weekends (42 minutes), while on vacation days, they spent 43 minutes. However, many interruptions, regardless of who may be interrupting the employee, can produce stress.

CONCLUSION

Bannister and Remenyi (2009) conclude regarding the impact of multitasking on overall performance: "In plain English, it takes more effort as well as more time to do three tasks simultaneously than it does to do the same three tasks sequentially" (p. 4). This is the direct response to our class President mentioned at the beginning of this paper. Multitasking is a widely accepted, "natural" practice among Millennials, and has worked its way into the workplace for many people. Likewise, smartphones have become an additional appendage to many/most people today, intruding into work and home lives with equal opportunity. This "electronic connectivity," a phrase agreed to by participants at the 2015 conference of the International Association of Business Disciplines in Orlando Florida, has a complex relationship with the issue of Work/Home Interference. Productivity often increases, and it is usually at the expense of increased stress and less time available for recovery and stress reduction.

Smartphones provide opportunities to blur the work-home boundary, and result in greater occasions for multitasking. When one or more tasks have been completed so often by an individual that they are essentially done by rote, multitasking becomes very efficient and effective as these tasks can be handled by the subconscious (Bannister & Remenyi, 2009). When attention has to be paid to each of multiple tasks, however, research suggests that the brain can only handle one task at a time in its conscious state and, therefore, is only capable of dealing with such tasks sequentially (Bannister & Remenyi, 2009; Dzubak, 2008). And Silverman (2010) provides many positives of multitasking, taking this one step further when he asks:

Are we comfortable pretending we really can live our lives not multitasking? Or are we like my father and others who say smoking is bad but can be found on the front porch in the dead of night, a small red glow at their lips, puffing away while texting their BFFs and playing Words with Friends? (para. 8)

This same complexity is seen when trying to identify the real impact of Work/Home Interference. Much of the information suggests a positive impact on performance on the job, while the cost of this process is added stress for the individual and less time available for recovery. Choudhary (2014) states: “It is worthwhile to note that the increases in NI/E [Net Income per Employee] may be at the expense of extended workday, increasing health problems, and social isolation for the smartphone using employees” (p. 15)—the real tradeoff on this whole issue.

People are now part of a community of “hashtag.” No longer do we have communities of interest, i.e., communities based on job related skills or interests or concerns rather than groupings based on social media. And, this is more isolating than are face to face interactions. Note also that this suggests practice in and understanding of the politics of situations is being diminished, further reducing the skill development of people as they prepare for a career in upper management.

IMPLICATIONS FOR FUTURE RESEARCH

Millennials have become the major part of the workforce and have brought their use and love of technology to the workplace. They live, work and sleep with their cellphones so they can text at any time of the day or night whether it be for a work request or a response to someone, according to a recent Forbes article (Solomon, 2014). However, the overall impact of smartphones, like the impact of multitasking, is not only mixed, it is often contradictory. While smartphone usage increases tensions found in Work/Home Interference, which is tied to reduced performance and health over time, it also allows for recovery while on the job, enhancing human sustainability. Given this contradictory mix of results, future research needs to consider the performance levels of Millennials with smartphones relative to other generations’ performance. There also seems to be a direct relationship between multitasking and the resultant interruptions with depletion, while an additional direct relationship exists between relaxing breaks and other recovery methods with human sustainability. These re-energizing processes enhance organizations’ opportunities for success and need to be studied more fully in future research. It also suggests that we need to recognize that we may be in a new situation where the workforce might be changing the workplace rather than what historically has happened, namely, the workers respond to and alter their behavior to fit the requirements of the job.

It takes experience with a new technology before we learn what questions to ask regarding its true impact. What impact does the added stress from WHI have on long term performance on the job? Given the increasing availability and use of smartphones, how can they be integrated into the job to improve performance without having a detrimental impact on overall quality of life? What rules need to be established by the company and the corporate culture to limit the negative effects of smartphone use on WHI? Thomas (2015) states: “Be clear about expectations for email and other communications, and set up policies to support a healthy culture that recognizes and values single-tasking, focus, and downtime” (para. 11).

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MEASURING THE MAJOR LEAGUE BASEBALL TEAM'S RELATIVE EFFICIENCY USING DATA ENVELOPMENT ANALYSIS MODELS FOR 2013 SEASON

C. Christopher Lee, Central Connecticut State University
christopher.lee@ccsu.edu

Raymond Schuh, Lake Superior State University
rschuh@lssu.edu

Jinhee Yoo, Gannon University
yoo002@gannon.edu

ABSTRACT

We developed Bilateral Data Envelopment Analysis (DEA) models to compute the relative efficiency scores of Major League Baseball (MLB) teams. DEA models compared the teams and took inputs and outputs into consideration. As inputs, we proposed total salary, population of host city, and total runs against (opponent's points). Outputs included wins, popularity (via Facebook likes), and team revenue. The data were collected from the 2013 season. 30 MLB teams were categorized into two groups. Group 1 included 15 high salary teams, while Group 2 included 15 low salary teams. Results show that low salary teams have significantly higher relative efficiency scores than high salary teams, on average.

Keywords: Data envelopment analysis, relative efficiency, Major League Baseball, Facebook likes

INTRODUCTION

This study will focus on Major League Baseball (MLB) teams and their relative efficiency. The Data Envelopment Analysis (DEA) models will compare player salaries, the population of the host city and total runs against the team's ability to win, generate revenue, and gain fans. Following this comparison, the study will show the correlation between payroll size and team success, with team success being measured by relative efficiency. Many studies have focused on salaries verses wins in the past, but, considering the other parameters, the DEA analysis seems to be lacking. In fact, there is currently no available DEA model for the 2013 season from which the data for this study will be gathered.

This study aims to show the relationship between payroll size and the relative efficiency of MLB teams. Since MLB has no salary cap, player salaries have soared to enormous levels. This results in a huge gap between total salaries for the top teams and total salaries for those at the bottom. There is almost a \$207 million difference between the richest team, the New York Yankees, and the poorest, the Houston Astros. For example, Alex Rodriguez signed the 10 year \$275 million contract with New York Yankees. This should, if you assume equal rates of pay for wins, mean that the New York Yankees win ten times as many games, but results of the season

show that this does not occur (Sly, 2012). The results of this DEA analysis will show if team owners benefit at all from paying these huge sums for talent.

The study employs DEA models for measuring relative efficiency of each Major League Baseball team's salary, population of host city, and runs against to wins, revenue, and popularity in the 2013 season. Since a DEA model measures relative efficiency among similar organizations or objects, it fit the goals of this study more than any other model. In its relative efficiency calculations, individual teams will be considered decision-making units. For the inputs and outputs the study will use data from statistics, Facebook.com likes, and censuses.

Before expounding on the research of this study, we will provide a list of reference material used in this paper along with a brief synopsis of the articles. These articles provided background on prior studies and information on what other researchers consider good variables for measuring success in the MLB. Using DEA with each team being a decision-making unit (DMU), we will compare their specific output (wins, popularity, revenue) to their input, (payroll, population, runs against). After performing the DEA, we will show the relative efficiency of the MLB teams compared to one another. Then, we will discuss the results and analyze. Finally, we will test which teams perform most efficiently.

LITERATURE REVIEW

Lewis and Sexton (2004) developed a DEA model that used reverse inputs and outputs as opposed to the standard DEA model. The study correlated total bases reached to wins, using the total bases as the input to the output of wins. Based on the 1999 season, results showed efficient teams to be the majority of the divisional winners in this study. The study also directly attributed the lack of a high salary to a team being unsuccessful.

Einolf (2004) looked into the efficiency of MLB and NFL franchises using salary as an input and wins as an output. The model compared the two leagues instead of the teams within the leagues. Using this model, the study found that MLB tended to be less efficient mostly due to large market teams having no force to stop excess expenditures for wins. With MLB leadership considering winning as the most important factor, the financial setup of the league contributed to inefficiency. Conversely, while winning is important in the NFL, teams have found a way to accomplish this while remaining efficient through the use of salary caps.

Chen and Johnson (2010) analyzed the performance of pitchers in MLB. Their paper aimed to uncover the strategy and historical usage of pitchers and their effectiveness. The paper found that conventional baseball knowledge was generally correct. It also has found that the important factors in pitching have changed as baseball has evolved. This would indicate that, while one factor may be important today in winning, that same factor over time may become more or less important.

Hadley and Ruggiero (2006) considered the use of DEA model in order to determine the value of MLB players in the arbitration process. Through their study, they aimed to learn the efficiency of arbitration with respect to the two arbitrating entities, MLB and the union. The unions wanted more money for equal work while the MLB owners cited players who made less and who were more efficient. The study found that arbitration tended to gain a player a value closer to the "market

value” in free agency, increasing the total cost of players while decreasing the overall efficiency of teams.

Garcia-Sanchez (2007) applied a three-stage DEA model to the Spanish Professional Football League. Teams were separated into three components: operating efficiency, athletic effectiveness and social effectiveness. The paper indicated that teams that were most operationally effective and athletically effective were the most effective teams. The study found social effectiveness to be related to the level of play itself. Results from year to year varied, but steadily improving was found to be the most efficient strategy.

Zhang, Li, Meng, and Liu (2009) used the DEA model to discover the relationship between underlying preferences and the performance of nations at the Olympics. The study proposed new models with Lexicographic preferences to measure the performances at the Olympics. The DEA model indicated a strong desire at even a non-business level for sports to be efficient.

Glenn, Schwandt, and Triantis (2006) measured the efficiency of collegiate athletic departments. Performance measures in this environment presented difficulties due to the dual system for success. In this combined academic and athletic sphere, efficiency requires both on the field and off the field success. The study then provides commentary as to which organizations perform most efficiently and then suggests areas for improving underperforming programs. The information gathered is mainly policy to performance related.

While mainly representing the world of politics, Sexton and Lewis (2012) proposed that inefficiency tended to increase in the face of head-to-head competition between two entities. Those favored to win (incumbents) were more likely to overspend in terms of efficiency in an attempt to guarantee votes. This behavior has become worse over time and the inefficiency has been shown to relate directly to losses.

Tiedemann, Francksen, and Latacz-Lohmann (2011) used the DEA model to measure the efficiency between performance, positions and the rankings of teams at the end of the year in the German Football League. It used a “metafootballer” technique to optimize player position in order to increase efficiency, which was to say that players were not always most efficient in their designated position regardless of their prior beliefs.

Cameron (2012a) compared wins to salary. This comparison shows quite a low correlation of just 0.18. As the author pointed out, this was an anomaly year, as bottom-tier teams seemed to overperform while many top tier-teams folded. This made the correlation the lowest it has been since the mid-eighties.

Garcia (2012) compared salary to wins using a normalized standard to compare team performance. With this, he showed that the ratio of salary to wins was not one to one, even though the top teams outperformed their lower tier counterparts. For example, the Oakland Athletics paid 44% less than the league average but still managed 94 wins. This was 60% above the average for salary to wins compared to the normalized average.

Recent studies have investigated the efficiency of MLB teams by modeling and assessing the impact of salary upon wins (Bertin, 2012; Fry, 2012; Sly, 2012). Bertin (2012) makes a significant

addition by including the effects of injuries and minor league call-ups upon the roster and resultant performance of the teams under study.

Pheifer (2013) showed that about half of all teams in MLB paid recommended salary amounts. Additionally, some teams were considered under-achievers simply because of the division in which it played. Due to the division being stronger and the fact that these teams must play a large number of games against much better teams, this article showed that these teams were not performing to the ideal standard.

Cameron (2012b) discussed the unfairness of the current collective bargaining agreement for rookies up to 3rd year pros. These players made a relatively low salary as compared to their outputs. Cheap quality players existed in the star-driven, no-capped league.

Hasan (2008) tracked the salary-to-win performance from 1992 through 2007 to show trends of salary and wins. Hasan then relates the performance on the field directly to the amount of money spent by the organizations on salaries.

Schwartz and Zarrow (2009) talked about the lack of a salary cap in MLB since all other professional team sports have salary caps. They found that MLB is unique in that not only does it not have a cap, but players have the ability to be free agents. Players who are not chosen by a team or who are released from their contract can entertain offers from any teams and accept at their own will. This practice has resulted in top players, or Type A free agents, getting extremely lucrative offers, often into the tens of millions of dollars per year.

Many have researched the efficiency of baseball teams regarding the payroll to win ratio; however, most have only taken these two factors into consideration. Finding high correlations between payroll and team success seems rather intuitive, yet some teams break from this. While all teams would like to be able to get more value for their money spent, some contravene that equation. Teams like the New York Yankees spend money on huge player contracts, yet one may argue that the results of these contracts give them overwhelming advantage on a season-to-season basis. Teams like the Oakland Athletics have found a way to have a successful season despite having one of the lowest payrolls in the league. Many studies have included cost-per-win figures, a reasonable tool for estimating a team's efficiency through a simple ratio of salary to wins. This figure only takes into account two factors in its calculation however. Through this study, we hope to show how many other factors determine a team's overall success or failure. In our comparison, we also considered total bases reached. This statistic does not mesh well with other input statistics, though, due to its odd nature of being inverse from a standard input. (Inputs usually work better when lower in organizations.

Many have studied baseball teams' efficiencies with only the variables including salary and wins because of all professional sports leagues MLB alone has no salary cap. As such, outsiders often consider teams to be "out of the running" or "not trying to compete" if they have low payrolls. In this kind of system, players can demand outrageous salaries. If team owners deem the players worth it, the players will get paid. MLB also allows free agency to players not under contract. If players satisfy their contractual obligations to a team, regardless of whether the team wishes to renew or resign those players to a new contract, those players have the freedom to test their value

on the free agent market. This can create a bidding war to secure the services of top tier players, or in some cases, the best available player for a desired position. These bidding wars may be part of the reason behind the inflated salaries of the best players over the past several years. Additionally, contractual arbitration, a practice allowed in baseball, contributes to the inflation since players may bring contracts to which they are currently obligated and can request changes that will bring pay or benefits more in line with the level of play. Due to the lack of other variables, other studies were used to find additional common rating factors for success in various sporting leagues. These studies also compared salary to wins, and factors such as social effectiveness, positional performance and available resources also bore consideration.

METHODOLOGY

This paper uses DEA models to measure the relative efficiencies of MLB teams using inputs: total payroll, runs against, the metro area population, and outputs: team revenue, total wins, team loyalty as measured by Facebook.com likes. DEA model is a tool for measuring relative efficiency among similar organizations or objects. These organizations or objects that will be measured are known as decision-making units or DMUs. Since DEA identifies relative efficiency, it works well for benchmarking and comparisons.

To explore the mathematical property of DEA, let E_θ be a relative efficiency score for the base DMU θ then,

$$\text{Maximize } E_\theta = \frac{\left\{ \sum_{r=1}^R u_{r0} y_{r0} \right\}}{\left\{ \sum_{i=1}^I v_{i0} x_{i0} \right\}} \quad (1)$$

subject to

$$\frac{\left\{ \sum_{r=1}^R u_{r0} y_{rk} \right\}}{\left\{ \sum_{i=1}^I v_{i0} x_{ik} \right\}} \leq 1 \text{ for all } k \quad (2)$$

$$u_{r0}, v_{i0} \geq \delta \text{ for all } r, i, \quad (3)$$

where

- y_{rk} : the observed quantity of output r generated by unit $k = 1, 2, \dots, N$,
- x_{ik} : the observed quantity of input i consumed by unit $k = 1, 2, \dots, N$,
- u_{r0} : the weight to be computed given to output r by the base unit θ ,
- v_{i0} : the weight to be computed given to input i by the base unit θ ,
- δ : a very small positive number.

Assuming a linear relationship between variables, it would be easiest to convert the fractional programming model to a common linear programming (LP) model. Using a piecewise LP model one can use a non-proportional returns-to-scale like increasing, decreasing or variable. Depending on the returns-to-scale selected and/or various modeling approaches, different types of DEA models are available.

This study uses a Charnes-Cooper-Rhodes (CCR) model, a Banker, Charnes, and Cooper (BCC) (1984) model, and a slack-based measure of efficiency (SBM) to determine operational efficiencies. First, we measure the relative efficiency of DMUs using the CCR and BCC models respectively. Second, we will apply SBM to the data in order to evaluate the efficiency of variables with non-radial properties. Finally, we try to compare the results of the three models to determine what level of salary has the higher value of relative efficiency, high or low salaried teams.

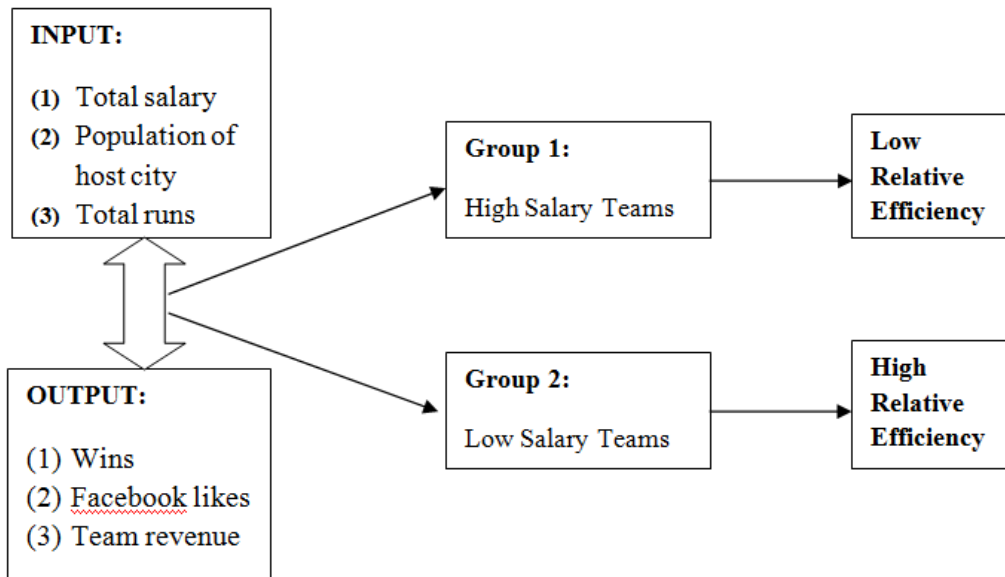
The DMU's for this study are the thirty MLB teams. These teams are all located in North America, with the vast majority in The United States of America. The teams are split between two Leagues, the American League (AL) and the National League (NL), which have similar rules and regulations with the exception that AL uses the designated hitter instead of having the pitcher bat. When interleague play does occur, the home leagues rules are used. All teams compete in order to make the playoffs. From there, teams compete in the Divisional Series, with the winners rising in the competition to play in an interleague World Series. As previously mentioned, MLB has no salary cap unlike most North American professional sports. The teams range in salary from a payroll of \$20 million to \$220 million.

This research selects three input variables such as total salary, population of host city, and total runs against. DEA models employ three output variables such as wins, popularity (via Facebook likes), and team revenue. No other research was found involving MLB that used runs against or metro population as inputs, or used revenue or loyalty/popularity as outputs. These factors were included in other studies involving other sports such as Spanish football teams (Garcia-Sanchez, 2007).

We propose Facebook likes to serve as a proxy to measure a MLB team's popularity (Facebook Like Information, 2013). Some research indicates the noisiness of the Facebook like signal (Shruti, Roy, & Zeng, 2014). There have been numerous studies on Facebook likes (Dijck & Poell, 2013; Kosinski, Stillwell, & Graepel, 2013). No studies have tested data from the 2013 MLB season, using the DEA models with the six variables proposed by this paper. Therefore, we propose the following research hypothesize. Figure 1 presents a research framework for this paper.

Research Hypothesis: Low salary teams tend to have higher relative efficiency than high salary teams, given that total salary, population of host city, total runs against as three inputs, and wins, Facebook likes, team revenue as three inputs, are taken into consideration.

Figure 1. Research Framework



RESULTS

The data was collected from MLB teams and their respective statistics and total salaries (MLB Team Stats, 2013; MLB team values: the business..., 2013). This included the league’s thirty teams from all over the United States of America and one team from Toronto, Ontario, Canada. The numbers for the Canadian team, namely the salary and revenue were given in US Dollars to provide a direct comparison between teams. Using total team salary allowed a fair comparison of the relative efficiency of each team, while runs against allowed for an unbiased comparison of each team’s proficiency at the game. As the old adage goes, “offense wins games, defense wins championships.” Runs against was used to show the team’s defensive ability, with a lower number indicating a better defensive team that most likely resulted from a mix of pitching and fielding capability.

ESPN’s website was consulted to retrieve statistics on team performance. All information gathered pertaining to team revenues and salary was found at Forbes website under “The Business of Baseball.” The United States government census website directly provided information about the population of the host cities (Population by City, 2012), except for the population of Toronto, Ontario. Information about Toronto came from a “backgrounder” of the city that used data from the Canadian census (2011 Census: Age and Sex Counts; Population of Toronto, 2013). Table 1 shows the raw data collected from 2013 MLB season.

Table 1. Sample Data from MLB 2013 Season

Team Name	Input Variables			Output Variables		
	Total Salary (in millions)	Total Runs Against	Population of Host City (in thousands)	Facebook Likes (in thousands)	Wins	Revenue (in millions)
New York Yankees	229	671	8337	6530	85	471
Los Angeles Dodgers	217	582	3857	1650	92	245
Philadelphia Phillies	165	749	1547	1345	73	279
Boston Red Sox	151	656	636	4102	97	336
Detroit Tigers	148	624	701	1363	93	238
San Francisco Giants	140	691	826	1820	76	262
Los Angeles Angels	128	737	3857	623	78	239
Chicago White Sox	119	723	2715	1072	63	216
Toronto Blue Jays	118	756	2615	563	74	203
St. Louis Cardinals	115	596	318	1566	97	239
Texas Rangers	114	636	376	1603	91	239
Washington Nationals	114	626	632	259	86	225
Cincinnati Reds	107	589	297	741	90	202
Chicago Cubs	104	689	2715	1833	66	274
Baltimore Orioles	91	709	621	542	85	206
Atlanta Braves	90	548	444	1436	96	225
Arizona Diamondbacks	89	695	1489	354	81	195
Milwaukee Brewers	83	687	599	672	74	201
Kansas City Royals	81	601	147	368	86	169
Pittsburgh Pirates	80	577	306	528	94	178
Cleveland Indians	78	662	391	626	92	186
Minnesota Twins	76	788	393	838	66	214
New York Mets	73	684	8337	682	74	232
Seattle Mariners	72	754	635	591	71	215
Colorado Rockies	72	760	634	560	74	199
San Diego Padres	67	700	1338	440	76	189
Oakland Athletics	61	625	401	445	96	173
Tampa Bay Rays	58	646	348	505	92	167
Miami Marlins	36	646	414	335	62	195
Houston Astros	22	848	2160	507	51	196

This study used CCR, BCC and SBM models to determine operational efficiencies. The models were first run with an emphasis on inputs and then again with an emphasis on outputs. It used DEA models because these models can determine relative efficiency without bias towards a particular variable, assigning weight of the variables from a mathematical basis. Complete results of the models appear in the charts at the end of the study. Bilateral DEA models were adopted because

this research focuses on the two groups: high salary team group (Group 1) and low salary team group (Group 2). Table 2 reports the relative efficiency scores computed by various Bilateral DEA models.

Table 2. Relative Efficiency Scores by Four DEA Models

ID	MLB Team	Group	Bi-CCR-I	Bi-BCC-I	Bi-SBM-C	Bi-SBM-V
1	New York Yankees	1	3.7138	1.0000	1.5078	1.7672
2	Los Angeles Dodgers	1	1.0819	1.0000	1.0263	1.0758
3	Philadelphia Phillies	1	0.9072	1.0000	0.4904	1.0678
4	Boston Red Sox	1	2.3863	1.0000	1.2991	1.4930
5	Detroit Tigers	1	0.9289	1.0000	0.6993	1.0182
6	San Francisco Giants	1	1.0051	1.0000	1.5934	1.1330
7	Los Angeles Angels	1	0.7898	1.0000	0.3488	1.0155
8	Chicago White Sox	1	0.7276	0.7580	0.4296	0.4296
9	Toronto Blue Jays	1	0.6673	0.7332	0.3344	0.3344
10	St. Louis Cardinals	1	1.5226	1.0000	1.1698	1.1925
11	Texas Rangers	1	1.3182	1.0000	1.1019	1.1211
12	Washington Nationals	1	0.8754	0.8754	0.3090	0.3090
13	Cincinnati Reds	1	1.0069	1.0842	1.0023	1.0078
14	Chicago Cubs	1	1.0966	1.0000	1.0313	1.1518
15	Baltimore Orioles	1	0.7900	0.8137	0.5085	0.5085
16	Atlanta Braves	2	1.2497	1.2556	1.0926	1.1168
17	Arizona Diamondbacks	2	0.9744	1.0225	0.5608	1.0142
18	Milwaukee Brewers	2	1.0647	1.1203	1.0210	1.0477
19	Kansas City Royals	2	1.9179	2.0204	1.2627	1.4471
20	Pittsburgh Pirates	2	1.3550	1.3625	1.1006	1.1355
21	Cleveland Indians	2	1.3199	1.3462	1.0982	1.1181
22	Minnesota Twins	2	1.2563	1.3011	1.0789	1.1268
23	New York Mets	2	1.2961	1.3147	1.0987	1.1133
24	Seattle Mariners	2	1.2943	1.2969	1.0900	1.1036
25	Colorado Rockies	2	1.1999	1.2664	1.0668	1.0891
26	San Diego Padres	2	1.2354	1.3582	1.0785	1.1237
27	Oakland Athletics	2	1.6950	1.8525	1.2047	1.2579
28	Tampa Bay Rays	2	1.7323	1.8103	1.2160	1.2801
29	Miami Marlins	2	2.2975	2.5278	1.3975	1.6039
30	Houston Astros	2	3.4439	4.1364	1.7286	2.0454

A Mann-Whitney model was then used to test differences in relative efficiency scores between the high and low salaried team groups. This paper used the non-parametric Mann-Whitney test instead of a parametric t-test method due to a small sample size and insufficient normality of the relative efficiency scores. The use of “high” salary team refers to the fifteen highest-paying teams and that of “low” salary teams to the fifteen lowest-paying teams. The group statistics reported that in every

single DEA model the lower salary teams had a higher mean relative efficiency score. Results indicated that using a one-tailed test in every case yielded a p-value below .01. With two models (Bi-CCR-I, Bi-BCC-I), results indicated a p-value below .001 as shown in Table 3.

Table 3. Mann-Whitney Test Results

	Bi-CCR-I	Bi-BCC-I	Bi-SBM-C	Bi-SBM-V
Overall Mean	1.4050	1.3085	6.2565	1.1083
Group 1 (high salary teams) Mean	1.2545	0.9510	11.3734	0.9750
Group 2 (low salary teams) Mean	1.5555	1.6661	1.1397	1.2416
Group 1 Rank Sum	292	344	277	276
Group 2 Rank Sum	173	121	188	189
Mann-Whitney Test Statistic	2.4679***	4.6248***	1.8458**	1.8043**

p<.01 *p<.001

Table 4 shows the total rank of each MLB team. The total rank added up four ranks from the four relative efficiency scores. As shown earlier, Group 1 indicates the high salary teams, while Group 2 indicates the low salary teams. Based on the relative efficiency scores by DEA models, four ranks were generated. Rank Total sums up the four ranks. The overall relative efficiency rank was determined by rank total. The least rank total means the highest overall relative efficiency rank. More teams in Group 2 report the lower rank total, which means the more efficient. In overall, Houston Astros is ranked the most efficient among MLB teams in 2013 season. Top five most efficient teams are Houston Astros, Miami Marlins, Kansas City Royals, New York Yankees and Tampa Bay Rays. Table 4 reveals all the ranks.

Table 4. Overall Relative Efficiency Rank by Rank Totals of Four DEA Models

MLB Team	Group	Bi, CCR-I, Rank	Bi, BCC-I, Rank	Bi, SBM-C, Rank	Bi, SBM-V, Rank	Rank Total	Overall Relative Efficiency Rank
Houston Astros	2	2	1	2	1	6	1
Miami Marlins	2	4	2	4	3	13	2
Kansas City Royals	2	5	3	6	5	19	3
New York Yankees	1	1	17	3	2	23	4
Tampa Bay Rays	2	6	5	7	6	24	5
Oakland Athletics	2	7	4	8	7	26	6
Boston Red Sox	1	3	17	5	4	29	7
Pittsburgh Pirates	2	9	6	11	10	36	8
St. Louis Cardinals	1	8	17	9	8	42	9
Cleveland Indians	2	10	8	13	15	46	10
New York Mets	2	12	9	12	17	50	11
San Francisco Giants	1	22	17	1	11	51	12
Texas Rangers	1	11	17	10	14	52	13
Minnesota Twins	2	14	10	16	12	52	14
San Diego Padres	2	16	7	17	13	53	15
Seattle Mariners	2	13	11	15	18	57	16
Atlanta Braves	2	15	13	14	16	58	17
Chicago Cubs	1	18	17	19	9	63	18
Colorado Rockies	2	17	12	18	19	66	19
Los Angeles Dodgers	1	19	17	20	20	76	20
Milwaukee Brewers	2	20	14	21	22	77	21
Cincinnati Reds	1	21	15	22	26	84	22
Detroit Tigers	1	24	17	23	23	87	23
Arizona Diamondbacks	2	23	16	24	25	88	24
Philadelphia Phillies	1	25	17	26	21	89	25
Los Angeles Angels	1	28	17	28	24	97	26
Baltimore Orioles	1	27	28	25	27	107	27
Chicago White Sox	1	29	29	27	28	113	28
Washington Nationals	1	26	27	30	30	113	29
Toronto Blue Jays	1	30	30	29	29	118	30

DISCUSSION

The results of this study tended to run contrary to the majority of other studies reviewed. Other studies had determined that higher-paying teams tended to outperform lower-paying teams (Cameron, 2012a; Cameron, 2012b; Garcia, 2012; Hasan, 2008; Lewis & Sexton, 2004;). While this may have been true when only using wins as an output, when considering other equally

important factors to management such as popularity and revenue generated, results show that more efficient teams do not spend the most money. When the emphasis is placed only on wins in head-to-head competition, a definite trend of overspending when two opposing forces compete appears (Sexton & Lewis, 2012). When the concepts from that paper are applied to the MLB, one can see that, since the teams tend to constantly engage in head-to-head competition the need to compete can result in inefficiency in areas such as player salary.

The major managerial implication of this research is that higher spending does not lead to a higher level of relative efficiency when one considers combined inputs such as salary, runs against, and the population of the host city and compares them to outputs such as wins, revenue, and popularity. This suggests that MLB owners and general managers should ignore the idea that only high-spending teams can find success. The results of this paper show statistical evidence that teams do not have to spend excessive amounts of money in order to find organizational success. One can see this by just looking at the relative efficiency scores. Some MLB teams may view winning as the only goal of the organization, but that view, if allowed to be the only desired output, has the potential to lead to a level of organizational inefficiency.

CONCLUSION

This study sought to find the relative efficiency scores of the thirty MLB teams from the inputs of player salary, population of the host city, and runs against and the outputs of revenue, popularity, and wins. Using the DEA model, results showed the relative efficiency score of MLB teams using three different DEA model variants: Bilateral CCR-I, BCC-I, SBM-C, and SBM-V models. Each model was tested twice with the emphasis being shifted between inputs and outputs.

Results indicate that when measured using the inputs and outputs of this study each MLB team paying a lower salary to its players will increase relative efficiency beyond that of higher-paying teams. The implications of this have the most importance to the management and owners of MLB teams. This questions the idea that teams have to spend a lot of money on players in order to be successful. A team can obtain relative efficiency by keeping the payroll low while making smarter player and location decisions. While the measure of success may vary from team to team, this measurement shows that spending less money tends to indicate a higher level of relative efficiency of the organization.

This study is limited by the relatively low amount of information officially available from MLB teams. While one can easily obtain payroll information for comparison since it is reported to MLB with similar rules, information on front-office spending is not so easily found and is not as comparable due to different ways of computing such costs. This information could help future studies by providing additional insight about the situation as an input in a DEA model for MLB teams.

Though MLB does not have a salary cap, MLP does implement a luxury tax that is intended to curb talent disparities caused by high value contracts. Further research may explore effects of the luxury tax. The American League's designated hitter rule is assumed to generate more scores than the National League. Therefore, DEA modeling within each league is suggested to avoid such score bias. Future studies could also compare league efficiency as well as league efficiency with

inputs and outputs more customized to the desire of that division or league. For example, player performance in outdoor stadiums or indoor stadiums may be more appropriate when comparing divisional efficiency based on the type of stadium in which specific teams most often played. Also, an analysis of multi-year data per each team may generate interesting pattern and trend. With the information available at this time, this paper has made a contribution to the sports management and business analytics literature with empirical evidence.

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WORLD’S “MOST EVIL CORPORATION”? EVALUATING MONSANTO’S PUBLIC RELATIONS IN RESPONSE TO INTENSE NEGATIVE MEDIA COVERAGE

Ali M. Kanso, The University of Texas at San Antonio
Ali.Kanso@utsa.edu

Alyssa Gonzales, Field Representative, Google Fiber
alyssagonz09@gmail.com

ABSTRACT

Monsanto, a sustainable agriculture company, has become widely known for its dark history of polluting the environment, mislabeling products, and suing customers. Activists and humanitarians have protested the company’s practices, and customers have boycotted its products. As a result, intense negative media publicity has portrayed Monsanto as being a greedy, unethical, and arrogant monopoly. The company ignored, in the past, various kinds of criticism but now is forced to confront its 2011 title as the world’s “most evil corporation.” This study assesses Monsanto’s public relations efforts in the last four years to repair its badly-damaged reputation. The authors note that important publics have been ignored and objectives have not been well articulated in the process of rebuilding the company’s reputation. They also propose a long-term plan to minimize deeply-rooted beliefs against Monsanto. The plan sets up specific and measurable objectives and suggests research methods and tools to evaluate the outcome.

Keywords: Corporate reputation, negative publicity, pollution, and agriculture

INTRODUCTION

Monsanto's company reputation has been severely damaged for its lack of genuine public relations efforts, especially in the last four years. Gathered from available data, it is evident that the agriculture company has recently confronted its public image issue and begun to: (1) implement a reactive approach through communicating with certain publics, (2) increase informational events, and (3) recognize the public opinion. However, consistent dedication to genuine public relations efforts is seriously needed to help salvage Monsanto’s reputation.

SITUATION ANALYSIS

Monsanto, the world’s largest seed company, has become widely known for polluting the environment, mislabeling products, and suing customers. The company has received intense negative media criticism, which damaged its reputation. Monsanto was established in 1901 with its first product being the artificial sweetener saccharin. Almost two decades later, it expanded into the production of basic industrial chemicals. During the Second World War, Monsanto contributed to research for the Manhattan Project which later led to the construction of the atomic bomb. In the 1940s, Monsanto became a leading manufacturer of synthetic fibers and plastics. The company

continued to operate a nuclear facility for the U.S. government until the late 1980s and years later it emerged as one of the top 10 U.S. chemical companies (Monsanto, A history, 2009).

Problem Statement

Since the exposure of the company's alleged unethical customs, Monsanto has developed a poor reputation as being a greedy, unethical, and arrogant monopoly. The firm has lost the trust, business, and support of many people. In 2009, Monsanto profited 2 billion dollars, but a year later its profits decreased to 1 billion dollars after humanitarian activists exposed some of the allegedly unethical practices of the biotech company (PAN North America, 2010). This biotech giant company, which is responsible for genetically modifying much of the nation's and world's crops, reported a 34% fall in earnings in the fourth quarter of 2014 (Barrett, 2015). Activists and humanitarians have constantly protested to diminish the use of Monsanto products, customers have declined in number, and lawsuits have increased. The company, which ignored criticisms in the past, is forced now to confront its 2011 title as the world's "most evil corporation" (Sheets, 2013).

History and Company Background

Monsanto is headquartered in St. Louis, Missouri and has multiple locations in various regions, including Central America, South America, Europe, the Middle East, Asia, and Africa (From the Inside Out..., 2014). The company markets its products to farmers around the world in general, and in America and Europe in particular. Following its involvement in the Second World War, Monsanto diverted to the use of chemical pesticides in agriculture. The company's major agrochemical products include the herbicides 2,4, S-T, DDT, Lasso and Agent Orange. The latter was widely used by the United States government during the Vietnam War but became later highly carcinogenic. Monsanto was a key defendant in a lawsuit filed by Vietnam War veterans who faced incapacitating symptoms ascribed to Agent Orange exposure. Monsanto memos revealed that the company was aware of the dioxin contamination included in Agent Orange that was sold to the U.S. government for use in Vietnam (Monsanto: A history, 2009).

When Agent Orange was banned in the United States, Monsanto created in 1976 the weed killer "Roundup" to replace its widely criticized herbicide, Lasso. Roundup assisted in making Monsanto the world's largest producer of herbicides. Although the success of Roundup generated business for Monsanto, the company was still recognized as a major producer of dioxins and polychlorinated biphenyls (PCBs) that caused risks to the environment and human health. Lawsuits and environmental cleanup costs began to flood Monsanto and posed a serious threat of bankruptcy for the agriculture company (Tokar, 2011).

In 1998 Monsanto agreed to pay a penalty of \$225,000 for mislabeling its Roundup herbicide products. The company violated the worker protection standards of the Federal Insecticide, Fungicide & Rodenticide Act (FIFRA) for distributing mislabeled Roundup herbicide containers in at least 75 instances. The Roundup-producing company mismarked the label to incorrectly state a restricted entry interval of four hours rather than the correct directions to "restrict entry into a treated area for 12 hours (Monsanto pays penalty..., 1998).

After the success of its products in the United States, Monsanto anticipated a flourishing market with European farmers. Several UK farmers participated in the early field trials of genetically modified organism (GMO) but when negative public opinion on the GMO issue surfaced, these farmers began to grow skeptical about buying and planting Monsanto seeds. In recent reports, Monsanto revealed a future plan to invest heavily in its European seed business to increase sales of its other products after it ceased development of genetically modified crops in the European Union. However, a high opposition to the technology was hurting its commercial prospects (Monsanto to grow..., 2013).

Today, Monsanto operates mostly as a sustainable agriculture company that delivers products to farmers around the world. Its leading seed brands include cotton, oilseeds, fruits and vegetables while its prominent manufactured products involve Roundup and other herbicides. The company has a history of licensing its seeds and technologies to other business firms and has fostered a reputation for suing small farmers who use its seeds in violation of contract. On May 13, 2013, the Supreme Court upheld decisions of the United States District Court for the Southern District of Indiana and the Federal Circuit Court that ordered Indiana farmer Vernon Bowman to pay Monsanto over \$80,000 for planting the company's genetically modified soybean seeds that were purchased from a grain elevator rather than from Monsanto itself (Supreme Court of the United States, 2013). The company has successfully argued that millions of dollars are spent on developing new crop variations and that these products should be viewed as proprietary developments with full patent protection (Schiffman, 2013). Monsanto seeks to provide solutions to environmental issues by developing seeds and systems to help farmers and create better seeds and systems to grow more nutritious food while also conserving natural resources.

On its official website, Monsanto claims commitment to "participating constructively and transparently in the political process, as such participation is essential to the company's long-term success." (Monsanto Political Disclosures, 2015, para. 1). The Board of Directors established the Good Government Fund Advisory Panel (GGFAP) to manage the company's contributions to political candidates in states where offerings are allowed (Monsanto, Political Disclosures, 2015).

The company has the Monsanto Citizenship Fund (MCF), a political action committee that contributes to political candidates "in a manner that is compliant with all applicable U.S. federal and state laws and reporting requirements" (Monsanto, Political Disclosures, 2015, para. 10). The contributions of this committee are funded through donations made by eligible Monsanto employees, according to the official website. The MCF supports political issues and candidates parallel with the company's policy objectives, endorses the election of responsible, qualified candidates to public office, and supports candidates for office, political parties, or other political committees in cases where the views of those candidates or entities are in general agreement with those of the company (Monsanto, Political Disclosures, 2015).

Public Perceptions of Monsanto

In its yearly ranking of ethical performance of multinational corporations, the Swiss research firm Covalence revealed that Monsanto was considered the least ethical company in the world. The research firm collected quantitative and qualitative data about 581 companies. The data incorporated 45 criteria regarding labor standards, waste management, human rights records,

media, industry, and NGO documents (Kiser, 2010). A year later, the website *NaturalNews* conducted an online survey that asked readers to nominate the "World's Most Evil Corporation". About 51% of more than 16,000 people who participated in the survey rated Monsanto as the "Most Evil Corporation of the Year" (Adams, 2011). Still a more recent poll organized by *NaturalNews* named Monsanto again in 2013 as the "most evil corporation" (Sheets, 2013). One may argue that *NaturalNews* is inclined to ranking Monsanto as evil. However, we noted that various reputable media reported its research findings.

MONSANTO'S PUBLIC RELATIONS EFFORTS

In 2008, the release of the film *Food Inc.* marked a media monsoon of negative publicity for Monsanto. The documentary, directed by the Emmy Award-winning filmmaker Robert Kenner, concluded that agribusiness produces food that is unhealthy, environmentally harmful, and abusive of both animals and employees. A segment of the film portrayed Monsanto as the corrupt contender in the warfare on food. This caused backlash from educated eaters, health-conscious citizens, environmentalists, and food advocates (Sheets, 2013). Since then, Monsanto has been continuously criticized and accused of being a highly unethical company, causing its image to steadily decline.

Monsanto has maintained a reactive public relations approach. Publics have observed that key officials in the previous Monsanto administration were known for avoiding criticism and unwilling to address challenges to the company (Hopkinson, 2013a). Following a year of ceaseless bad publicity in 2013, Monsanto relied more on its public relations staff and FleishmanHillard, one of the nation's largest public relations firms (Hopkinson, 2013b). Robert Fraley, executive vice president and chief technology officer at Monsanto, stated that the company has "been absolutely riveted and focused on giving technology and tools to farmers to improve their productivity and yield and [they] haven't spent nearly the time [they] have needed on talking to consumers and talking to social media and really intercepting this "opposition to biotechnology" (Hopkinson, 2013b, para. 5).

Monsanto is focusing now on contesting negative public opinion of the company's practices and its biotechnology. The corporation has recently recognized that the negative attention can influence future policy decisions, sales, and operations. Monsanto has been associated with several out-of-house public relations firms including: Burson Marsteller, Global Access Limited, Bivell Woodings Ltd, Bell Pottinger Good Relations UK, Focus Communications and Bartle Bogel Hegarty UK (Monsanto: Influence/lobbying, 2005).

Actions and Special Events

Monsanto made intensive lobbying efforts in Congress, especially between 2008 and 2012. Such efforts resulted in the enactment of what is called "Monsanto Protection Act." President Barack Obama signed on March 26, 2013 the Act into law which states that even if future research shows that genetically modified organisms (GMOs) and genetically engineered (GE) seeds cause significant health problems, the federal courts can no longer have any power to stop their spread, use, or sales (Monsanto Protection Act..., 2013). More than 250,000 Americans urged President Obama to veto the Monsanto Protection Act but their insistence had no effect (Obama signs Monsanto..., 2013).

Monsanto collaborated with "conservation partners" including the Nature Conservancy, National Audubon Society, Iowa Soybean Association, and the American Corn Growers Association to illustrate to customers that the company values community relations. The agriculture firm hosted its first "Honey Bee Health Summit" in June 2013. The summit was a gathering at the company's headquarters in Missouri which included scientists and groups of beekeepers who advocate safety of bees (Towers, 2013).

Monsanto implemented a plan on college campuses to fund research and communication programs. It also launched a website called "GMO Answers" to contest misconceptions of genetically modified organisms ("GMO Answers: website...", 2013). In addition, Monsanto held its 5th annual contest searching for "Farm Mom of the Year" to recognize the vigorous efforts of farm moms. The company opened nominations for the contest from February to March 2014, and anyone could nominate his/her favorite farm mom for a chance to win up to \$10,000 (Monsanto opens search..., 2014).

Monsanto announced the launch of a "listening tour" in Hawaii to improve relations with its neighbors and to provide a better understanding of the company's farming practices and products. The firm attempted to identify the community's concerns and build better relations with the neighbors. The community efforts began with the launch of a web portal, monsantohawaii.com, designed to make people more capable of learning about Monsanto and to encourage them to ask questions about the company's operations and practices. As part of this effort, Monsanto Hawaii attempted to increase farm tours, hold more community meetings and forums, and organize programs to inform the company's direct neighbors about its daily operations (Cocke, 2014).

Monsanto held a press conference in February 2014 at the Commodity Classic Show in San Antonio, Texas to publicize the recently-announced Soil Health Partnership (SHP) that intends to measure and communicate the economic and environmental benefits of different soil management strategies and to help farmers improve the productivity and sustainability of their farms (New partnership aims..., 2014).

Use of Controlled Media

Monsanto used a wide variety of media but relied heavily on controlled media to communicate messages to target publics and to highlight its benefits to consumers worldwide.

Official website. Monsanto created a tab on the top of its official website titled "Newsroom". The tab contains official publications involving news releases, social media, and recognition.

Online discussion forum. Monsanto helped launch a website called "GMO Answers" that provides information on biotechnology. On this website, visitors can ask questions, explore basic information, and review studies and articles regarding biotechnology.

Lectures and seminars. Monsanto held summits with its conservation partners, such as the "Honey Bee Health Summit" where beekeepers provided information about the effects of biotechnology on the safety of bees.

Twitter. Monsanto established a Twitter account to discuss its community involvement, highlight its awards, and publicize articles on GMOs, and other relevant topics.

Promotional videos. Monsanto has set up a YouTube account to post promotional videos that discuss how the company has improved people's lives in other countries, and to disseminate facts on GMOs and the importance of Monsanto farmers.

Television commercials Monsanto made television commercials portraying farm families affiliated with the company as producers of everyday items like food, fuel, and clothes. The commercials, which were aired on Spike TV, depicted the company as an "American farm family" that takes a great care to grow quality products for its customers.

Use of Uncontrolled Media

Press releases to online publications. Monsanto sent an array of press releases to online publications (such as BUSINESS WIRE) to communicate details of special events and contests.

Photo opportunities at special events. Monsanto organized photo opportunities at many of its special events and press conferences.

Target Publics

While Monsanto organized various kinds of public relations activities to help salvage its public image, it did not come up with any list of target publics. However, in scrutinizing these activities, one can conclude that the company made efforts to reach individuals and organizations that generate a wide range of opinions. These included: current customers, future customers, environmentalists, mass media, university agriculture departments, and government. The following is a profile of each public that Monsanto targeted:

Current customers. These people include small farmers around the world who do business with the company either through the purchase of the biotechnology seeds or crop protection products.

Future customers. This group involves small farmers who might be interested in doing business with Monsanto but are unsure of trusting the company due to a negative public image.

Mass media. These sources consist of online publications and national print and broadcast media. They are powerful in influencing the public opinion.

Environmentalists: These individuals are capable of grabbing the media attention through protests and rallies against Monsanto. They can also contribute to negative publicity.

University agriculture departments. These departments assist Monsanto in affecting followers and associates. They may also help build community relations.

Government representatives. Monsanto's rapport with government of foreign countries is vital to selling the company's products in these countries. These representatives have voices in enacting laws and regulations that diminish restrictions against foreign products.

Messages

Three main messages have been drawn from the gathered information on Monsanto's actions and program efforts:

- Monsanto is dedicated to America's fans and offers a wide array of food choices.
- Monsanto focuses on sustainable agriculture for a better future.
- Monsanto delivers agricultural products that support farmers around the world.

Theme

"Dedicated to sustaining the future"

This theme summarizes what Monsanto has sought to convey to the target publics through its public relations efforts.

RECOMMENDATIONS FOR FUTURE IMPLEMENTATION

Monsanto missed the opportunity to use credible sources and verbal/nonverbal cues to communicate its messages to targeted publics. Only in very few instances, the company followed a two-way communication approach through the creation of a website that allowed visitors to ask questions. Monsanto did not use opinion leaders to sway consumers but it allowed audience participation through social media comments and questions posted on its websites.

Monsanto used the press agency/publicity model, the oldest practice of public relations. The flow of communication was mainly one-way: from the company to targeted publics. The company sought assistance from highly-recognized public relations firms to revamp its tarnished reputation but it was ill advised to rely heavily on publicity for persuasion and manipulation. Modern public relations practice calls for acknowledging public concerns and maintaining an open dialogue between the organization and its constituent publics to secure a satisfactory solution for all parties (Broom & Sha, 2013).

Undoubtedly, Monsanto's tarnished reputation is a very serious problem. Altering negative perceptions requires long-term planning. Sole reliance on publicity to improve reputation is myopic. In fact, in Monsanto's case, the publicity aspect has aggravated the situation and deepened the mistrust between the company and its customers. We believe that four actions require immediate attention from Monsanto as a first step to help solve the reputation issue. The actions are: (1) extending the target public list, (2) establishing specific, measurable and time-bound objectives, (3) articulating the research methods and tools to assess the outcome of actions, and (4) implementing the public information and the two-way symmetric models of public relations.

Extended List of Target Publics

In our analysis of Monsanto's activities we noted that six important groups of publics were overlooked in the process of revamping the company's reputation. These groups are: scientific experts, organic consumer associations, security and conservation organizations, community

leaders, shareholders, and employees. The following is a brief explanation of the necessity to include each of the six groups in Monsanto's future public relations activities:

Scientific experts. These people bring together observations, knowledge and data to help solve problems, invent solutions and develop new products. More importantly, they lend credibility in solving disputes between Monsanto and its constituents.

Organic consumer associations. It is very essential for Monsanto to cooperate with these associations that address crucial issues of food safety, industrial agriculture, genetic engineering, children health, and environmental sustainability.

Food security and conservation organizations. These entities play essential roles in educating worldwide consumers about food production and management of plant genetic resources.

Community leaders. It is important for Monsanto to target prominent community leaders who can convey messages to certain publics and sway their opinions.

Shareholders. They are the ultimate decision-makers who can determine the direction and operations of the company. They are also responsible for liabilities and budget.

Employees. They represent the company on a daily basis. Informing them of changes, procedures, and pertinent issues will enhance the company's production and morale.

Specific, Measurable and Time-Bound Objectives

The most important aspect of any public relations activity is the objectives. They enable practitioners to show whether they have achieved what they set out to achieve, and thereby demonstrate accountability. In our review of Monsanto's work to refurbish its reputation, we did not find a single document that articulates the public relations objectives for the agriculture company. Thus, we propose below a set of specific, measurable and time-bound objectives. We have reviewed hundreds of public relations case studies in textbooks and trade journals to establish realistic objectives that Monsanto can pursue and we have considered the magnitude of the issue along with Monsanto's resources to implement such a plan.

Informational objectives

1. To establish awareness of safety hazards and precautions of Monsanto products among 65% of current customers within the next two years.
2. To create awareness of the benefits of using Monsanto products among 50% of future customers within the next two years.
3. To create awareness of Monsanto's campaign on college campuses among 35% of university agriculture departments within the next two years.
4. To establish awareness of Monsanto's partnership with conservation groups among 60% of national environmentalists in two years.

5. To establish awareness of Monsanto's political involvement among 70% of government legislators within the next two years.
6. To inform 70% of online publications and national print and broadcast media of special events that advocate sustainability demonstrated by Monsanto in two years.
7. To inform 80% of food security and conservation organizations of Monsanto's compliance with regulated policies and procedures in the food production process within the next two years.
8. To establish contacts with 60% of organic consumer associations to inform them of the company's policies regarding food safety and children's health within the next two years.
9. To keep 50 community leaders informed of the company's efforts to solve safety hazard issues within the next two years.
10. To update all shareholders of disputes with government and media.
11. To keep all employees informed of policy changes and new procedures all the time.

Attitudinal objectives

1. To diminish the perceived health dangers of Monsanto products among 55% of current customers in two years.
2. To generate positive perceptions of Monsanto's community relations among 50% of current customers within two years.
3. To reduce the perceived health dangers of Monsanto products among 35% of future customers within two years.
4. To create positive perceptions of Monsanto's community relations among 40% of environmentalists within two years
5. To generate positive attention among 45% of national media gatekeepers through social networking within two years.
6. To enhance morale among 80% of the employees in two years.

Behavioral objectives

1. To reduce turnover rate among current customers by 30% within the next two years.
2. To convince 25% of potential customers to buy Monsanto products within the next two years.
3. To increase Monsanto's sales volume by 15% in two years.

4. To increase the level of participation of agriculture faculty in campaign activities by 20% in two years.
5. To decrease protests and rallies among 20% of environmentalist groups within the next two years.
6. To recruit three scientific experts to explain to consumers new solutions to food related problems in the next two years.

Output objectives

1. To decrease negative publicity of Monsanto brand among 35% of targeted media within two years.
2. To place four advertisements in print and online media promoting the virtues of farmers in two years.
3. To distribute press releases to various media in two years.
4. To hold four press conferences in the next two years.
5. To increase positive attention among 40% of media through Twitter within a two-year period.
6. To generate 80,000,000 media impressions in two years.

Methods and Tools to Assess the Outcome

There is no evidence that shows whether Monsanto has done anything to assess the outcome of its activities. It is clear that sales have declined in recent years but sales records should not be a sole indicator in measuring the effectiveness of any campaign. Sometimes social, political and economic factors influence the company's sales volume. The examination of these factors is beyond the scope of this study. In our part, however, we propose specific research methods and techniques to determine after the campaign implementation of the objectives have been met, unmet or exceeded expectations. The following section lays out the techniques and procedures for evaluation in the final stage of the campaign.

Informational objectives

- Call a sample of 500 current customers inquiring about their awareness of product safety hazards after two years.
- Conduct a phone survey with a sample of 800 potential customers to measure their level of awareness of Monsanto's product benefits.
- Organize face-to-face interviews with a sample of 300 faculty members to measure their level of awareness of Monsanto's campaign on college campuses after two years.

- Conduct an online survey among 300 environmentalists to measure their level of awareness of Monsanto's partnership with conservation groups after two years.
- Personally contact government legislators to determine their level of awareness of Monsanto's political involvement.
- Contact representatives of national and international media to measure their level of awareness of the special events that Monsanto organized in two years.
- Keep record of representatives of food security and conservation organizations, organic consumer associations, and community leaders contacted in two years.
- Keep a file of all forms of communication passed to shareholders about disputes with legislators.

Attitudinal objectives

- Conduct online and telephone interviews with a sample of 800 current customers to measure their perceptions of the health dangers of Monsanto products after two years.
- Construct online and telephone interviews with 1000 potential customers to measure their perceptions of the health dangers of Monsanto products.
- Manage telephone interviews (before and after) with a sample of 300 environmentalists to gauge their perceptions of Monsanto in two years.
- Contact 200 media gatekeepers to determine their level of attention to stories originated by Monsanto.
- Mail a questionnaire to all employees (before and after the campaign) to determine if their morale has improved.

Behavioral objectives

- Scrutinize sales of Monsanto products (before and after) among current customers within the next two years.
- Check sales records of Monsanto products among new customers within the next two years.
- Observe the level of involvement among university agriculture departments to measure their participation in campaign activities within the next two years.
- Monitor the number of protests organized by environmentalists to determine changes in their behavior in two years.
- Review the company's record to investigate if scientific experts have been recruited.

Output objectives

- Monitor and analyze the content of news articles about Monsanto published and broadcast in two years.
- Record the number of advertisement appeared in print and online media in two years.
- Keep track of the number of press releases distributed nationally and internationally in two years.
- Document the number of press conferences held to announce community relations' activities in two years.
- Check the number of "followers" and "retreats" on Twitter to measure levels of positive attention among social media.
- Screen national and international media to calculate the number of impressions generated by their coverage of Monsanto's activities in two years.

The Use of Public Information and Two-Symmetric Models

We believe that the public information and the two-way symmetric models of public relations should guide Monsanto's future public relations practices. In the first model, the main purpose of public relations is the dissemination of true information, not necessarily with a persuasive intent. The main task of the public practitioner is to report objectively about the organization to its publics. In the two-way symmetric model, communication flows both to and from publics – it is more of a dialogue than a monologue. Ideally, both the organization and the public are expected to change as a result of the public relations efforts. The practitioners here serve as mediators, not publicists, between the business firm and its public(s). Their ultimate goal is to create and maintain mutual understanding between both parties. Research plays a very important role in the two-way symmetric model. Public relations practitioners are expected to conduct formative research to help them identify the public concerns and choose objectives before initiating any public relations activity. They are also anticipated to do evaluative research to find out if objectives have been met after the campaign implementation (Grunig & Hunt, 1984). In other words, the research can be used here to counsel Monsanto's management on public reactions to its policies and how these policies can be changed to serve the public interest, and ultimately, to help alter negative reputation.

CONCLUSION

Monsanto's reputation has been severely damaged. The agriculture company has attempted to confront the public image issue but most of its activities are aimed at generating media publicity. Monsanto seems to have been shooting in the dark by: (1) ignoring important groups of publics, (2) pursuing unspecific and non-measurable objectives, and (3) unaccommodating consumers' wants and needs. The company still has a chance to salvage its tarnished reputation but it must

implement genuine public relations efforts to rebuild trust with its constituent publics. The efforts should be guided by the public information and the two-way symmetric models of public relations.

Today's competitive business environment requires communication managers to demonstrate in a measurable way how the outcome of a public relations program actually benefits their organizations (Austin & Pinkleton, 2015). In fact, all types of companies are under mounting pressures from a host of stakeholders to seriously consider their interests and needs. Effective public relations largely depends on designing and implementing a well-crafted public relations plan. Reputation management is currently the most important theme in corporate and organizational communication. It can be monitored and measured. Is "the world's most evil corporation" willing to consider the interests of its customers first and foremost in the process of altering their negative perceptions? It remains to be seen.

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