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P.O. Box 7222, Valelevu, Nasinu,
Fiji Islands

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Business Process Re-engineering in the SMEs: Critical Success Factors Perspective of an Emerging Economy

Luo Fan

Professor,
School of Management,
Wuhan University of Technology,
Wuhan-430070, P.R China,

Md. Salah Uddin Rajib (Corresponding Author)

PhD Research Fellow,
School of Management,
Wuhan University of Technology, Wuhan-430070,
P.R China,

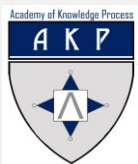
Md. Shariful Alam

PhD Research Fellow,
School of Management,
Wuhan University of Technology, Wuhan-430070,
P.R China,

ABSTRACT

During the age of globalization, change has become a general phenomenon of business environment. Managements are compelled to adapt to the change to survive. The markets are extremely competitive and if once the enterprise is rejected by the market, bouncing back is hardly possible. The SMEs of the world are facing this situation like the large firms. The SMEs of Bangladesh seem to be no exception. During 1990s, the concept re-engineering rises to adapt to the changes in terms of business process. However, critics raised concerns after a number of business process reengineering initiatives have been failed and such failures have raised a range of challenging questions about the effectiveness of reengineering. This paper deals with the determination of critical success factors (CSFs) of re-engineering in the small and medium sized (SMEs) manufacturing enterprise of a developing country, Bangladesh. Determinants have been identified empirically through the survey conducted in the SMEs sector of Bangladesh. The analysis indicates that management including their planning, commitment, sponsorship, experience and willingness has strong impact on the successful implementation of BPR.

Keywords: SMEs; Manufacturing firm; object orientation; critical success factors; Business Process Re-engineering (BPR); causal relation; performance; Bangladesh



1. INTRODUCTION

Developed information technologies and new production technologies make the business environment complex also. Because of these phenomena, the market domination has been shifted from the producer to the customers. Keeping customer happy is the best defense against competition. The firm that keeps its customer happy is virtually unbeatable (Lele and Sheth, 1987). The ever-changing customer requirements and increasing new environmental and governmental regulations compelled an organization to make drastic changes for future growth and survival (Lockamy and Smith, 1997). Basically, the essence of all the changes creates pressure on the business process. The price and quality of a firm's products and service must be competitive not only locally but also globally. Managements are continuously searching the effective and efficient business processes that reduce the cost and improve the quality and speed up the time. To face these situation the term "Reengineering" rises. Reengineering involves with the process improvement of the organization to adapt to the changes. However, critics question about the fad of reengineering as it fails in many cases. Critics also claim that alignment between strategy and structure is hardly possible and redesign is often inhibited by cultural and structural inertia (Sabherwal et al, 2001). Oliver (1993), in his research claims that 80% of business process reengineering fail completely and sometimes it worsen the situation of the business. However, researchers (e.g. Andreu 1997; Watts, 1995, Dickinson, 1997 et. al) have not phased out the concept of reengineering and have predicted a promising future.

Researchers have paid little attention on reengineering regarding the small and medium sized enterprises (SMEs). But, SMEs are facing the same situation like the large firms. Hence, SMEs can get benefit from the BPR. But the problem is that the internal configurations may not be suitable for the BPR that have been developed for the large firms. Hence, there is a need to investigate the small firm arena to determine whether the same principles for BPR apply, or whether a different approach needs to be taken by small businesses looking for radical change (Hale and Cragg 1996). It is argued that SMEs can directly involve with the BPR or can get help from the support services they need (Cagliano Raffaell el. al., 1998). Whatever be, this paper deals with the identification of critical success factor of SMEs in a developing country, Bangladesh, especially in manufacturing sector.

2. RESEARCH METHODOLOGY

This paper deals with the determination of critical success factor to implement re-engineering in the SMEs sector of Bangladesh, especially with the manufacturing sectors. A causal approach has been followed to determine the CSFs to implement BPR. To do that generally accepted psychological principles have been followed rigorously to formulate the questionnaire. Primarily, Critical Success factors (CSFs) have been identified from the previous research. These factors have been identified more meticulous way, consisting with the previous research and the configurations & nature of SMEs (Table 1). To set the measurement scale of questionnaire, Likert Scale (5 points) have been used. The questionnaire was formulated targeting the senior executive and manager who were involved with the redesigning of the business process.

3. LITERATURE REVIEW AND THEORETICAL UNDERPINNINGS

Hammer and Champy (1993, pp. 32) defined reengineering as the fundamental rethinking and radical redesign of business process to achieve dramatic improvements in critical contemporary measures of performance such as cost, quality, service and speed.

However, at the beginning there were some hesitations regarding the difference among the terms “reengineering”, “continuous improvement”, “quality” and “total quality management (TQM)”. But, it seems plausible that reengineering is tool for process improvement, and TQM is a management system for process management (Weinman J B, Fallh M Hossain, 1995). It seems plausible to think that reengineering will develop the process within the context of TQM.

3.1 Business Process Re-engineering and Interlude

BPR was evolved to solve the problems of the large-sized firms. Researchers paid little attention regarding the implication of BPR on the SMEs. There are huge research works on the reengineering on large firms. Primarily, practitioner heavily was using reengineering as a term of downsizing. As a result, once reengineering and downsizing became synonymous. And a bad concept rose about reengineering in the organization. Downsizing was a key reason of low success rate of Business Process Reengineering (Bryant and Chan, 1998, p.52). In case of large firm, some researchers claim that Re-engineering has failed to address leadership, culture, change management etc (Drago and Geisler, 1997, pp. 298 – 300, Braganza and Myers, 1996). Campbell and Kleiner (1997) claimed that reengineering was failed to address organizational culture.

Suprateek Sarker and Allen S. Lee (1997), after conducting a research on U.S. telecommunications company (TELECO), claims that reengineering has failed in that company. They also pinpointed three issues (leadership, communication and IT knowledge and management) that significantly contributed to the failure of reengineering of TELECO. After examining reengineering initiatives and procedures in 100 companies, Hall et al. (1993) claims that in most cases reengineering has failed to cope with the real unit points. After examining 25 companies, Maull et al. (1995) claim there are six factors that affect the way of BPR implication and its continuity. They are the performance measured use; the impact of information technology; the impact of human factors; the presence or absence of a process architecture; and the link between BPR and corporate strategy. Goldwasser (1994) found out five-phase approach in Southern California Gas: planning; internal learning; external learning; redesigning the process; and implementing change. However, Southern California Gas was being suggested to include a leader and continuous learning process by Goldwasser to success.

Researches have found out missing links that are responsible for the failure of reengineering. Towers (1993) suggest combining some issues like in-time leadership, motivation, training/learning and cultural change with the mechanistic approach of reengineering. Willmott (1995) suggests about the concept of “self-realization”, although it’s a difficult matter for the lower level. Braganza and Myers (1995) identified eight factors for the successful implication of the reengineering. These are; Cultural change, Behavior change, Internal communication, Intangible Benefits, Changing Reward Systems, Attitude Change, Team working and Changing Individuals’ assessments. Al-Mashari M, Zairi M. (1999) identified a number of critical success factors for the successful implementation of BPR.

3.2 SMEs and Re-engineering

Still, few research works have paid attention to the BPR regarding the SMEs. It is obvious that the internal configurations of SMEs are not same like large firms. However, there is good opportunity to get benefit from the BPR to SMEs. Corporate structures of the SMEs is comparatively flat and management and CEO are involved with the total procedures. As a result, they do not suffer from bureaucracy and cumbersome organizational systems (Lefebvre and Lefebvre, 1992). Hence, SMEs can be benefited regarding the commitment and sponsorship from the top management to implement BPR. Moreover, SMEs are directly linked with the consumer. Due to a lack of management layers, small businesses are closer to their customers (Brady and

Voss, 1995). Because of these reasons, SMEs are generally considered to be flexible, adaptive organizations and may be easier recipients of BPR (Avison et al., 1995).

SMEs may have taken more advantages of the opportunities that IT creates than big business has (Gates et al, 1996). But SMEs face scarcity of qualified personnel to benefit from such information technologies packages (Eid and Moghrabi, 1995). Moreover, absorption capacity of technical innovation is poor in SMEs (Cohen and Levinthal 1990). Moreover, research institutes show little interest to work with the SMEs. However, indirect technology transfer mechanisms – such as technology or service centers, Science Parks, or co-operative associations can assist SMEs in technological arena (Raffaella Cagliano et al, 1998). Hence, SMEs can take an opportunity to enjoy competitive advantages through the implementation of BPR.

Basically the entire manufacturing process is a composition of the material flows. Both Material Requirement Planning (MRP) and Just-in-Time (JIT) are designed to manage the flow of materials, components, tools and associated information (Benton W.C., Shin Hojung, 1998). Hence, small and medium sized manufacturing enterprise also might be benefited from the Business process re-engineering considering complex business environment to handle the material effectively and efficiently. Environmental concern is rising day by day. However, it seems plausible SMEs will typically not have the internal resources for ISO 14000 adoption. However, it seems that SMEs will likely be dramatically affected by the movement toward a formal global environmental management system, as they have been impacted by other manifestations of globalization (Miles Morgan P. et al. 1999).

4. Critical Success Factors of Re-engineering in SMEs: Conceptual Model

Lih-Jen Chang and Phillip Powel (1998) developed framework for BPR in the SMEs consisting with the work of Ascari et al. (1995). Considering the challenges and pitfalls of BPR, Ascoari et al (1995) emphasizes on four elements. The elements are culture, structure, process and technology. Lih-Jen Chang and Phillip Powel (1998) developed model on the basis of these four elements.

Lih-Jen Chang and Phillip Powell (1998) have identified the relative importance of factor considering the position of business like enabler/facilitator, inhibitor and indeterminate on the basis of literature review. They have identified several factors under the four main factors. Those are size & control, team-based operations and external relations under structure; financial capacity, human resources, previous quality management under resources; employee empowerment, strategic and business planning, management support & communication and innovation under culture; and IT\IS infrastructure and IT\IS expertise and end-user skills under technology.

Some researchers like J. Bradford and S. J. Childe (2002) explore that in small and medium sized manufacturing enterprise non-linear redesign methodology is more effective. However, this paper deals with the determination of the critical success factors on the basis of causal relationship, as BPR is a set of logically related tasks performed to achieve a defined business outcome (Davenport and Short, 1990). Hence, factors have been rearranged under several blocs to reflect the cause and effect relationship among critical success factors of BPR. To do that factors have been arranged that are identified by Lih-Jen Chang and Phillip Powel as well as the other researchers of large firm that are consistent with the nature and configuration of SMEs under a fishbone diagram. Fish bone diagram is widely known to detect the causal relationship first employed by Kaoru Ishikawa (1990) who first used the diagram in 1960. Consisting with the fishbone diagram, CSFs can be identified for the purpose of successful implementation of

reengineering in the SMEs sector. Fundamental blocs can be identified with the following diagram;

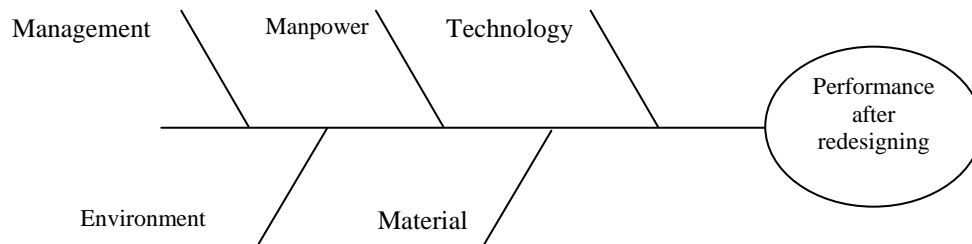


Figure 1 Impact of fundamental blocs on reengineering

Consisting with the previous research on BPR of SMEs, we have classified the different factors under the five fundamental blocs. Table 1 shows the detail of these;

Table 1 The survey Instrument with 20 items of Potentials CSFs

Five fundamental blocs with 20 measurable items	Source
<i>Management</i>	
1. Planning by top management considering the customer satisfaction and quality of goods	Chang Lih-Jen & Powell Philip (1998)
2. Top management was Committed	
3. Top management are the sponsor*	
4. Management was highly experienced	
5. Management was willing to change the existing structure for the sake of BPR	
<i>Organizational Environment</i>	**Miles Morgan et al. (1999)
6. Organizational Culture has significant impact	
7. Green environmental aspects has significant impact on the successful re-engineering	
8. Organizational Structure\hierarchical structure has significant impact.	** Adopted form the reseach of large firm
<i>Manpower</i>	
9. Leadership style has significant impact on the success of re-engineering	
10. Training\learning has significant impact on the success of re-engineering	
11. Resistance to change	
12. Adaptation with the new procedure require long time	Al-Mashari M, Zairi M. (1999), Chang Lih-Jen &
<i>Material</i>	
13. New requirement of material has significant impact on the success of BPR	
14. Adjustment of material has significant impact on the success of BPR	
15. Change of MRP significantly impact supplier relation and consequently has significant impact on the success of BPR	
<i>Machine\technology</i>	
16. Alignment of IT infrastructure and BPR has significant impact on success	

17. Process architecture has significant impact on the success of BPR	Powell Philip (1998)
18. IT investment has significant impact on the success of BPR	
19. Increase of IT function is required to succeed	
20. Proper IT systems integration is required	
*indicates the financial viability	
**mainly adopted from BPR research of large firm	

Lih-Jen Chang and Phillip Powel (1998) have identified financial resources under the head of resources. In that paper, financial resources have been used interchangeable with the management sponsor. Other factors have been mentioned under different blocs logically consisting with the objective of the paper.

5. SMEs of Bangladesh

The Industrial policy of Bangladesh 1999 describes small enterprises as those employing less than 50 persons and having a fixed capital investment of 100 million BDT (USD 1.69 million). To define medium enterprise they reset the number of employees, from 50 to 99 and investment, from USD 1.69 to USD 5.07 million. However, The Industrial Policy of Bangladesh 2005 differentiated manufacturing firm from non-manufacturing regarding the definition of SMEs. It stresses more on fixed capital to define manufacturing SMEs. To be a medium enterprise, organizations have to maintain USD 246 thousand to 1.6 million investments excluding the value of land and building (GOB, 2005). Organizations less than USD 246 thousands will be treated as small enterprises. Survey was conducted in the organizations, which comply with the definition of SMEs of the latest industrial Policy of Bangladesh. However, respondents came from different background within the SMMEs (Small and medium sized enterprises). Basically garments (the dominant sector of Bangladesh), cement manufacturing, plastics and ceramics company are included in that survey.

5.1 Survey Procedure

To propose the framework of BPR for SMEs, Lih-Jen Chang and Phillip Powell (1998) states that SMEs are more likely to re-engineer their process during the stages of growth. They draw this proposition based on the theory of Kinni (1995). Kinni argues that SMEs tend to re-engineer from a position of strength. Whatever be, the objective of paper was to find out the CSFs of BPR in SMEs. So, the respective position of the relevant SMEs at the time of re-engineering has not been considered.

Hence, questionnaires were sent to all the SMEs and we have selected questionnaire only from the SMEs that have experienced the business process re-engineering. The data were collected by spending more than eight months (from July 2011 to March 2012).

5.2 Response Rate

A total of 600 questionnaires were sent at more than 33 small and medium sized manufacturing firms. Questionnaires were sent at more than one branch in case of some SMMEs (Small & Medium Manufacturing Enterprise). Out of 600 questionnaires 133 were received. However, 26 questionnaires were incomplete. Hence, 107 questionnaires were used for the analysis. 107 usable questionnaire is somewhat deemed to be sufficient for further analysis (Hair et al., 1998). Response rate is relatively low as many firms did not experience redesigning yet.

5.3 Data Analysis and Results

Data was analyzed rigorously. Basically, total procedure has been performed in two steps. Primarily, data dimensionality was examined through principle component analysis and correlation. Multiple regression analysis was performed to find out the relationship between the

identified CSFs and organizational performance. Only relevant analyses that are capable to present the total scenario have been presented.

5.3.a. Principal Component Analysis

Principal Components Analysis (PCA) has been done at first. Exploratory factor analysis was used to evaluate the construct validity of the multi-item scales. To allow correlation between factors hypothesized to be related, factor analysis were conducted using principal components extraction with oblique (direct quartimin) rotation (Hair J.F et al. 1998). The established heuristic of extracting all factors with eigenvalues greater than 1.0 was used to determine the number of factors in each analysis (Johnson, D.E., 1998). In the factor analyses, individual items were considered to have loaded onto a given factor when the primary loading was 0.500 or greater (Kline, P., 1994). The principal components analysis suggested that the original set of variables could be concisely represented by one factor. Hence, a varimax rotation will produce the same result like unrotated. Table 2 presents the details of exploratory factor analysis (Independent variable only). Uniqueness of the independent variables is also inserted to present the detail scenario.

Table 2 Exploratory Factor Analysis (Varimax Rotation)

Factors	Factor 1	Uniqueness
<i>Management</i>		
Planning by top management	0.7533	0.4326
Top management was committed	0.8166	0.3331
Top management was the sponsor	0.7783	0.3942
Management was highly experienced	0.8043	0.3531
Management was willing to change the existing structure	0.8118	0.3409
<i>Environment</i>		
Organization culture has significant impact	0.8213	0.3254
Green environmental aspects has significant impact on the successful re-engineering	0.8092	0.3452
Organizational Structure\hierarchical structure has significant impact.	0.7959	0.3666
<i>Manpower</i>		
Leadership style has significant impact on the success of re-engineering	0.7662	0.4130
Training\learning has significant impact on the success of re-engineering	0.7918	0.3731
Resistance to change	0.7752	0.3991
Adaptation with the new procedure require high time	0.7601	0.4222
<i>Material</i>		
New requirement of material has significant impact on the success of BPR	0.6861	0.5293
Adjustment of material has significant impact on the success of BPR	0.8145	0.3365
Change of MRP significantly impact supplier relation and consequently has significant impact on success of BPR	0.8168	0.3329
<i>Machine\IT</i>		
Alignment of IT infrastructure and BPR has significant impact on success	0.8244	0.3203
Process architecture has significant impact on the success of BPR	0.7440	0.4465
IT investment has significant impact on the success of BPR	0.7635	0.4171
Increase of IT function is required to success	0.7849	0.3839
Proper IT systems integration	0.7868	0.3810
LR test: independent vs. saturated: $\chi^2(190) = 1775.63$, Prob> $\chi^2 = 0.0000$		

5.3.b. Correlation and Regression Analysis

Regression analyses have been shown in table 4. Table 3 represents the correlation coefficient among fundamental blocs of the organization.

Table 3 Correlation Coefficient among the fundamental blocs

Variables	Management	Environment	Man	Material	Machine
Management	1.0000				
Environment	0.9233	1.0000			
Man	0.8932	0.8707	1.0000		
Material	0.8899	0.8405	0.8608	1.0000	
Machine	0.9506	0.8968	0.9033	0.8802	1.0000

*Correlation coefficient is significant at $P < 0.01$

Table 4 Multiple Regression Analysis

Variable	Coef.	Std. Err.	T	P> t	Beta
Management	0.4748	0.1099	4.32	0.000	0.3998683
Environment	0.1310	0.0736	1.78	0.078	0.1135649
Manpower	0.1362	0.0705	1.93	0.056	0.1165292
Material	0.1671	0.0641	2.60	0.011	0.1434844
Machine\IT	0.2616	0.0933	2.80	0.006	0.2338496
Constant	-0.1989	0.1063	-1.87	0.064	

n=107, F(5, 101)=107, Prob>F = 0.0000, R-squared = 0.9438, Adj R-squared = 0.9410, Root MSE = 0.15437

Analysis reveals that the role of management has the strongest impact (0.3998) on the performance of the organization regarding the implementation of the BPR. Machine\IT is in the second position (0.2338) regarding the impact on the performance of the organization. Statistical significance level is more than 99%. Material that is the heart of the manufacturing firm is in third position (0.1435) with the about 99% significance level. Manpower is in forth position (0.1165) with the about 94% significance level. Environment is in the last position (0.1136) with the 92% significance level.

The R-squared is 0.9438, meaning that approximately 94.38% of the variability of financial performance is accounted for by the variables in the model. Adjusted R-squared indicates that about 94.10% of the variability of financial performance is accounted for by the model; even after taking into account the number of predictor variables in the model. The result of table 3 indicates that there is a strong correlation among the fundamental blocs of the organization for the successful implementation of reengineering. Correlation coefficients are significant at $p < 0.01$ for all level. These strong correlation coefficients ultimately support the causal relationship among the fundamental blocs in the organization for successful implementation of reengineering.

6. INTERPRETATION AND DISCUSSION

The outcome of the survey is consistent with the several previous theoretical and empirical researches. Lefebvre & Lefebvre (1992) states that compare to large firms, the management structure of small firms is flatter, and hence they do not suffer from bureaucracy and cumbersome organizational systems. So, management can play a good role. The analysis of the result also

shows that management's active participation works as a strong critical success factor to implement BPR successfully. Basically, most owner-managed business fails due to the owner's lack of appropriate management experience. The result of the survey also supports that in case of redesigning of business. In the survey questionnaire, under management blocs there are 5 different points. These are; planning by management, management commitment, management experienced, willingness and ability to manage the financial resources. Financial resources have been used under the management blocs as it seems plausible that in case of SMEs management or owner is highly responsible to manage money. The result of the research indicates that successful management including financing managing ability has high impact on the successful redesigning of business.

Previous research on redesigning of SMEs on production process by Alam S. et al (2011), Salah Uddin et al. (2011) in Bangladesh indicates that in case of production process, product design has a significant impact on the success of reengineering. It indicates organization adaptation ability with the rapid changing market has a significant impact. The result ultimately indicates the responsibility of management, as management take decision about the major aspects of SMEs. Some national research of Bangladesh also indicates that there is big problem of financing in SMEs of Bangladesh. Because of the high risk and high supervision cost, commercial banks are not interested to finance at the SME sector (Siddiquee, 2006). Only two banks (BRAC and BASIC) among 49 listed banks of Bangladesh are providing some special financial help to the SMEs.

7. UTILITY OF THE STUDY

Re-engineering is well matched with the horizontal or process management. The notable thing is that it is assumed that future organizations will rely more heavily on horizontal or process management (DeToro and McCabe, 1997). Hence, utilization of re-engineering will be increased in SMMs in future. This paper has identified CSFs to implement the BPR in SMMs regarding a developing country, Bangladesh. It is expected identified CSFs will help in the implementation of BPR. As a first-mover, SMEs can enjoy competitive advantages through the implementation of BPR.

8. CONCLUSIONS

SMEs are in the initial stage to implant the reengineering, especially in developing countries. It is obvious that developing countries have to face the challenges of globalization. Change is an inevitable phenomenon of the business. Management of SMEs is compelled to find out the efficient business process to survive. The SMEs of Bangladesh are facing these challenges also. In many cases, SMEs are indifferent to the problem and potential benefit of BPR. So, in many cases, SMEs are redesigning their process by following a partial or problematic way. This paper only explores the area that is more sensitive to the success of reengineering implementation. The paper draws conclusions on the basis of a causal relationship based model. The result of the analysis indicates that organizations have to consider the relationship of fundamental blocs to implement reengineering successfully. But, a sound management plan, their commitment, experiences, willingness and financial viability are strongly required to be successful.

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Notes:

1. As it mentioned in the article that there is less layer of management in the SMEs. The term “Management” (if it is associated with the SMEs) of that article is interchangeable with the top management.

Appendix

A. Questionnaire

Scale: [5=strongly agree, 4 = agree, 3 = neutral, 2 = disagree, 1 = strongly disagree]

	1	2	3	4	5
1. Planning of redesigning was executed by the top management/owner					
2. Top management was committed to execute the plan					
3. Top management managed the finance					
4. Top management was highly experienced					
5. Top management was willing to change the existing structure					
6. Organizational culture has significant impact on the reengineering					
7. Green Environmental aspects has significant impact on the reengineering					
8. Organizational Structure/hierarchical structure have significant impact on reengineering.					
9. Leadership style has significant impact on the re-engineering					
10. Training\learning has significant impact on the success of re-engineering					
11. Resistance to change was significant					
12. Adaptation with the new procedure require high time					
13. New requirement of material has significant impact on the success of BPR					
14. Adjustment of material has significant impact on the success of BPR					
15. Change of MRP significantly impact supplier relation and consequently has significant impact on success of BPR					
16. Alignment of IT infrastructure and BPR has significant impact on success					
17. Process architecture has significant impact on the success of BPR					
18. IT investment has significant impact on the success of BPR					
19. Increase of IT function is required to success					
20. Proper IT systems integration					
21. Revenue of the organization has increased after redesigning the business					
22. Return on Investment (ROI) of the organization has increased after redesigning the business					
23. Profit of the organization has increased after redesigning the business					

B. Profiles of SMEs

Sector	Number of firm	Cumul. Freq	% of the firms
Garments	15	15	46%
Plastics & Ceramics	7	22	21%
Cement Manufacturing	2	24	6%
Others	9	33	27%
Total	33		100%

C. Measurement Tools

STATA software, version 10 has been used. After inserting the data, various command have been used to see the results of the data from different perspective. However, only relevant and concise information that is capable to reflect the total scenario has been presented.

Shifting Focus of the Dermaceutical Players - Case of Indian OTC Advertising

Abdullah Bin Junaid*

PhD Scholar
Department of Management
Jamia Hamdard
New Delhi, India

Dr. Sadaf Siraj

Assistant Professor
Department of Management
Jamia Hamdard
New Delhi, India

ABSTRACT

In the recent years there has been a progressive expansion in the pain relieving OTC (Over the Counter Drugs) drug market in India. The increase was specifically witnessed in the analgesic dermaceuticals (OTC). The various factors that have attributed to this expansion in demand include not only the changing lifestyle, erratic work shifts of people but also to the changing gender- breakup of the working population. Outdoor as well as physical activities which were earlier considered to be the sole domain of males are now being taken up by female counterparts in rising proportions. Women, nowadays, not only carry out several outdoor activities but also indulge in a lot of multi-tasking & hence become more prone to body aches. In line with this trend, the focus of the advertisement of various pharmaceutical companies is diverted towards women. Through in this paper an attempt has been made to gauge the physical wellbeing of the working females and to undertake a comparative content analysis of the analgesic dermaceuticals advertisements to trace the shift of the pharmaceutical companies in terms of their focus & appeals in their promotional campaigns.

Key Words: OTC Drugs, Ointments, Changing Appeals, Advertisement, Pharmaceutical Companies, Content Analysis.

1. INTRODUCTION

In the recent years there has been a progressive expansion in the pain relieving OTC (Over the Counter Drugs) drug market in India. The increase was specifically witnessed in the pain relieving OTC dermaceuticals. The pain relieving balm market is worth around Rupees 700 crores and is dominating by powerful brands like Moov and Iodex. The various factors that have attributed to this expansion in demand include not only the changing lifestyle, erratic working hours of people but also to the changing gender-breakup of the working population.



The pharmaceutical companies are aggressively promoting their dermaceutical brands through both push as well as pull strategy to make inroads into the market. The following figures give a glimpse into the promotional efforts of the players in the market. *Source: AdExIndia (A Division of TAM Meda Research).*

- During Jan-Sep'10, TV advertising of OTC sector has recorded growth of 20 per cent compared to same period in 2009.
- Rubs/Balms, Cough Lazenges, Vitamins/Tonics/Supplements were the top three OTC categories advertised on TV during Jan-Sep'10.
- During Jan-Sep'10, top 10 categories accounted for 78 per cent of overall advertising share of OTC sector on TV.
- Smithkline Beecham, Reckitt Benckiser (India) Ltd and Procter & Gamble were the top three advertisers of OTC sector on TV during Jan-Sep '10.
- Top 10 advertisers contributed for 48 per cent of overall advertising share of OTC sector on TV during Jan-Sep '10.

Initially all the dermaceuticals brands targeted the male population with heavy skew towards the sports-performance continuum. This was a simple manifestation of stereotypical role portrayal of males as the only ones having an active and hectic lifestyle. Also being a dominant part of the workforce and seen as a main bread earner of the family. But of late, changes in the demographic, social and cultural landscape of the Indian society have resulted in a shift in the focus of dermaceutical advertising. As an emergent economy India is inching towards a pattern of more participative workforce in terms of gender; more women are becoming part of the organised work force. The last two decades of economic growth has opened up doors of opportunities for women in the key sectors of economy. Arrival of MNCs with their western HR practices and concepts, such as gender diversity in managerial and leadership roles, has propelled the participation of women in corporate sector. Cultural and societal change means a shift away from traditional views, stereotypes and societal attitudes; while change is slow for Indian women to gain executive positions, they have made progress in management in a relatively short time. In spite of these changes, data shows that majority of the women are still in unorganized sector and at the same time fairly low presence in the top managerial positions.

Employment numbers for women, further detailed in Women Workers in India in the 21st Century— Unemployment and underemployment indicate that of India's 397 million workers, 123.9 million are women: 106 million women are in the rural areas and 18 million in the urban areas. However, only 7% of India's labor force is in the organized sector including workers on regular salaries in registered companies), with the remaining workers (93%) in the unorganized or informal sectors. (http://www.cpiml.org/liberation/year_2004/february/WomenWorkers.htm). Women, nowadays, not only carry out several outdoor activities but also indulge in a lot of multi-tasking at work as well as at home & hence become more prone to body aches. Keeping track of this scenario, the focus of the advertisement of various pharmaceutical companies is increasingly being diverted towards women.

This paper attempts to track this transition in the dermaceutical advertising by means of content analysis of the advertisements of the major pain relieving OTC dermaceuticals. In the first part of the paper an attempt is made to study the impact working conditions on the physical wellbeing of the females as well as their brand preferences, by means of a survey of 150 working females. The second part includes a comprehensive content analysis of assortment of print & television commercials. For the sake of maintaining uniformity the following three parameters have been considered for analysis:

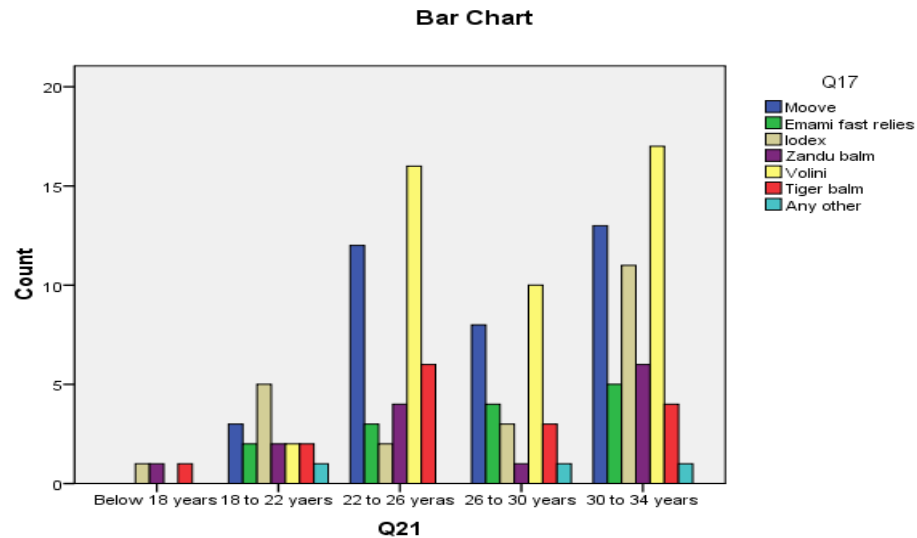
- **Association** (lifestyle, situation & personality)
- **Metaphor & storytelling** (narrative)
- **Aesthetics** (colours & symbols)

2. DATA ANALYSIS

The following tables provide an insight into the physical wellbeing of the working females & their brand preferences:

Figure: 1

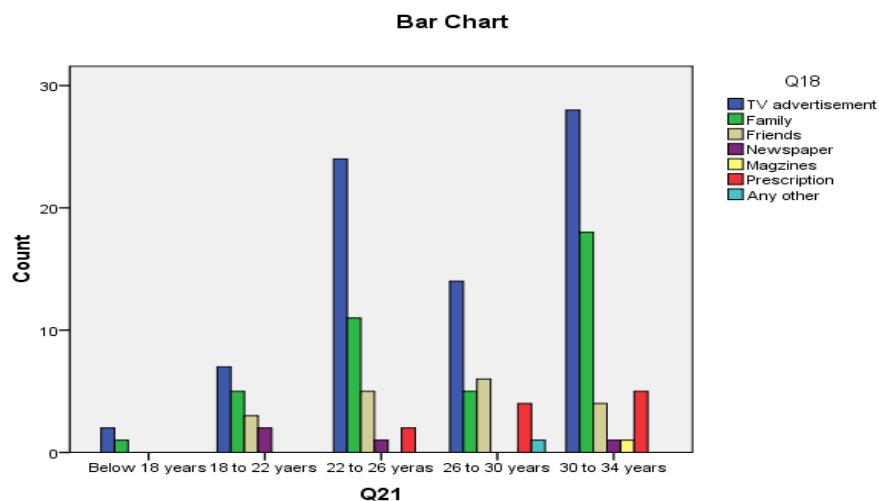
1. Age vs. Brand.



As quoted earlier also both Moov & Voilini score high across the different age groups of female respondents. This popularity can be attributed to both their high efficacy & aggressive advertising.

Figure: 2

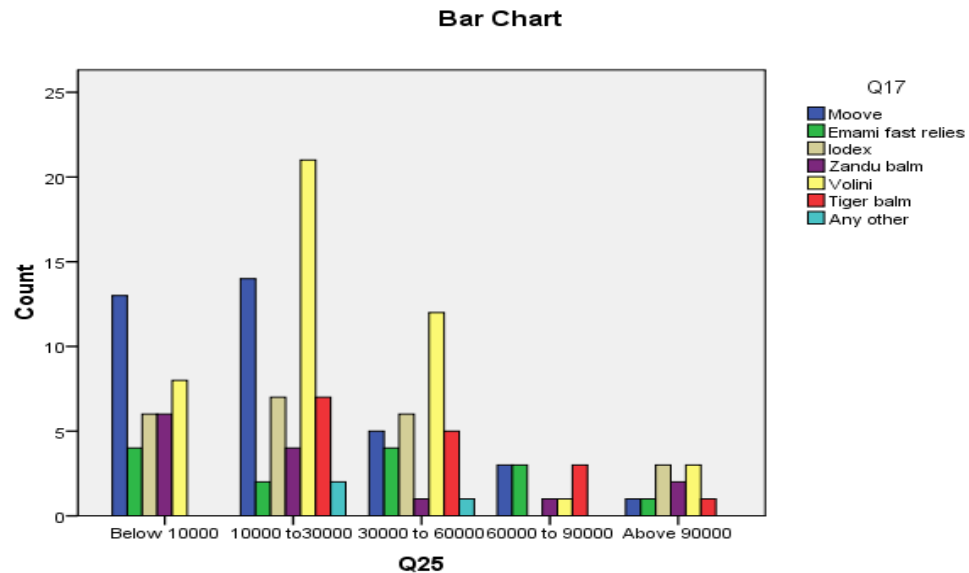
2. Age vs. Source of information about the product.



Television advertising emerged to be the most common source of information of the analgesic dermaceuticals which emphasizes the growing importance of advertising for brand awareness & promotion.

Figure:3

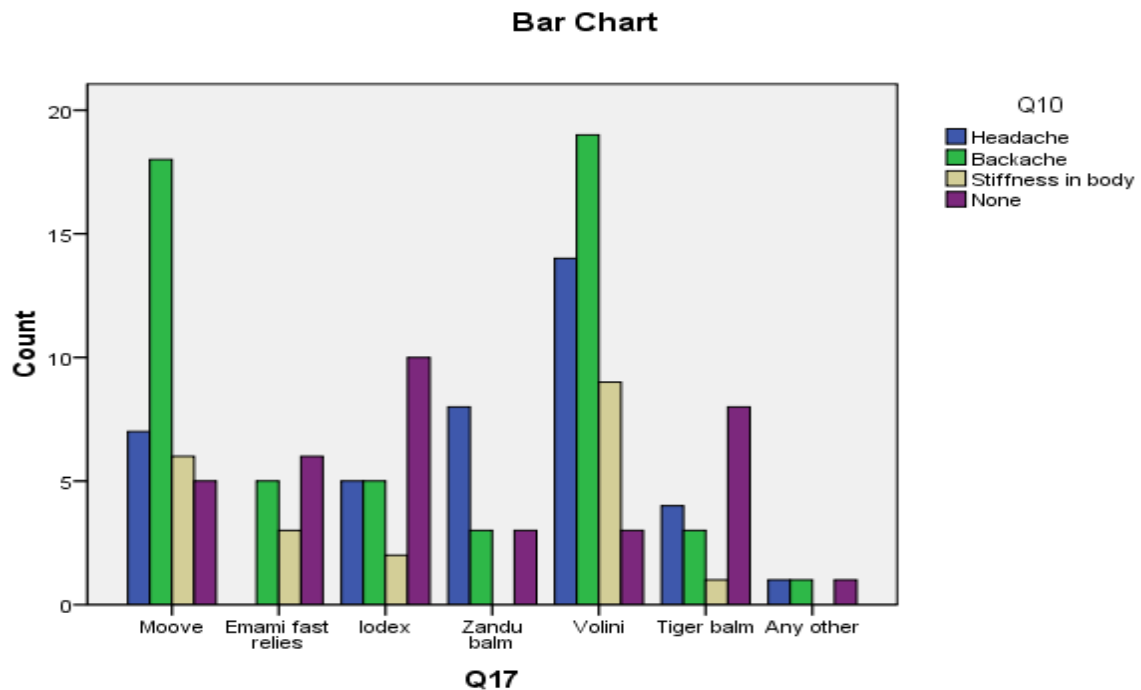
3. Income vs. Brand.



As can be seen in the figure Volini followed by Moov is more popular amongst the lower income group while voline is popular even in the upper income group.

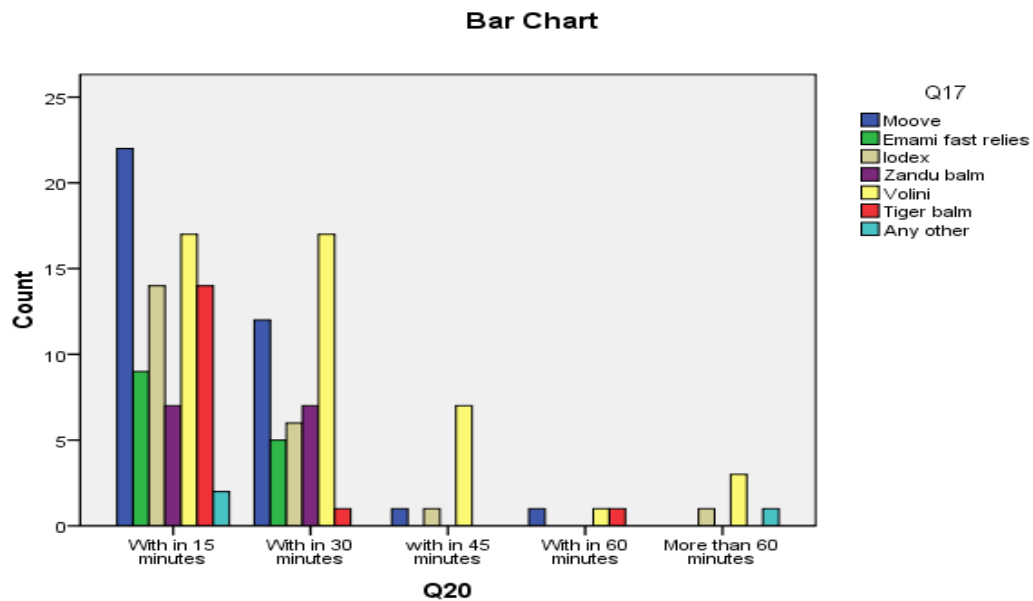
Figure: 4

4. Brand vs. Type of Complication



Most of the respondents preferred Volini followed by moov in case of backache & headaches. This can be attributed to their high efficacy as depicted in the following figure 6 & aggressive promotions.

Figure: 5
 5. Time of relief vs. Brand



The high popularity of volini and moov can be attributed to their high efficacy and absorbtion as can be seen in the above figure. This fihure also reinforces the fact that the dermaceticals give instant relief as compared to analgesic tablets.

Table: 1
 Hours of work at home vs. type of complication.

Count		Q10				Total
		Headache	Backache	Stiffness in body	None	
Q3	Less than 5 hours	20	24	10	31	85
	5 to 10 hours	9	16	7	5	37
	10 to 15 hours	9	14	4	0	27
	More than 15 hours	1	0	0	0	1
Total		39	54	21	36	150

The above table show that most of the working females were able to spend less than five hours doing the house hold chores followed by few who were able to spend 5-10 hours, most common problem that they faced was of backache followed by headache.

Table: 2
 Hours of work at home vs. type of complication.

Count		Q10				Total
		Headache	Backache	Stiffness in body	None	
Q4	Less than 5 hours	1	0	0	2	3
	5 to 10 hours	17	33	10	17	77
	10 to 15 hours	6	7	6	14	33
	More than 15 hours	2	2	0	3	7
Total		26	42	16	36	120

Most of the working females were spending between 5-10 hours at their workplace. This along with the household chores lead to a number of minor physical ailments.

Table: 3
 Shift timing vs. type of complication.

Count						
		Q10				Total
		Headache	Backache	Stiffness in body	None	
Q2	Morning	15	37	11	27	90
	Evening	1	0	1	2	4
	Night	10	5	4	7	26
Total		26	42	16	36	120

Backache along with headaches again emerged to be the most common ailment amongst females working in different shifts. The analysis of the survey suggested that the most common ailments amongst the working females were backache followed by headaches which makes them a lucrative segment for the analgesic dermaceutical players. Based on the review of extant secondary data & primary data collected by means of the survey it was quite apparent the females working as well as non-working have emerged to be the target audience for the dermaceutical players and that is the reason for the shift of focus of the dermaceutical advertising towards females. Followed by the survey a content analysis of the commercials of major dermaceutical players was done to trace this transition in the focus of the dermaceutical advertising. The three parameters considered for analysis are as follows:

- Association (lifestyle, situation & personality)
- Metaphor & storytelling (narrative)
- Aesthetics (colours & symbols)

VOLINI

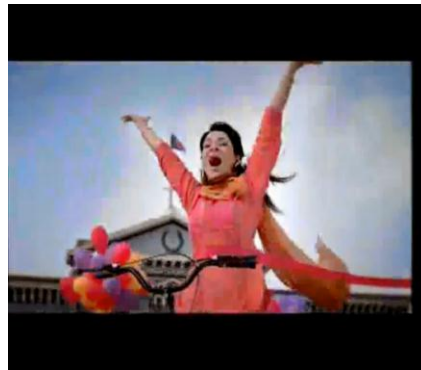
Tag Line: Asali Pain Reliever

Volini had developed huge brand equity because of its sheer effectiveness. The brand use the Tag Line “**Asali Pain Reliever**” (meaning Real Pain Reliever) indirectly mentioning that Moov is not a pain reliever.

Association (lifestyle, situation & personality)

Both TVC and print commercials are based on the insight that each and every mother wants to take up all the challenges thrown upon her and wants to emerge as a winner to please her child. The copy of the advertisement, which says “*Expert kaun? For my loved ones its me... for relief from backache its volini*” also portrays the same thought.





Source: <http://www.youtube.com/watch?v=dTkkxeVIAmk>

Metaphor & storytelling (narrative)

The TVC is about a modern day mother participating in a parent's sports day competition being held in her son's school. She loses out in the sack race owing to serve backache, which disappoints her son. However, Relief comes in the form of volini pain relief gel, offered by another parent who happens to be a doctor. In her eagerness to impress her son, the fully relieved mother goes on to lead a cycle race by a mile. But it turns out that it was a slow cycle race, and the slowest one gets to win. She takes the faux pas in her stride and gets into a playful mood with her son, who playfully challenges her to win the next race.



Source:

http://epaper.timesofindia.com/Repository/getFiles.asp?Style=OliveXLib:LowLevelEntityToPrintGif_TOI&Type=text/html&Locale=english-skin-custom&Path=TOIL/2010/12/31&ChunkNum=0&ID=Ad02600

Aesthetics (colours & symbols)

Mother has been used as a symbol of strength, problem-solver and expert and her role is being equated with the role of volini- quick & efficient. Females are shown in both the roles that of a lively mother & an expert doctor. The colour scheme used is bright & lively to depict freedom from pain & discomfort.

IODEX

Tag Line: Maa tujhe Salaam, Iodex Home maker



GlaxoSmithKline

Source: <http://advertisinginindia.wordpress.com/>

Sourece: <http://bizdom.blogspot.in/2010/09/iodexs-headfast-tvc.html>

Association (lifestyle, situation & personality)

Iodex's latest television commercial moved beyond the typical product-centric approach in an attempt to strike an 'emotional chord' with the consumer. The focal point of the advertisement is women- the homemaker. The commercial then traces the life of the woman (the wife) over a period of time.

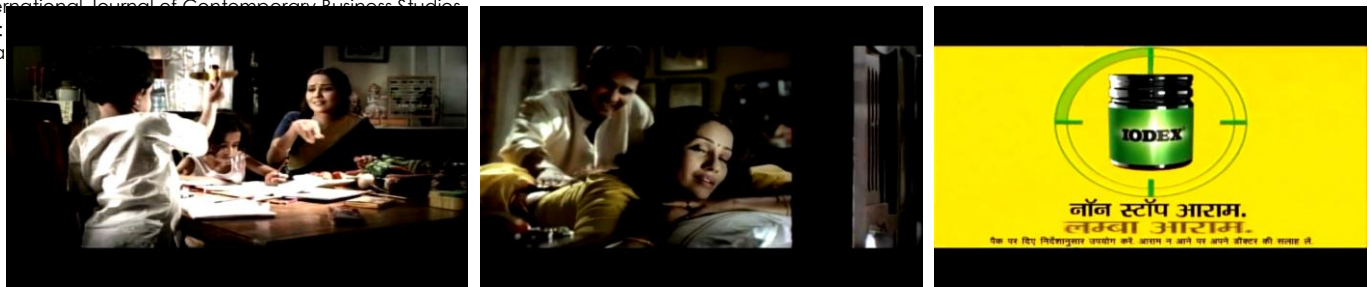
Metaphor & storytelling (narrative)

The whole narrative of the commercial is spun around the different activities a women , as a daughter, wife & mother, indulges in to keep the family comfortable & contented-- how she hushes her restive newborn to sleep in the middle of the night; her role as the champion mother of school-going kids; the rushed-off-her-feet but perfect homemaker.

The jingle that follows reinforces the same sentiment- '*...Tere aanchal se chhota aasmaan..Maa tujhe salaam...tujhse subah, tujhse shaam/Tune duniya ko rakkha hai thaam/Maa tujhe salaam.'*

The commercial ends with the shot of the husband tenderly applying Iodex on the woman's back as she catches her breath at the end of another exhausting day. 'Maa ka nonstop kaam,Iodex dein nonstop aaram,Iodex, lambaa aaram.' The commercial highlights the circumstances that lead to pain and the role that Iodex plays in helping her to do what she want to do. The ad is expected to reinforce the faith of the consumers in their trusted brand.





Source: <http://www.youtube.com/watch?v=2mdRUAH9odQ>

Aesthetics (colours & symbols)

Women as symbol of strength & comfort has been beautifully portrayed the commercial. The idea is to create an emotional connect with the audience- by emphasizing on the fact that the person (women) who is responsible for bringing so much happiness into the life of people around also requires comfort, and freedom from pain where iodex comes into play. 'Long lasting relief' may be at the core of this piece of communication, but it's the idea (of saying 'Maa Tujhe Salam') and treatment of that idea creates the differentiation. The commercial emphasises the important role that Iodex plays in helping the women to become the ideal home maker and plays tribute to her endeavour.

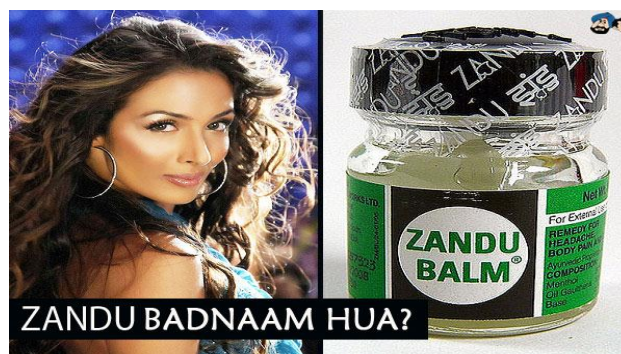
ZANDU BALM

Tag Line: Desh Ka Balm

Zandu is the only brand in India endorsed by a celebrity. The brand entered into a strategic tie up with the Mumbai Indian team in 2009-2010. Advertisement featured Sachin Tendulkar, Zaheer Khan, and Harbhajan Singh showcasing the national presence of the brand and its effectiveness against the headache, body ache and cold. The advertisement translated into attractive off take. The company roped in Virendar Sehwal, Dinesh Kartik and Amit Mishra as brand ambassadors.

Association (lifestyle, situation & personality)

Going through the series of different zandu commercials at different time frames, one can easily make out that zandu adopted different appeals & narrative styles. Started with focus on women (mother) as can be seen in the above advertisement, moved on with a lot of celebrity endorsement by popular sportspersons to target upon the physically active youths. The latest commercials use endorsement by popular female movie star to become popular amongst the youth population.



Source: http://www.badaparda.net/v15/forum_posts.asp?TID=10267

Metaphor & storytelling (narrative)

In order to target the emerging young India- the next gen the product story has been interspersed in the foot tapping number, 'Mai Zandu Balm Hui, darling Tere Liye' has not eased to amaze people and this new TVC will keep the favor of the song alive. The commercial shot in a snazzy

set up despite the goodness of this more than 100 years old brand. The advertisement leverages on the concept of how the trusted Ayurvedic pain relieving rub brings desired relief from headache, cold and body ache in no time.



Source: <http://www.youtube.com/watch?v=x2NsKLCBZcs>

Aesthetics (colours & symbols)

By roping in the youth icon Mallaika Arora & using popular bollywood song as a jingle, the commercial to establish an instant connect with the youth population and leave a feel-good aftermath. The important point that needs to be highlighted is the use of a female endorser & change in the appeal & narrative style. With Munni dancing to Zandu balm consumer will enjoy the film and the campaign will evoke strong response. The TVC will not only effectively promote the brand but also help in increasing the number of young buyer for the product.

MOOV

Tag Line: “Janani”

Association (lifestyle, situation & personality)

I am a child, I am a mother—This is the kind of association that which moov tries to establish throughout its commercials. The campaign portrays women in all their roles, multitasking a lot activities, but not compromising on the little impulsive pleasures of life. Moov helps them in fulfilling their desires not letting the pain to overpower their free spirits.

Metaphor & storytelling (narrative)

The full edit ad opens on the shot of a woman, stealthily taking her husband’s bike keys so that she can take her daughter to school on her husband’s bike. In another instance, while returning from shopping for veggies, a woman tackles the cricket ball that just has been thwacked by a group of boys playing on the street.





Source: <http://www.youtube.com/watch?v=tz7T49bsWWQ>

Many other such moments, where a woman gives to her instincts have been captured. In the final instance, she is one among the many kids who are trying to retrieve something that is on a height and during the lunge she hurts her back. The ad ends with the woman's husband applying moov to ease her back.

Aesthetics (colours & symbols)

The largest campaign is titled “**Janani**” which stands for the giver of life- a woman. The idea is to connect an emotional connect with the core consumer by showing women from various age groups giving into their inner child. The woman in the new commercial acts impulsively giving into their desire. The message of the ad is ‘*you can do whatever you desire without body coming in between*’. The commercial gives a lively & cheerful feel.

3. CONCLUSION

With increasing gender diversity in the workforce during the last few decades, females venture ahead in all the domains of life- personal as well as professional. This multitasking & stressful lifestyle takes a toll on their physical wellbeing which finds its manifestation in the form of various ailments. Full understanding this transition & gauging its long-term implications, all the analgesic dermaceutical players have shifted their focus towards them by means of their emotional narratives and softer appeals to capture this target audience.

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Mediating Role of Employee Job Satisfaction on the Relationship of Person-Organization-Fit and OCB

Imran Saeed (PHD Scholar IIUI Pakistan)

M.Abdullah khan Niazi (PHD Scholar IMSciences Peshawar,Pakistan)

Mussawar Shah (IMS Peshawar university Peshawar,Pakistan)

Sadia khan niazi (PHD Scholar IMSciences Peshawar,Pakistan)

M.Arif(IBMS,Pakistan)

Hina Gul(IBMS,Pakistan)

ABSTRACT

This study is conducted in public and private sector of Pakistan. It contains three variables i.e. Person organization fit, employee job satisfaction and organization citizenship behavior. The study find three direct relationships and one mediating relationship. All the direct relationships are significantly related with each other and the mediating variable shows partial relationship. The main purpose of this study is to find mediating role of employee job satisfaction between P-O-F and OCB. A more participative study can add more effective results, as well as concrete focus on one sector either public or private, can give a closer picture. Employee response should be increased by enhancing the level of trust for research data usage in academic purpose only.

Key words: Person organization fit. Job satisfaction; organization citizenship behavior

1. INTRODUCTION

In prior literature researchers from organizational behavior and organizational psychology have broadly worked on levels of person-environment fit like (P-J-F and P-O-F) (Judge & Cable, 1997; Kristof-Brown, 2000). As research shows that fit is the most famous research area of psychology (Holland, 1997), social psychology (Aronoff & Wilson, 1985) and organizational behavior (Schneider, 2001). Thus scholars from the areas of organizational behavior and psychology have explored their studies regarding to fit between individual, or in group level with their related environment in which they working (Kristof-Brown et al., 2002). So the concept of fit closely related to some management theories like, the attraction-selection-attrition (Schneider, 1987), need-press theory (Murray, 1938), Interaction theory (Lewin, 1951) and vocational behavior theory (Holland, 1973).

The areas of organizational citizenship behavior (OCB) maintain to create attention in practitioners and researchers. This interest is justified with the fact that OCB has a strong connection with employee's performance (Netemeyer et al., 1997; Organ, 1988; Podsakoff et al., 1996). Experimental confirmation of relationship between OCB and measures of individual and organizational performance have find in different areas of business. (Barksdale and Werner, 2001; MacKenzie et al., 1993;Podsakoff and MacKenzie, 1994).

In general human resource contentment is considered as a many angled picture. In earlier literature due to numerous consistent scales to measure satisfaction on various dimensions (e.g. Bettencourt & Brown, 1997; Hoffman & Ingram, 1992; Homburg & Stock, 2000). Some factors are supposed to be the most valuable for work force as compare to others. The mainly momentous and critically discussed works in this area is Herzberg's (Herzberg, Mausner, &



Snyderman, 1959) two-factor theory of motivation. It clarifies the difference between factors that can increase job satisfaction (“motivators”) in opposition to those that can prevent dissatisfaction but do not lead to satisfaction (“hygiene factors”).

This research has multiple objectives. The first objective finds the relationship of person-organization-fit with Organizational citizenship behavior and the relationship of Employee satisfaction with OCB. The second main objective of this study is to find relationship of employee satisfaction between person-organization-fit and organizational citizenship behavior (OCB). Further this research would help in practical field of work specially in Pakistan, as previous literature have also support some of the relationship, but here we want to explore the mediation effect of employee satisfaction between the relationship of person-organization-fit and OCB. It would help manager of any organization in Pakistan that how OCB will increase if there is good person-organization-fit and employee satisfaction.

2. LITERATURE REVIEW

Person-Organization-Fit

Generally person-organization fit can defined that it is the compatibility between person and organization. While person-organization fit does not have appropriate, specific and complete definition as other fit constructs like (e.g. P-J-F and PV fit) have been defined. So the concept of P-O-fit varies in different research areas and it depends on research orientations. Generally studies adopted a broader perspective to define person-organization fit; therefore it covers compatibility in different aspects between individual and organization.

So in view of this broader perspective, prior research assumed several conceptualizations for P-O-F, including value congruence, goal congruence, personality congruence, needs-supplies fit and demand-abilities fit. This inconsistency of missing clearness and determining the degree and level of congruence created problems in defining P-O-F (Kristof, 1996; Rynes & Gerhart, 1990). Though P-O-F is conceptualized in different ways, broadly it can be defined as “the compatibility between the people and organizations that occurs when at least one entity provides what the other needs or they share similar fundamental characteristics or both” (Kristof, 1996, p. 4). So on the basis of this broader perspective to define P-O-F covers socialization process, organizational level phenomena and employee behaviors.

In view of this situation organization have greater value than job requirement. Organizations have their stable position with their value while job requirements are varied with time. Hence, organizations having workforce which have similarities with organizational values, it can improve work in organizational change, reformation and downsizing (Bowen et al., 1991; Werbel and Gilliland, 1999).

Employee Satisfaction

From the last two decades employee satisfaction has become serious matter. Management concepts like Balanced Scorecard, Total Quality Management, Intangible Assets Navigator, etc. Underline its role as a driver of firm success. The concept of balanced scorecard a causal association between learning and innovation, Internal Business Perspective, Customer and Financial Performance (Kaplan & Norton, 1996). In past the studies conducted by (Pavesic and Brymer, 1990 and Bartlett et al., 1999) have observed individuals or organizational level antecedents completely, whereas a lot of researches recommend that individual factors play an important role for the satisfaction level of an employee as well as organizational factor also effect in this regard. (Kristof, 1996).

Organizational Citizenship Behavior

For the very first time the concept of organizational citizenship behavior was introduced by Smith, Organ, and Near (1983), according to the concept of OCB it is referred to as the extra roles and behavior which performed by employees other their job responsibility for the purpose of to contribute in the progress of an organization. The initiative thought of organizational citizenship behavior was resulting from Katz’s (1964) at that consider the origin of extra-role behavior, the idea of organizational citizenship behavior was first define by Organ (1977), an action that is “discretionary”, not clearly or directly recognized by the appropriate reward system, and completely promote the well-organized accomplishment of the

organization Organ(1988). OCB depicts person's actions that is optional, not directly or explicitly known by the proper compensation structure, and in the cumulative stimulates the efficient and effective execution of the business entity" (Organ, 1988, p. 4). These behaviors smoothen the common equipment of the business concern, arrange the liveness required to job during numerous unpredicted incidents, and aid human resources in a business deal with the otherwise tremendous circumstance of reliance on each other. (Smith et al., 1983, p. 654). In prior literature scholars have recognized helpful impact of organizational citizenship behavior on the success of an organization (Chen, Hui, & Sego, 1998; Karambayya, 1989). Some researchers defined the concept of organizational citizenship behavior in the field of psychology and in management that it has great contribution in this area (Bolino et al., 2002, Bateman and Organ, 1983; Bergeron, 2007).

Relationship between Employee Job Satisfaction and Person Organization Fit

P-O-Fit is often mainly operationalized as value congruence (Cable and Judge, 1996, 1997, and Vandenberghe, 1999). It is needed to restate that there are different methods for measuring value congruence or Person organization fit, as direct or in some indirect way. So according to this, direct person organization fit asks employee opinion as their any fit can exist between their values and those of the organization.

One of the study which was conducted in hospital industry, the result of this study strongly support that P-O-Fit has strong positive influence on employee satisfaction and their behavior intentions (Mustafa T, and A.L. Bart Bartlett, 2002). So a number of studies defined that higher level of P-O-Fit is correlated with number of employee job satisfaction (Boxx et al., 1991; Bretz & Judge, 1994 and Chatman, 1991).

H1: P-O-fit will be positively related to Employee satisfaction

Relationship between P-O-Fit and OCB

The word "person-organization fit (PO-fit)" explain the relationship between a person and organizational goals; preferences or needs of an individual and organizational systems or structures; and personality of an individual and different organizational climate (Kristof, 1996). OCB is the extra-role performance which received greater attention in the area of marketing (Mackenzie et al., 1993, 1998 and Podsakoff & Mackenzie, 1994) and the same in greater contribution in the area of management Bateman & Organ, (1983) and Organ & Ryan, (1995).

According to (Cable & DeRue, 2002; Cable & Parsons, 2001), P-O-Fit talk about employee beliefs and how their personal values match with the organizational culture. Prior literature defined that more individual fit into their organization, and then on the other hand the more positive work-related outcomes will be achieved (Lovelace & Rosen, 1996). In past few studies which was related to fit and OCB relationship, and find that P-O-Fit have strong relationship with organizational-Level outcomes like OCB than job level outcomes (e.g, task performance) (Kristof, 1996).

H2: P-O-Fit will be positively related to Organizational Citizenship Behavior (OCB)

Relationship between Employee Satisfaction and OCB

In the area of organizational behavior the term OCB as defined, a set of supportive, discretionary and extra-role behaviors shown by employee which is not clearly or directly familiar by the proper reward system and it have an overall positive effect on the process of the organization; and it have no relationship with the employment contract Organ (1988). Organ and Ryan's (1995) have conducted meta-analysis of 55 studies and find that those employees' job attitudes; like employee job satisfaction and organizational commitment can predict OCB better than dispositional variables. According to the prior literature there is significant support for the association between OCB and employee job satisfaction (Bateman & Organ, 1983; Williams & Anderson, 1991; Schappe, 1998; Ngunia, Slegers & Denessen, 2006). So on behalf of the prior literature we suggest that there would be significance relationship between OCB and employee job satisfaction.

H3: Employee satisfaction will be positively related to OCB

Mediation of Employee Satisfaction

As prior literature finds the relationship between P-O-F with Employee Job Satisfaction and OCB, so here in this study the main focus will be to find out the mediation relationship between P-O-F and OCB, here Employee Job Satisfaction shows the Mediating relationship.

H4: Employee satisfaction will mediate the relationship between P-O-Fit and OCB

METHODOLOGY

Measures

This study used previously developed and validated measured, frequently used to quantify the variables. Questionnaires were formatted in English language as respondents were well educated and were university graduates. They can easily understand English. During data collection none of them reported any difficulty regarding language. Data were collected in many private and public sector organization e.g, Interloop ltd Faisal Abad, Masood Textile Mills Faisal Abad, Bismallah Textile Faisal Abad, Virtual University, FFC, Ufone and Coca-Cola Beverages.

Person-Organization Fit

Person Organization Fit will be measured through Judge's scale (Judge, 1996) which has three items. The item of the scale will be "I feel that my values "match" or fit this organization and the current employees in this organization", "My values match those of the current employees in this organization.", and "I think the values and "personality" of this organization reflect my own values and personality". "Reponses of these items will be taken on 5-point likert-scale ranging from 1 = strongly disagree, 3, neutral though 5 = strongly agree.

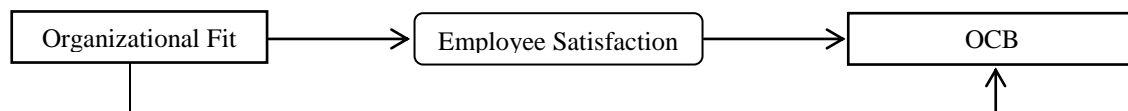
Employee Job Satisfaction

The Employee job Satisfaction will be measured through six items scale developed by (Agho, Price, & Mueller, 1992). The samples of the items are including "I am satisfied with my present job", "I find real enjoyment in my work", and "most days I am enthusiastic about my wok". "To obtain responses a 5-point likert-scale will be used, the range of the likert-scale will be from 1 = strongly disagree, to 5 = strongly agree.

Organizational citizenship behavior

The third variable is organizational citizenship behavior for this we will use 19-item scale which was developed by Moorman and Blakely (1995), the alpha reliability which was measured by Moorman and Blakely (1995) is from .67 to .86. The sample of items included in questionnaire was "Goes out of his/her way to help co-workers with work-related problems" and "Actively promotes the organization's products and services to potential users". The alpha reliability which I have found in this study is (0.73).

Theoretical Framework



DATA ANALYSIS AND FINDINGS

In Analysis of data the researchers tried to transform and model the data with the goal of highlighting useful information suggesting conclusions, regarding organizational behavior in Pakistani context. The statistical tools and software like MS Excel and SPSS is used for the analysis of data. The analysis is subdivided in to different parts with respect to the explanatory variables.

Demographics

The present study does not include the demographics to be studied in the relation to organizational behavior. The objective of demographics table is to provide an overview of the composition of the sample so as to have a better perspective about their responses and to obtain better understanding of the results drawn.

Table 1 Gender Demographic

	Male	Female	Total
Frequency	225	78	303
% age	74.3	25.7	100.0

The results shows that there were 225 male respondents making 74.3 percent of total sample and 78 were females which represent the 25.7 % of sample.

Table 2 Ages Demographic

	18-25	26~35	36~50	Over 51	Total
Frequency	99	184	16	4	303
% age	32.7	60.7	5.3	1.3	100.0

Most of the respondents (60%) are aging 26 to 35 years which expressing professionalism extent among respondents, 32.7 % is the second majority with ages 18 to 25 years.

Table 3 Education Demographic

	Matriculation	Intermediate	Graduation	Post Graduation	Above Post Graduation	Total
Frequency	23	24	40	185	31	303
% age	7.6	7.9	13.2	61.1	10.2	100.0

Results are obvious that 61% of respondents are post graduates where as 13% are graduates. Both of these segments comprise 74% of sample.

Table 4 Tenure with Current organization

	1 year or less	2~5 years	6~10 years	More than 10 years	Total
Frequency	91	165	38	9	303
% age	30	54.5	12.5	3	100.0

Most of the employees (55%) are mid career professionals (2 to 5 years experience); where as entry level employees are contributing 30% of the sample.

Table 5 Total Professional Experience

	1 year or less	2~5 years	6~10 years	More than 10 years	Total
Frequency	50	175	48	30	303
% age	16.5	57.8	15.8	9.9	100.0

Most of the employees (58%) are mid career professionals (2 to 5 years experience); where as entry level employees are contributing 17% of the sample.

Table 6 Job Nature

	Field work	Office work	Technical	Staff	Managerial	Total
Frequency	4	209	25	41	24	303
% age	1.3	69.0	8.3	13.5	7.9	100.0

Data shows that majority of employees (69%) are doing office work while 14% employees are staff.

Correlations

Table 7 Correlation Analysis

		OCB	POF	EJS
OCB	Pearson Correlation	1	.405**	.475**
	Sig. (2-tailed)		.000	.000
POF	Pearson Correlation	.405**	1	.393**
	Sig. (2-tailed)	.000		.000
EJS	Pearson Correlation	.475**	.393**	1
	Sig. (2-tailed)	.000	.000	
**. Correlation is significant at the 0.01 level (2-tailed).				

The correlation analysis of the three variables shows that there is significant positive relationship among the variables. OCB is significant with POF and EJS with intensity of 0.405 and 0.475 respectively. POF is significantly correlated with EJS (0.393).

Regression Analysis

Relationship between OCB and EJS

Dependent Variable: OCB;

Independent variable EJS

Table 8 Regression Analysis

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.682	.142		18.884	.000
EJS	.362	.039	.475	9.361	.000

Regression Equation:

$$\text{OCB} = 2.682 + 0.362 \text{ EJS}$$

Where the value of R square is 0.225 and adjusted R Square is 0.223

Relationship between POF and EJS

Dependent Variable: POF;

Independent variables: EJS

Table 9 Regression Analysis

Coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.773	.350		2.209	.028
EJS	.707	.095	.393	7.421	.000

Regression Equation:

$$\text{POF} = 0.773 + 0.707\text{EJS}$$

Where the value of R Square is 0.155 and Adjusted R Square is 0.152. So 15 percent variation in POF are explained by EJS

Relationship between OCB and EJS

Dependent Variable: OCB; Independent variable EJS

**Table 10 Regression Analysis
Coefficients**

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.682	.142		18.884	.000
EJS	.362	.039	.475	9.361	.000

Regression Equation:

$$\text{OCB} = 2.682 + 0.362 \text{ EJS}$$

Where R square is 0.225 and Adjusted R Square is 0.223

Relationship between OCB and POF, EJS

Dependent Variable: OCB; Independent variables POF, EJS

Table 10 Regression Analysis

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.597	.138		18.809	.000
	EJS	.110	.023	.259	4.860	.028
	POF	.284	.041	.373	7.013	.000

Regression Equation:

$$\text{OCB} = 2.597 + 0.284 \text{ POF} + 0.110 \text{ EJS}$$

Mediation Explained

The relationship of the three variables (OCB, POF and EJS) describes that OCB has significant relationship with POF, but a non-significant relationship with EJS ($p = 0.028$), it favors our hypothesis that EJS has a mediating relation with OCB and POF.

Where the value of R Square is 0.282 and Adjusted R Square is 0.277

Reliability

The finding shows that reliability of EJS is 0.517 (6 items), POF with 0.868 (3 items) and OCB with 0.787 (19 items).

DISCUSSION

Current study discuss two direct relationship and one mediation relationship, there are total three variables we have in this study. One is independent variable i.e. Person-Organization-Fit and the other two is mediating variable which is Employee Satisfaction and the dependent variable is Organizational Citizenship Behavior. Here in this study we have find out the direct relationship of Person-Organization-Fit with OCB, Person-Organization-Fit with Employee Job Satisfaction and Employee Job Satisfaction with OCB. The most important part of this study is to find the mediation relationship of Employee Job Satisfaction between Person-Organization-Fit and OCB. Out of four hypotheses none of our hypothesis is rejected. Our first hypotheses find out the direct relationship between Person-Organization-Fit and

Organizational Citizenship Behavior. Our data give fully support to our first hypothesis, so the results of P-O-F and OCB are consistent with previous study (Lovelace & Rosen, 1996; and Kristof, 1996). Our second hypothesis talks about the relationship of Employee job satisfaction with OCB. The data also support this relationship which is consistent with prior studies (Bateman & Organ, 1983; Williams & Anderson, 1991; Schappe, 1998; Ngunia, Slegers & Denessen, 2006). Third hypothesis of this study is the relationship between P-O-F and Employee job satisfaction, the data also support this relationship so our results also consistent with previous studies (Mustafa T, and A.L. Bart Bartlett, 2002; and Boxx et al., 1991; Bretz & Judge, 1994 and Chatman, 1991). Our last hypothesis finds the mediation effect between P-O-F and Employee Job Satisfaction.

CONCLUSION

Employee satisfaction with organization is now a days the most important thing, while every organization wants to enhance employee satisfaction for the best possible performance that will lead organization for competitive advantage which further resulting in a better OCB. So our proposed hypothesis finds the significance results through statistical analysis. In this study our all proposed hypothesis is supported and have found significant results. Our results are consistent with previous studies which will be helpful for managers to apply such type of research in their organization to get good results which will be helpful for organization as well for employee.

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Disclosures in Share-based Payment Transactions: a Study of Italian companies in the FTSE Consumer Goods Macro-sector

Elisa Giacosa

Assistant Professor
University of Turin
Italy

Alberto Mazzoleni

Assistant Professor
University of Brescia
Italy

ABSTRACT

The aim of this research is to analyse the level and nature of mandatory corporate disclosures according to the requirements of the International Financial Reporting Standards (IFRS) 2 “Share-based Payment”. In addition, it examines the application of IFRS 2 (in regards to disclosures) to the consolidated financial statements (2010) of companies listed in the FTSE consumer goods macrosector of the Italian Stock Exchange, with the purpose to quantify the extent of these disclosures. The research was conducted under multiple profiles: the theoretical, which aims to analyse the existing literature on share-based payment transactions, with particular reference to the disclosures required by IFRS 2; the empirical, which aims to verify the presence of the disclosures in the financial statements of the companies in the sample; and the communicative, which aims to quantify the extent of these disclosures. The approach shared in this study takes inspiration from the basic principles of grounded theory. The minimal informational content required by IFRS 2 is quite analytic and complete, with regard to both the characteristics of share-based payment transactions as well as their influence on the company’s financial situation. The application of appropriate disclosure indices permits the summing up of the extent of the disclosures present in the sample financial statements. The implications of the present study can have both theoretic and practical value.



1. INTRODUCTION

The aim of this research is to analyse the level and nature of mandatory corporate disclosures according to the requirements of the International Financial Reporting Standards (IFRS) 2 “Share-based Payment”, in terms of reducing the information asymmetry between stakeholders and members of the corporation.

In addition, it examines the application of IFRS 2 (in regards to disclosures) to the consolidated financial statements (2010) of companies listed in the FTSE consumer goods macrosector of the

Italian Stock Exchange. The quantification of the extent of these disclosures in financial statements took place at two linked moments:

- Analytic results were elaborated, based on the presence of data categories researched in the financial statements of the sample;
- Disclosure indicators were applied to these results in order to produce concise conclusions regarding the extent of disclosures present in the sample.

This is a matter of particular interest, as the disclosures help to identify the firm's decisions with regards to the communication of performance, in terms of transparency and completeness. Moreover, the disclosures of the consolidated financial statements help reduce information anomalies for external parties. IFRS 2 has been chosen as the subject of the research due to the growing importance of the topic of stock options in national and international scientific literature and the widespread adoption of stock options plans by the companies.

2. LITERATURE REVIEW

Much of the existing literature on the topic has focused on aspects of “share-based payment transactions” (Wolff, 2003; Bodie, Kaplan & Merton, 2003; Corbella, 2004; Wheeler, 2004; Bozzi, 2006; Kocan, 2009; Giacosa, 2010). A “share-based payment transaction” is a supply of goods and services (including managers' and employees' activities) for which payment is made via one of the following methods:

- assignment of shares or other assets (such as stock options) representing the entity's equity or the equity of other companies in the group;
- cash settlement, where the liability is indexed according to trends in the fair value of shares or other assets representing the entity's equity or the equity of other companies in the group

Examples of share-based payment transactions are: the creation of a stock option plan for employees, by which part of the salary is paid in equivalent value of company shares or company stock options; the granting of shares or stock options to managers if, over a set period of time, they help to generate company income by a predetermined amount. The purpose of share-based payment transactions is to motivate staff to maintain high performance levels (Blasi & Kruse, 1991; Baker, Jensen, & Murphy, 1988; Hall, 2000; Sesil, Kruse, & Blasi, 2001), to attract the best personnel (Milgrom & Roberts, 1992; Core & Guay, 2001; Sahlman, 2002; Oyer & Schaefer, 2005; Melis, Carta, & Gaia, 2010), to retain them (Jeffrey & Kleiner, 2004), to keep control of the results achieved (Jensen & Meckling, 1976; Eisenhardt, 1988) and to encourage managers to set about creating value for stakeholders in the medium/long term (Melis et al., 2010). In addition, with specific reference to employees, a stock option plan can increase staff loyalty in enterprise (Bertoni, 2002)

The literature on the incentivisation mechanisms for personnel and managers is quite rich. It takes into consideration the possibility of linking a variable part of their salary with the company performance or of remunerating a part of the work activity with shares or other means that are representative of the company or of other companies in the group (among others, Zanda, 1984; Jensen & Murphy, 1990a; Jensen & Murphy, 1990b; Airoldi & Zattoni, 2001; Di Pietra & Riccaboni, 2001; Murphy, 2003; Muurling & Lehnert, 2004; Cheng & Warfield, 2005; Kumpulainen, 2010).

Through incentivisation mechanisms, the conduct of managers begins to resemble that of the company's owners, since the managerial body tends to act with the owners' mentality. Therefore, the incentives are used to solve the problems described by the agency theory (Spence &

Zeckhauser, 1971; Ross, 1973; Jensen & Meckling, 1976; Fama & Jensen, 1983; Grossman & Hart, 1983; Levinthal, 1988; Eisenhardt, 1988; Sesil, Kroumova, Kruse, & Blasi, 2005; Tosi, 2008), as the managers or employees are encouraged to adopt a mindset that is similar to that of the company owner (Jensen & Murphy, 1990b; Zattoni, 2003; Tosi, 2008; Di Carlo, 2009). Each incentive plan must be a relationship between the remuneration ascribed to the manager or the employee and their performance (Baker, Jensen, & Murphy, 1998), encouraging in particular the creation of value in the medium/long term (Zattoni, 2003). Recipients of these plans are encouraged to act either in response to the possibility of a positive outcome or the threat of negative consequences (Anthony, Hawkins, Macri, & Merchant, 2001). It tends to discourage opportunistic attitudes of management or employees that they can force one growth market price of shares in the short term, at the expense of value creation in the medium/long term (Zattoni, 2003). In this regard, the literature highlights the possibility of managers showing particular interest to the fluctuations of the firm's share price and giving less attention to the quality of the managerial and strategic decisions with an eye to the medium/long term (Jeffrey & Kleiner, 2004).

Such performance incentives and means of encouraging company loyalty of personnel, managers and other parties can be classified as follows:

- *Stock options*: granting the party a right to purchase a quota of the company's capital (or the equity of other companies in the group) at a fixed price (strike price) within a fixed period of time (Smith, 1996; Weeden, Carberry, & Rodrick, 1998; Moyer & Weihrich, 2000; Meo, 2000; Curtis, 2001; Kaplan & Palepu, 2003; Mun, 2004; Delves, 2004; Burns, 2009; Friedentag, 2009; Bagna, Bini, Bird, Momentè, & Reggiani, 2010; Olagues & Summa, 2010; Quagli, Avallone, & Ramassa, 2006). This right can be made conditional on the accomplishment of determined events (e.g. achieving a professional objective). The option holder may choose to exercise the option only if the share price at the time when the option comes into effect is higher than the strike price provided by the right itself. In addition to a fixed salary, a manager's remuneration may include not only some stock options, but also an annual bonus and a series of incentives resulting from a medium-/long-term plan (Murphy, 1999). The company that adopts the stock option method, in fact, pays according to the performance of managers and employees: the main purpose is to focus the latter's attention on achieving the medium-/long-term performance goals, thus linking their reward with the company's performance (Hall, 2000);

- *Stock grant*: a plan in which, at a future date, the counterparty receives a predetermined amount of shares free of charge (Zattoni, 2001; Wheeler, 2004; Ciampaglia, 2007). The stock grant plan is a type of stock option for which the cost to the company is close to zero.

There are two classifications of subjects eligible for a stock option plan or a stock grant plan:

- managers and employees (including consultants, agents, freelance collaborators);
- suppliers of goods and services.

The literature analyzes three different kinds of share-based payment transactions set out in IFRS 2 (PricewaterhouseCoopers, 2005; Avallone & Ramassa, 2006; Quagli, 2006; Epstein, Mirza, & Walton, 2006; Mirza, Holt, & Orrell 2007; Ciampaglia, 2007; Melis et al., 2010; Mirza, Holt, & Knorr, 2011):

- *"Equity-settled share-based payment transactions"*: after purchasing either goods or services (including managers' and employees' activities), the entity grants to the counterparty shares or other assets (such as stock options) of its equity or the equity of another company in the group. Alternatively, the obligation towards the counterparty is settled by another group company. Stock options may represent alternatives to cash payment for a supply of goods or services, especially in a situation of financial tensions.

- “*Cash-settled share-based payment transactions*”: liabilities resulting from the supply of either goods or services are indexed according to trends in the fair value of shares or other assets representing the entity's equity or the equity of another company in the group. Such debt is settled in cash at the end of the term. Therefore, *cash-settled share-based payment transactions* differ from *equity-settled share-based payment transactions*: in the *cash-settled share-based payment transactions*, liabilities are cash-settled at the end of the term, but they are paid according to trends in the fair value of shares or other assets of the entity's equity or the equity of another group company. In *equity-settled share-based payment transactions*, on the other hand, the entity grants to the counterparty shares or other assets of the company equity or the equity of another group company.
- “*Share-based payment transactions with cash alternative*”: after receiving goods or services, one of the contracting parties (either the entity or its counterparty, based on contractual agreements) can choose whether to settle in shares or other assets of the entity's equity or the equity of other group company at the end of the term (according to the procedures of *equity-settled share-based payment transactions*) or in cash (according to the procedures of *cash-settled share-based payment transactions*).

It should be noted that the various types of transactions have different accounting methods (Giacosa, 2010; Melis et al., 2010):

- on the one hand, they both register an operating cost in the Income Statement regarding the provision of goods or services (provided that this cannot be listed as a company asset);
- on the other, an increase in shareholders' equity (as a reserve) (in the case of a “equity-settled share-based payment transaction”) or by a debt (in the case of a “cash-settled share-based payment transaction”).

Furthermore, the various kinds of transactions have different evaluation methods (Giacosa, 2010; Melis et al., 2010):

- in “*equity-settled share-based payment transactions*”, the provision of goods or services received is evaluated according to the fair value of the goods or services, as calculated on the date of the agreement among the parties (the grant date), if such an evaluation can be performed reliably. If this is not possible, the company refers to the fair value of the shares or others financial instruments representing capital that were assigned to the other party, as calculated on the grant date;
- in “*cash-settled share-based payment transactions*”, the debt incurred at the moment of providing the goods or services is valued on each closing date of the fiscal period and at the date of its payment, since the debt is indexed at the fair value of the company shares and of those of other companies in the group.

The literature analyses disclosures of consolidated financial statements set out in IFRS 2, with the aim of shedding light on the nature and extent of the share-based payment transactions from the relevant financial period (PricewaterhouseCoopers, 2005; Epstein et al., 2006; Bozzi, 2006; Grant & Conlon, 2006; Mirza et al., 2007; Di Carlo, 2009; Melis et al., 2010; Mirza et al., 2011). The disclosures are an essential part of a rational decision-making process. With this in mind, the addressees of the report must know how the report was produced; furthermore, an information-sharing process among the interested parties must be put in place (Di Pietra, 2005 (b)). The extent of the disclosures is greater in relation to how much information pertaining to financial performance is communicated by the company to third parties (Lang & Lundholdm, 1993).

The informational asymmetry (Sabovic, Miletic, & Sabovic, 2010) between the company and its stakeholders is a well-known phenomenon. The complete disclosures may reduce the information anomalies for external parties (Melis & Carta, 2010) and improve the relationship of trust between the company and its stakeholders (Eccles, Herz, Keegan, & Philips 2001). Disclosures

can be improved through the use of Internet as a tool for dissemination (Salvioni & Teodori, 2003; Quagli & Teodori, 2005). Disclosures may facilitate an efficient and effective economic-financial communication, which could increase the company's credibility (Coda, 1991; Corvi, 1997).

The act of disclosure of financial statements increases in importance when the company enters the global market: indeed, a company needs to adopt a broad and well-articulated communication strategy, capable of maintaining a strong relationship with all of its stakeholders (Foster, 1986; Weetman, 1999). The company therefore needs a diligent and comprehensive communication strategy, both internally (Meigs, Williams, Haka, & Bettner, 2001) and in regard to its stakeholders (Weetman, 1999).

Companies have to present transparent financial reports so that comparisons can be drawn from a spatial and temporal perspective (Pezzani, 1993). This is of fundamental importance when the company needs to turn to the capital markets (Bevis, 1965; Choi, 1973), either in Italy or abroad, for which they must produce a series of documentation relating to the company's state of health and credit rating. From this perspective, accounting rules are a key framework for reporting company activity. These common reporting rules are imposed by the International Accounting Standards (IAS) and the International Accounting Reporting Standards (IFRS). The process of accounting standardisation, one of the tasks of international accounting (Viganò, 1991), permits information to be produced that is intelligible to all addressees, independent of their geographic provenance (Di Pietra, 2005 (b)). The process of expanding the disclosures is one of the new elements brought about by the introduction of the international accounting principles (Azzali, 2002; Bruni, 2007; Caldarelli, 2008; Di Carlo, 2009).

The financial statement represents one of the main tools for communicating the financial performance. It is not only a means of demonstrating how the company is performing (Weetman, 1999; Meigs et al., 2001), but is, above all, a tool to facilitate decision-making for stakeholders (Baginski & Hassell, 2004; Helfert, 2004). The financial statement has increasingly become the main platform for presenting company information to external parties (Salvioni & Teodori, 2003; Salvioni, 2002) with an ever-growing degree of transparency. It thus becomes crucial that this communication be based on rules designed to report the profit, loss and financial condition of the company, in a context of internationalisation (Pepe, 1984; Di Pietra, 2005(a)). The financial statement is the “fulcrum” of the company's external information system and it represents the main disclosures “vehicle” (Marston & Shrives, 1991; Capaldo, 1998; Bassett, Kho, & Tutticci, 2007): it holds key information about the company for external parties to review and forms the basis of the majority of judgements about the company's performance (Chang et al., 1983; Fiori, 2003).

3. HYPOTHESES DEVELOPMENT

The aim of this research is to analyse the level and nature of disclosures made by companies as required by IFRS 2 “Share-based Payment”. In addition, it examines the application of IFRS 2 (with reference to disclosures) to consolidated financial statements (2010) of companies listed in the FTSE consumer goods macrosector of the Italian Stock Market.

In order to meet the research objectives, the study focuses around the following core research questions:

- RQ1: what are the disclosures required by IFRS 2 to facilitate true and correct reporting of the company's situation?

- RQ2: is it possible to quantify the extent of these disclosures in the consolidated financial statements of the sample?
- RQ3: are there some cases in which the disclosures are particularly representative, thanks to a level of reporting that goes beyond the minimum requirements set out by IFRS 2?

On the basis of these research questions, the following hypotheses have been developed:

H1: The minimum information required by IFRS 2 regarding the disclosures is quite analytic, complete and well articulated, both with regard to the characteristics of the share-based payment transactions as well as their impact on the economic-financial situation of the company. It favours a clear and complete understanding of accounting by the reader of the financial statement. H1 is paired with RQ1.

H2: The extent of these disclosures in the consolidated financial statements of the sample may be quantified by unweighted and weighted indices, achieving a near homogeneity of the results obtained. H2 is paired with RQ2.

H3: Given the completeness and extent of the minimum amount of information required by IFRS 2, most disclosures do not exceed them. H3 is paired with RQ3.

4. DATA AND METHODOLOGY

The research was conducted under multiple “profiles”: the theoretical, which aims to analyse the existing literature on share-based payment transactions, with particular reference to the disclosures required by IFRS 2; the empirical, which aims to verify the presence of the disclosures in the financial statements of the companies in the sample; and the communicative, which aims analyse the extent of these disclosures.

The research is characterised by a multidisciplinary-based approach; indeed, around the subject of investigation there is a plethora of previous studies done both by scholars of accounting, those studying the evaluation of financial instruments and also by psychologists in relation to the incentivisation of personnel. Consistent with the objectives of this research, the emphasis is on empirical research.

The research was organised into the following phases:

- Phase 1: analysis of IFRS 2 content on disclosures and an in-depth study of the existing national and international literature on the subject.
- Phase 2: identification of the research methodology and of the variable to be analysed. The goal was to create a “reference model” to apply to the sample, having as its subject the disclosures required by IFRS 2. This model directed the successive steps of the research, bringing about the identification of meaningful research questions and a suitable research mechanism. This phase is discussed in more detail below.
- Phase 3: empirical application of the “reference model” elaborated in Phase 2 to the financial statements (2010) of the sample. The sample is composed of all 45 Italian private companies listed in the FTSE of the Italian Stock Market operating in the consumer goods macrosector (a list of companies included in the sample is in Appendix 1). The FTSE index is divided into the different macrosectors of commercial, financial and industrial activity: among these macrosectors, there is the consumer goods macrosector (referring to food sector, automotive and components sector, products for home and person and fashion sector). The number of the companies of the sample

represents about 25 per cent of all the listed non financial companies of the Italian Stock Market. The capitalisation on the stock exchange of the 45 sample companies represents 14 per cent of the capitalisation of all the listed non financial companies of the Italian Stock Market (as of 30 November 2011, www.borsaitaliana.it). There were no interviews with the companies of the sample, since the only document under analysis within the scope of this study is the financial statement. This phase included the collection of information from the Directors' Report and the Notes to the Consolidated Financial Statement. In addition, the guidelines used by those companies for which the disclosure practices are particularly representative were identified, due to a standard of reporting that goes beyond the minimum required by IFRS 2.

- Phase 4: elaboration of the data relevant for achieving the results of the study. This phase was articulated in two different, but related moments: first, analytic results derived from the presence of the research information categories were elaborated; secondly, concise results were produced, thanks to the application of the disclosure indicators to the analytic results.

Below is an in-depth look at Phase 2, in which the objective was to create a "reference model" to apply to the sample, having as its subject the disclosures required by IFRS 2. The steps followed in this phase were as follows:

- 1) Identification of meaningful research questions to act as the main theme of the research.
- 2) Identification of a series of "informational categories" or "informational variables" (Krippendorff, 1980; Patton, 1987) required by IFRS 2 on the subject of disclosures: such categories represent the minimum content of the disclosures required by IFRS 2 identified in Phase 1. There are a total of six of these informational categories (identified in section 5.1). Each of these informational categories constitute an informational variable in the research.
- 3) Creation of a disclosure scoring sheet in which the data that emerges in the empirical phase is recorded. The rules for recording each datum connected with each of the informational categories were fixed.
- 4) Creation of two indices of disclosure scoring systems (Choi, 1973; Robb, Single, & Zarzeski, 2001; Vanstraelen, Zarzeski, & Robb 2003; Beattie, McInnes, & Fearnley, 2004; Prencipe, 2004; Satantoputra, 2009), that permit to measure the extent and the level of the disclosures present in the financial statements (Choi, 1973; Ahmed & Courtis, 1999; Ball & Foster, 1982). Some of the literature highlights the impossibility of directly measuring the disclosures of the financial statement, since they are abstract in nature (Marston & Shrives, 1991). Nonetheless, the use of the indicators of a disclosure scoring system is useful in the context of an empirical study, since it allows the extent of disclosures to be measured, albeit in an indirect and often subjective manner (Melis & Carta, 2010). This has been demonstrated in previous studies about economic-financial performance (Gray, Kouhy & Lavers, 1995; Beretta & Bozzolan, 2004; Alsaeed, 2006; Hossain, 2008). The risk of subjectivity in the selection of the variables that make up the index can be mitigated by choosing variables in relation to regulations: consequently, in this search index, variables are represented by the information required by IFRS 2 (Melis et al., 2010). Research by means of indicators from a *disclosure scoring system* is among the research methodologies of the so-called *content analysis* (Berelson, 1952; Woods & Catanzaro, 1988; Polit & Hungler, 1999; Krippendorff, 2004; Graneheim & Lundman, 2004) also used in studies of financial performance reporting. In the present study, the following types of indicators were used:
 - a) an unweighted index: in this all of the variables that make up the indicator have the same weight. A score of 1 is assigned to the variable when the corresponding information is present, or, alternatively, a score of 0, if the information is not present

(Cooke, 1991 and 1992; Hossain, Tan, & Adams 1994; Raffournier, 1995). This method measures the total disclosures score (TDS) of each company as follows:

$$TDS_c = \frac{1}{m} \sum_{i=1}^m d_i$$

where:

c = company considered

m = number of informational categories looked for in the disclosures (in the present study, the number of informational categories is 6)

$d_i = 1$ (if the information is present); 0 (if the information is not present)

- b) an weighted index: in this the variables that make up the indicator have different weights, in relation to the importance of the information corresponding to it (Cerf, 1961; Singhvi & Desai, 1971; Buzby, 1974 and 1975, Botosan, 1997). A score greater than 0 but less than 1 is assigned to it if the information is present, and a score of 0 is assigned if the information is not present (Barrett, 1977; Marston, 1986). The variables were “weighed” in relation to their importance to the information of the financial statement and divided into the following categories:

- “Company-based” variables (CBV): these variables are defined by the company. They are more difficult to identify by third parties. They are classified according to their importance on the disclosures in the following manner: variables with medium importance (MR); variables with high importance (HR), to which a score was assigned that was double that of those of medium importance.
- “Market-based” variables (MBV): these variables are defined by the market. They are easier to identify by third parties and were therefore were given a lower score compared to the “company-based” variables.

This method measures the total disclosures score (TDS) of each company as follows:

$$TDS_c = 2/13D + 2/13EPN + 1/13SP + 2/13CL + 2/13FV + 4/13E$$

where:

c = company considered

D = description of each share-based payment transaction that existed during the period

EPN = weighted average exercise prices and number of share options for each type of option

SP = weighted average share price calculated at the date of exercise

CL = the range of exercise prices and weighted average remaining contractual life for share options existing at the end of the period

FV = the modality of valuation of the fair value of goods or services received for the new assignment of options

E = the effect of share-based payment transactions on the profit or loss and on financial position

Table I – The disclosures-scoring system in the unweighted and weighted method

The literature has shown that the use of unweighted or weighted indices concerning the disclosures of the financial statements leads to small or irrelevant differences in the results (Choi, 1973; Coombs & Tayib, 1998). Nevertheless, the literature presents various studies that employ both types of indicators (Choi, 1973; Barrett, 1976; Chow & Wong-Boren, 1987). In the present study, the choice was made to use both

indicators in order to reduce subjectivity with regards to the results produced by the research, and, at the same time, to compare the different results (Prencipe, 2004).

- 5) Pre-analysis of the research model and successive definition of a definitive reference model: the research model laid out so far was tested on a sample of 20 financial statements of the sample. This activity led to both a greater focus on the information targeted by the research and to the expansion of some aspects of the original reference model. In this way, a “definitive reference model” was established.
- 6) Identification of three research hypotheses, according to the literature and to the research questions.

The approach used in this research is inspired by the grounded theory (Glaser & Strauss, 1967; Corbetta, 2005). According to this theory, observation and theorisation proceed side by side, engaged in a circular process:

- the theory is formalised in successive stages through the analysis of the information acquired;
- the theory continuously influences the methods of data collection through codification activity typical of the model.

5. RESEARCH FINDINGS

The main results produced by the research are detailed below and can be broadly summarized as follows:

- the disclosures required by IFRS 2 (according to RQ1);
- how disclosures are reported in the sample (according to RQ2 and RQ3).

5.1 *The disclosures required by IFRS 2*

To answer RQ1—what are the disclosures required by IFRS 2 to facilitate true and correct reporting of the company’s situation—the disclosures required by IFRS 2 are set out below. These disclosures include both qualitative and quantitative information about the share-based payment transactions plans, and require indications regarding the kind of accounting treatment of these transactions. IFRS 2 stipulates the need to report the following minimum information, which must be further integrated in order to guarantee that the users of the financial statement fully comprehend it (IFRS 2, paras 44–52):

- A description of each share-based payment transaction that existed during the period, indicating also the general terms and conditions of each agreement (the vesting requirements, the maximum term of options granted and the method of settlement).
- The weighted average exercise prices and number of share options for each type of option:
 - outstanding at the start of the period;
 - granted during the period;
 - forfeited during the period;
 - exercised during the period;
 - expired during the period;
 - outstanding at the end of the period;
 - exercisable at the end of the period.
- Where options are exercised by the beneficiaries during the period: their weighted average share price calculated at the date of exercise.
- For share options existing at the end of the period: the range of exercise prices and weighted average remaining contractual life.

- Where the new assignment of options is granted by the company: the modality of valuation of the fair value of goods or services received (direct measurement), or the fair value of the equity instruments granted (indirect measurement).
- The effect of share-based payment transactions on the profit or loss and on financial position, including at least the following information:
 - in case of *equity-settled share-based payment transactions*: the portion of the total labour costs arising from *equity-settled share-based payment transactions*;
 - in case of *cash-settled share-based payment transactions*: the portion of the total labour costs arising from *cash settled share-based payment transactions*. In addition, according to the liabilities, the total carrying amount and the total intrinsic value at the end of the period (for example, because the right to cash is already vested at the end of the period).

The above analysis of the minimum content required by IFRS 2 demonstrates the validity of H1. In fact, the minimum information required by IFRS 2 is presented analytically and completely, both from the perspective of the characteristics of the share-based payment transactions as well as their influence on the company's economic-financial situation. It can be deduced that the production of these disclosures is a part of the process of financial communication to external parties; with it the company provides a series of significant information sources, that must be considerable from the quantitative and qualitative standpoints (Avi, 1990).

Furthermore, the IFRS 2 minimum content stipulations are exhaustive, but never redundant; in fact, the firm must not "overwhelm" the addressees with a great quantity of information, much of which will be superfluous (Viganò, 1981). It follows that the content of the financial statement examined is relevant and selective, so that the financial statement provides effective communication to the stakeholders.

5.2 The quantification of the disclosures in the sample

In 2010, the number of companies in the sample that had plans of share-based payment transactions in progress was 21, i.e. fewer than half (47 per cent) of the companies in the sample (see Table II).

Table II – The presence of share-based payment transaction plans in progress in 2010

With regard to the companies that did not have plans of share-based payment transactions in progress in 2010, more than half (54 per cent) do not provide a specific indication of this in their financial statements. Of the companies that do provide this information, it is declared most prevalently in the Directors' Report (73 per cent) (see Table III).

Table III – The indication of the absence of share-based payment transactions in the financial statements

In the scope of the present work, only the companies which did have share-based payment transactions in progress in 2010 are considered (i.e. 21 companies).

With regard to these 21 companies, most provide this information both in the Directors' Report and again in the Notes to the Consolidated Financial Statement (76 per cent); the remaining companies note the presence of share-based payment transactions in the Notes to the Consolidated Financial Statement (see Table IV).

Table IV – Indication of the presence of share-based payment transactions in the consolidated financial statements

To answer RQ2— whether it is possible to quantify the extent of these disclosures in the consolidated financial statements of the sample—the presence of the disclosures is shown. To answer RQ3—are there some cases in which the disclosures are particularly representative—the research identifies some cases in which the disclosures are particularly representative, thanks to a level of reporting that goes above and beyond the minimum content required by IFRS 2.

The principal aspects of the above-mentioned disclosures are analysed below, in order to verify whether or not the companies of the sample comply with the regulations. The measurement of the disclosures was performed in two correlated moments:

- analytic results based on the presence of the informational categories researched were elaborated;
- the disclosure indicators were applied to these analytic results in order to produce concise conclusions concerning the extent of the disclosures present in the sample.

5.2.1 The analytic quantification of the disclosures

The analytic results deriving from the presence of each informational category required by IFRS 2 on the subject of disclosures are illustrated below.

a) A description of each share-based payment transaction that existed during the period

To answer RQ2, all of the companies with share-based payment transactions plans in progress stated as much in their reports (see Table V).

Table V – Presence of a description of each type of share-based payment arrangement that existed during the period

These companies produced share-based payment transactions of the following kinds:

- *equity-settled share-based payment transactions*: 17 companies (82 per cent);
- *cash-settled share-based payment transactions*: 2 companies (9 per cent);
- *share-based payment transactions with cash alternative*: none;
- *equity-settled share-based payment transactions and cash-settled share-based payment transaction plans*: 2 companies (9 per cent).

Thus, the majority of companies that had share-based payment transaction plans in progress in 2010 chose *equity-settled share-based payment transactions* (82 per cent) (see Table VI).

Table VI – Types of share-based payment transactions

The beneficiaries of share-based payment transactions are, in general, represented by the top management, managers with strategic positions, directors, middle management and employees. In the sample considered, the range of beneficiaries was as follows:

- top management, directors and employees: 9 companies (43 per cent);
- top management and directors: 7 companies (33 per cent);
- exclusively top management: 3 companies (14 per cent);
- non-strategic directors and middle management: 1 company (5 per cent);
- directors and employees: 1 company (5 per cent).

It follows that, in most cases, the company's choice was to incentivize the top management, directors and employees (43 per cent) and to a slightly lesser extent, to incentivize only the top management and the directors (33 per cent) (see Table VII).

Table VII – Beneficiaries of the share-based payment transactions

The research verified whether or not the 2010 period was the first year with the share-based payment plan in place. In the majority of cases (86 per cent), the 2010 period was not the first year with the plan in progress (see Table VIII).

Table VIII – Was 2010 the first year of the plan?

To answer RQ3, only two consolidated financial statements provide a very in-depth account of the matter, in which disclosures are particularly representative (9 per cent) (see Table IX). Indeed, disclosures provide all the evolutionary steps of these plans during that time, the in-depth details on benefits (highlighting the differences between the various beneficiaries) and any constraints that the beneficiaries must adhere to.

Table IX – Representative disclosures

b) The weighted average exercise prices and number of share options for each type of option

To answer RQ2, all of the companies that had plans of share-based payment transactions in progress supplied this detail in the form of a table (see Table X).

Table X – Presence of the weighted average exercise prices and number of share options for each types of option

To answer RQ3, only five consolidated financial statements provide a very in-depth account of the matter, in which disclosures are particularly representative (24 per cent). Indeed, these disclosures provide a distinction between the various beneficiaries: top management, directors, middle management and employees. In addition, one consolidated financial statement provides a further distinction according to the geographical origin of the beneficiaries (beneficiaries resident or non resident in the United States) (see Table XI).

Table XI –Representative disclosures

c) Where options are exercised by the beneficiaries during the period: their weighted average share price calculated at the date of exercise

To answer RQ2, there were only six companies in which the options were exercised by the beneficiaries (29 per cent): all of which provide the weighted average share price calculated at the date of exercise. In 11 cases, no options were exercised (52 per cent). In four cases (19 per cent), options were not exercised by the beneficiaries due to the fact that the options had not been vested at that time (as at 31 December 2010) (see Table XII).

Table XII – Exercise of options by the beneficiaries during the period

With reference to RQ3, no more complete disclosures were found.

d) For share options existing at the end of the period: the range of exercise prices and weighted average remaining contractual life

To answer RQ2, almost all of the companies present a stock options plan that remain open as of 31 December 2010 (95 per cent), while only one company (5 per cent) had a stock option plan in progress that concluded at the end of this period (see Table XIII).

Table XIII – Presence of share options plan at the end of the period

Referring RQ3, no more complete disclosures were found.

e) Where the new assignment of options is granted by the company: the method used to determine the fair value of goods or services received

To answer RQ2, around half of the companies granted a new assignment of options during 2010 (48 per cent). Of these companies, each provided indications about the method of assessing the fair value of the work performances (see Table XIV).

Table XIV – New assignment of options during 2010

Referring RQ3, no more complete disclosures were found.

f) The effect of share-based payment transactions on the profit or loss and on financial position

To answer RQ2, with regards to the companies that adopt plans based on *equity-settled share-based payment transactions*, only slightly more than half provided indications about the personnel cost derived from these transactions (53 per cent). Among the latter, only two companies (22 per cent) indicate the cost deriving from equity-settled share-based payment transactions in a specific entry field among the personnel costs (for example, “costs for stock option”); the remaining companies (78 per cent) indicate the personnel cost deriving from equity-settled share-based payment transactions by recording them among the personnel costs, without using a specific entry field.

Of the companies that instead adopt plans based on *cash-settled share-based payment transactions*, all provided indications about the personnel cost derived from these transactions and the related debt (in one of these cases, the effect of the financial situation was noted among “long-term funds and other debts” and not among the debts). All of the companies indicate the personnel cost deriving from cash-settled share-based payment transactions by recording them among the personnel costs without using a specific entry field.

The two companies that have plans in progress based on both *equity-settled share-based payment transactions* and on *cash-settled share-based payment transactions*, present all of the information required for the two types of transaction (in one of these, the effect of the financial situation was noted among “long-term funds and other debts” and not among the debts). One of the two companies (50 per cent) indicates the cost deriving from share-based payment transactions in a specific entry field among the personnel costs (“costs for stock option”); the other (50 per cent) indicates the personnel cost deriving from share-based payment transactions by recording it among the personnel costs without using a specific entry field (see Table XV).

Table XV – The effect on the entity’s profit or loss and on financial position

Referring RQ3, no further complete disclosures were found.

The considerations arising, with regards to RQ3, confirm H3. In fact, given the completeness of minimum information required by IFRS 2, the presence of disclosures that go beyond the minimum requirements are not widespread.

5.2.2 The concise quantification of the disclosures

The succinct results gleaned from the application of the two disclosure indicators (unweighted and weighted) to the analytic results illustrated in section 5.2.1 are presented below (Table XVI).

Table XVI – Disclosure scores for unweighted and weighted index

The graphical representation of these results is as follows (Figure I).

Figure I – Graphical representation of these results for unweighted and weighted indexes

With reference to the unweighted index, the mean company disclosures score is about 0.936. This means that approximately 62 per cent of the companies in the sample achieved a score of 1, while 38 per cent had a score of 0.833. It follows that the median score and the mode score are about 1. With reference to weighted index, the mean company disclosures score is about 0.883. This means that approximately 62 per cent of the companies in the survey reached a score of 1, while 38 per cent had a score of 0.692. It follows that the median score and the mode score are about 1. The companies that did not obtain the maximum score owe that result to the lack of indication of the effect of share-based payment transactions on the profit or loss and on the financial position.

The comparison between the scores produced by the two indicators highlights the substantial homogeneity of the evaluation of the disclosures by the indicators. This consideration is in line with previous studies on the subject of the extent of the disclosures in the profit and loss statements (Choi, 1973; Coombs & Tayib, 1998). Nevertheless, some small differences may be observed. In the unweighted method, the mean score is higher, since the various informational categories required by IFRS 2 are not weighed. As the mean among the scores is higher, their variability is lower, that is to say the scores tend to be closer to their mean. In the weighted method, the mean score is lower, since the lack of disclosures is linked to the informational category with the greatest weight (the impact of share-based payment transactions on the profit and loss). Therefore the scores of the various companies have greater variability among them; that is to say that the scores tend to be farther from their mean.

The above-mentioned concise quantification of the disclosures in the samples demonstrates the validity of H2. In fact, the extent of the disclosures in the consolidated financial statements of the sample can be quantified by means of unweighted and weighted indexes, despite the fact that the literature points out the impossibility of directly measuring the disclosures of the financial statement, since they are by nature abstract. Furthermore, the results of the research demonstrated that the use of unweighted or weighted indices with regards to the financial statements produces quite homogeneous results.

6. CONCLUSIONS AND LIMITATIONS

The minimal informational content required by IFRS 2 is quite analytic and complete, with regard to both the characteristics of share-based payment transactions as well as their influence on the company's financial situation. The analysis of the minimum content required by IFRS 2 demonstrates the validity of H1.

Fewer than half of the companies taking part in the sample had plans of share-based payment transactions in progress in the 2010 period (47 per cent). With regards to the companies that, in

2010, did not have plans of share-based payment transactions in progress, more than half did not provide detail of this in the financial statements.

Most of the companies that did have plans of share-based payment transactions in progress in 2010 opted for a plan of equity-settled share-based payment transactions (82 per cent). In most cases, the company's choice of beneficiaries of these plans were top management, directors and employees (43 per cent), and to a slightly lesser extent, the top management and directors only (33 per cent).

From the study of the sample, it emerged that the minimum content required by IFRS 2 concerning disclosures was respected in five out of six areas. This shows the degree of attention given by companies when providing disclosures in consolidated financial statements. This need is felt especially if companies are operating in the global market. Conversely, with regard to the effect of share-based payment transactions on the profit or loss and on the financial position, only 62 per cent of the companies respected the stipulations of IFRS 2. Given the completeness of minimum information required by IFRS 2, the presence of disclosures that go beyond the minimum requirements are not widespread: H3 is demonstrated.

The application of appropriate disclosure indices facilitated the summing up of the extent of the disclosures present in the sample financial statements. With reference to the unweighted index, the mean company disclosures score is approximately 0.936, while the mean company disclosures score for the weighted index is approximately 0.883. The scores resulting from the application of the two methods are quite aligned, as indicated from the previous studies in the literature. The above-mentioned concise quantification of the disclosures in the samples demonstrates the validity of H2

The implications of the present study can have both theoretic and practical value. With regard to the theoretic value, the study's results identify the minimum information required by IFRS 2 in terms of disclosures, in order to guarantee the users of the financial statement a full understanding of the problems of share-based payment transactions. From a practical point of view, the study may be of interest to those who use financial statements when they have to evaluate the extent of the disclosures provided in the financial statements. In fact, these disclosures regarding stock options provide a primary source of information useful to third parties for measuring the impact of the stock option plans on profit and loss and on financial situation, and understanding their nature and characteristics. It should be noted that the disclosures about the share-based payment transactions constitute an accounting topic that is exposed to heavy political costs: in fact, full communication about the percentage estimated of options exercised is a strong effort towards transparency by the management with regards to their future choices (Di Stefano, 1990; Quagli, 2006). Furthermore, the financial communication does not constitute a "neutral" process, since its effects have repercussions both on the addressees of the financial statement as well as on their compilers (Teodori & Veneziani, 2006). What follows is a change both in terms of company culture as well as management decisions.

The empirical analysis of the application of IFRS 2 to 2010 financial statements of groups listed in the FTSE consumer goods sector on the Italian Stock Market is a good starting point. It would be interesting to increase the sample of listed Italian companies, with the purpose to compare the disclosures of financial statements in different sectors. In addition, it would be of interest to consider listed companies from other European countries in the sample, in order to compare the completeness of data gathered. Lastly, it would be interesting to correlate the extent of the disclosures with certain characterising variables of the company, such as the size, the age, the board composition, the profitability and the complexity of business.

Tables and Figures

Table I – The disclosures-scoring system in the unweighted and weighted method

Variable	Unweighted	Weighted	
	Value of every variable	Source	Weight of every variable
Description of each share-based payment transaction that existed during the period	1/6	Company (CBV) with MR	2/13
Weighted average exercise prices and number of share options for each type of option	1/6	Company (CBV) with MR	2/13
Weighted average share price calculated at the date of exercise	1/6	Market (MBV)	1/13
The range of exercise prices and weighted average remaining contractual life for share options existing at the end of the period	1/6	Company (CBV) with MR	2/13
The modality of valuation of the fair value of goods or services received for the new assignment of options	1/6	Company (CBV) with MR	2/13
The effect of share-based payment transactions on the profit or loss and on financial position	1/6	Company (CBV) with HR	4/13
Total	1		1

Table II – The presence of share-based payment transaction plans in progress in 2010

	No.	Percentage
Yes	21	47%
No	24	53%
<i>Total financial statements analysed</i>	<i>45</i>	<i>100%</i>

Source: personal elaboration

Table III – The indication of the absence of share-based payment transactions in the financial statements

	No.	Percentage
Yes	11	46%
- in the Directors' Report	8	73%
- in the Notes to the Consolidated Financial Statement	3	27%
No	13	54%
<i>Total financial statements analysed</i>	<i>24</i>	<i>100%</i>

Source: personal elaboration

Table IV – Indication of the presence of share-based payment transactions in the consolidated financial statements

	No.	Percentage
Both in the Directors' Report and in the Notes to the Consolidated Financial Statement	16	76%
Only in the Notes to the Consolidated Financial Statement	5	24%
<i>Total financial statements analysed</i>	<i>21</i>	<i>100%</i>

Source: personal elaboration

Table V – Presence of a description of each type of share-based payment arrangement that existed during the period

	No.	Percentage
Yes	21	100%
No	0	0%
<i>Total financial statements analysed</i>	<i>21</i>	<i>100%</i>

Source: personal elaboration

Table VI – Types of share-based payment transactions

	No.	Percentage
<i>Equity-settled share-based payment transactions</i>	17	82%
<i>Cash-settled share-based payment transactions</i>	2	9%
<i>Share-based payment transactions with cash alternative</i>	0	0%
<i>Equity-settled share-based payment transactions and cash-settled share-based payment transactions</i>	2	9%
<i>Total financial statements analyzed</i>	21	100%

Source: personal elaboration

Table VII – Beneficiaries of the share-based payment transactions

	No.	Percentage
Top management, directors and employees	9	43%
Top management and directors	7	33%
Top management	3	14%
Non-strategic directors and middle management	1	5%
Directors and employees	1	5%
<i>Total financial statements analysed</i>	21	100%

Source: personal elaboration

Table VIII – Was 2010 the first year of the plan?

	No.	Percentage
Yes	2	9%
No	18	86%
The company presents multiple plans: only in one case is 2010 the first year	1	5%
<i>Total financial statements analysed</i>	21	100%

Source: personal elaboration

Table IX – Representative disclosures

	No.	Percentage
Yes	2	9%
No (minimum information only)	19	91%
<i>Total financial statements analysed</i>	21	100%

Source: personal elaboration

Table X – Presence of the weighted average exercise prices and number of share options for each types of option

	No.	Percentage
Yes	21	100%
No	0	0%
<i>Total financial statements analysed</i>	21	100%

Source: personal elaboration

Table XI – Representative disclosures

	No.	Percentage
Yes	5	24%
If yes, the disclosures provide a distinction between the various role of beneficiaries	5	100%
If yes, the disclosures provide a further distinction between the geographical origin of beneficiaries	1	20%
No (minimum information only)	16	76%
<i>Total financial statements analysed</i>	21	100%

Source: personal elaboration

Table XII – Exercise of options by the beneficiaries during the period

	No.	Percentage
Exercise of the options	6	29%
If yes, their weighted average share price calculated at the date of exercise was indicated	6	100%
No exercise of the options	11	52%
The exercise had not vested	4	19%
<i>Total financial statements analysed</i>	<i>21</i>	<i>100%</i>

Source: personal elaboration

Table XIII – Presence of share options plan at the end of the period

	No.	Percentage
Yes	20	95%
If yes, the range of exercise prices and weighted average remaining contractual life was indicated	20	100%
No	1	5%
<i>Total financial statements analysed</i>	<i>21</i>	<i>100%</i>

Source: personal elaboration

Table XIV – New assignment of options during 2010

	No.	Percentage
Yes	10	48%
If yes, the modality of valuation of the fair value of services received was indicated.	10	100%
No	11	52%
<i>Total financial statements analysed</i>	<i>21</i>	<i>100%</i>

Source: personal elaboration

Table XV – The effect on the entity's profit or loss and on financial position

	No.	Percentage
a) <i>Equity-settled share-based payment transactions</i> : the portion of the total labour costs	17	
Yes:	9	53%
A specific item is used (for example, costs for stock option)	2	22%
A specific item is not used, but the sum of the cost deriving from equity-settled share-based payment transactions is indicated, which is included in the personnel costs	6	78%
No	8	47%
b) <i>Cash-settled share-based payment transactions</i> : the portion of the total labour costs and the amount of the liabilities at the end of the period	2	
Yes (one of these, notes it as a fund and not a debt)	2	100%
A specific item is used (for example, costs for stock option)	0	0%
A specific item is not used, but the sum of the cost deriving from cash-settled share-based payment transactions is indicated, which is included in the personnel costs	2	100%
No	0	0%
c) <i>Equity-settled share-based payment transaction plans and cash-settled share-based payment transaction plans</i> : presence of required information for both types of transaction	2	
Yes (one of these notes it as a fund and not a debt)	2	100%
A specific item is used (for example, costs for stock option)	1	50%
A specific item is not used, but the sum of the cost deriving from share-based payment transactions is indicated, which is included in the personnel costs	1	50%
No	0	0%
<i>Total financial statements analysed</i>	<i>21</i>	<i>100%</i>

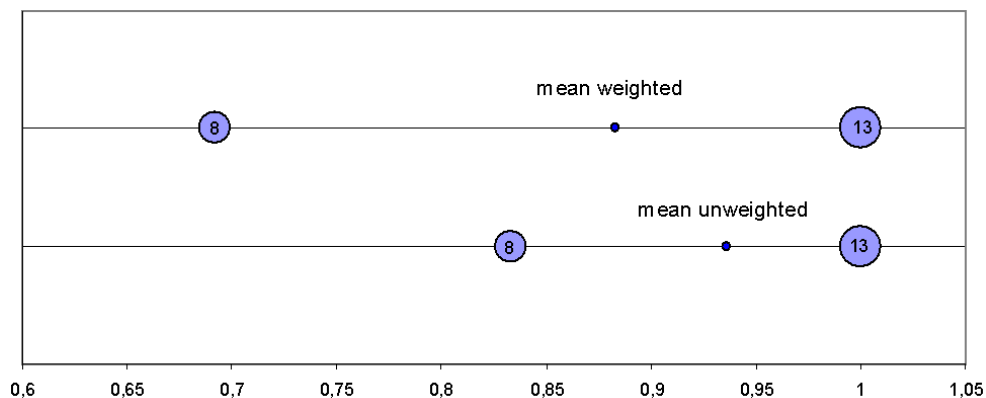
Source: personal elaboration

Table XVI – Disclosure scores for unweighted and weighted index

	Unweighted	Weighted
Mean	0.936	0.883
Median	1	1
Mode	1	1
Range (minimum score 0; maximum score 1)	0.833 - 1	0.692 - 1
Standard deviation	0.0809	0.1494

Source: personal elaboration

Figure I – Graphical representation of these results for unweighted and weighted indexes



Source: personal elaboration

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Appendix 1

The company of the sample

Company	Sector
Aeffe	Products for home and person and fashion sector
Antichi Pellettieri	Products for home and person and fashion sector
Arena	Food sector
B&C Speakers	Products for home and person and fashion sector
Basicnet	Products for home and person and fashion sector
Benetton Group	Products for home and person and fashion sector
Bialetti Industrie	Products for home and person and fashion sector
Bonifiche Ferraresi	Food sector
Brembo	Automotive and components sector
Caleffi	Products for home and person and fashion sector
Campari	Food sector
Centrale del latte di Torino	Food sector
Cobra	Automotive and components sector
Cogeme Set	Automotive and components sector
Crespi	Products for home and person and fashion sector
Csp International Industrie Calze	Products for home and person and fashion sector
De'Longhi	Products for home and person and fashion sector
Digital Bros	Products for home and person and fashion sector
Elica	Products for home and person and fashion sector
Emak	Products for home and person and fashion sector
Enervit	Food sector
Fiat	Automotive and components sector
Geox	Products for home and person and fashion sector
Immsi	Automotive and components sector
Indesit Company	Products for home and person and fashion sector
La Doria	Food sector
Landi Renzo	Automotive and components sector
Le Buone Società	Products for home and person and fashion sector
Luxottica Group	Products for home and person and fashion sector
Marcolin	Products for home and person and fashion sector
Parmalat	Food sector
Piaggio	Automotive and components sector
Pininfarina	Automotive and components sector
Piquadro	Products for home and person and fashion sector
Pirelli E.C.	Automotive and components sector
Poltrona Frau	Products for home and person and fashion sector
Ratti	Products for home and person and fashion sector
Richard-Ginori 1735	Products for home and person and fashion sector
Rosss	Products for home and person and fashion sector
Safilo Group	Products for home and person and fashion sector
Salvatore Ferragamo	Products for home and person and fashion sector
Sogefi	Automotive and components sector
Stefanel	Products for home and person and fashion sector
Tod's	Products for home and person and fashion sector
Zucchi	Products for home and person and fashion sector

Source: personal elaboration

Behavioral Biases at the rear of Huge Losses to Seven Major Institutions of the world

Sumayya Chughtai

PhD scholar, Mohammad Ali Jinnah University
Lecturer, International Islamic University
Islamabad, Pakistan

Rabia Naveed

Mohammad Ali Jinnah University
Islamabad, Pakistan
E-mail: rabbayah_86@yahoo.com

Nousheen Zafar

PhD scholar, Mohammad Ali Jinnah University
Islamabad, Pakistan

Tahira Awan

PhD scholar, International Islamic University
Research Associate, International Islamic University
Islamabad, Pakistan

ABSTRACT

As literature in finance clearly indicates, pure finance theory does not takes into account people's sentiments, prospects or expectations. Ignoring these important behavioral traits can often lead to poor or defective financial decision making. Behavioral patterns of society, and individuals, can and often do override the mathematical models. The Case Study at hand is focused on identification of possible human behavioral biases of derivatives traders, which could have lead the derivatives trading to be the cause of mass destruction of their institution

Key words: Financial Derivatives, Behavioral Biases, Overconfidence Bias, House Money Effect, Illusion Of Control, Excessive Trading

INTRODUCTION

"Derivatives are weapons of mass destruction" (Warren Buffet).

The Case Study at hand is focused on identification of possible human behavioral biases of derivatives traders, which could have lead the derivatives trading to be the cause of mass destruction of their institution. Every one related to the field of Finance must have heard about Nick Leeson the famous rogue trader from Barings bank. After Barings' financial collapse the poor Operational Risk Management Structure of the Barings was most widely said to be the major factor which allowed Nick to carry his deceitful activities. After this event of failure of Operational Risk Management Structure, the



banking Industry particularly and all the financial institutions generally must have put a great emphasis on covering the loop holes in their Operational Risk Management Structures to not let another Leeson drive them to destruction. But despite this we still have Allied Irish (a subsidiary of All First Bank) in 2002, Amaranth Advisors LLC in 2006 and Société Générale in 2008; facing the similar kind of financial crises resulting from their key man's trading in derivatives. Failure of Operational Risk Management Structure and many other proposed reasons (like the fraudulent intention of the trader or external factors etc) of course might be very important ones behind these events (and the other similar kind of cases included in our study). But our focus in this study is to determine the possible behavioral implications which might also be involved in explanation for such events. The particular position (long or short) of any party in derivatives trading is taken on the basis of its anticipation about the future move of the value of underlying asset and the resulting profit (or loss) is based on the precision and accuracy of that anticipation. Despite of the facts and figures consulted, there remains a lot of room for human psyche to incorporate in while anticipating about the future.

Our purpose also is to find out how and to what extent the traders are affected by their own internal biases while anticipating the future moves and taking their respective positions in derivatives trades. And how these behavioral biases mislead them in their future envisions and cause serious hazardous situations or complete destruction of their institutions.

DATA COLLECTION AND PROCEDURE

The selection of sample is based on convenient sampling. From a list of total 43 institutions (provided on en.wikipedia.org entitled as *LIST OF TRADING LOSSES*), those seven are included in the study which suffered particularly due to their derivative trades and on which we were able to collect the maximum data relative to the purpose of the study. All the data is secondary and is collected through web.

The study is purely theoretical in nature. Description of Biases, which are observed in trading behavior of different traders in the sample, is mainly taken from *BEHAVIORAL FINANCE AND WEALTH MANAGEMENT* by Michael M. Pompian. "Implications for Investors" given in this book for each bias is then related to the behavior of particular investor (trader) under consideration.

Following cases of Trading Losses are included in the study:

1. Allied Irish Bank (Maryland Subsidiary of Allfirst Bank)
2. Barings Bank
3. Societe General
4. Amaranth Advisors LLC
5. Sumitomo
6. BAWAG (Bank for Employment and Commerce)
7. Bank Herstatt

Details of each case are attached at the end in Attachments section of the study. To better understand the concepts presented in the study and their relation with the cases included, it is preferred that the reader first go through these cases to enhance his/her understanding of the study.

Overconfidence Bias

"Overconfidence can be summarized as unwarranted faith in one's intuitive reasoning, judgments, and cognitive abilities."

"The confidence intervals that investors assign to their investment predictions are too narrow. This type of overconfidence can be called prediction overconfidence."

"Investors are often also too certain of their judgments. This type of overconfidence is referred to as certainty overconfidence."

(BEHAVIORAL FINANCE AND WEALTH MANAGEMENT by Michael M. Pompian)

*In derivative trading; under **Prediction Overconfidence** investors might assign a very narrow range to the fluctuation in the price of underlying asset, while making future estimations to take their respective positions.*

Barings Bank

In Nick Leeson's Straddles Strategy the strike price for both put and call options of Nikkei 225 was ranged from 18500 to 20,000. For his trading strategy to be successful the price of Nikkei 225 should have fluctuated between this range but Kobe earthquake shook the index price badly resulting the call options to be worthless for Leeson and put options to be very value able for their holders.

*Under **Certainty Overconfidence** investors might underestimate or completely ignore the element of downside risk in trading and thus don't go for appropriate hedging for their positions.*

Leeson's proposed trading strategy was to seek profit from the price discrepancy of Nikkei 225 Future contracts on Osaka Securities Exchange (OSE) in Japan and Singapore International Monetary Exchange (SIME). If he was long at one place he must have been short at the other. But due to his firm belief that the price of Nikkei 225 would rise he was long at both places thus ignoring the hedging principal.

Allied Irish Bank

Mr. John Rusnak's proposed trading strategy was to be arbitraging i.e. buying the currency options when they were cheaper and selling those when they were expensive. But in actual he entered into Forward Contracts to buy Yen. He was too much optimized about Yen to be appreciating against Dollar in the future that he did not hedge his long position in these contracts to avoid the losses in case Yen would depreciate.

Société Générale

In late 2005 Kerviel took short position in Allianz (German Insurance Company) Stock. This position was unhedged, but resulted in 500,000 Euro profit for Kerviel. He entered a false record in bank's computer system as if he had entered this position through taking opposite position in a stock B. This success gave rise to his confidence in his predicting ability and he kept the same practice for later bets which finally turned the table around.

Amaranth Advisors LLC

Although Amaranth Advisors was a hedge fund and it must naturally had not shown this kind of behavioral tendency to ignore hedging. But Brian Hunter was investing heavily in the positions he was optimized about (rise in price of Natural Gas Futures). The amount invested in these positions was such big as compared to the opposite positions taken for hedging purposes that those positions could not work out to equate the losses resulting from Long positions.

Sumitomo

Yasuo Hamanaka (Mr. Copper) was cornering the copper market by holding large supplies of physical quantity of copper and also by taking long positions in Copper Futures on London Metal Exchange (LME). Hamanaka was very confident about the success of his strategy due to his large copper holdings and his huge positions in Copper Futures that he did not thought of some body ever to be able to take copper prices down so he felt no need for hedging.

Bank Herstatt

Herstatt was mostly involved in foreign exchange transactions and had very risky wide forex positions. They had been very successful in their trading strategy up till 1973. In 1973 when Free Floating Exchange rate system replaced Breton Woods Exchange Rate System, they kept on betting in the same way having a firm belief in the success of their previous trading strategy and ignoring the need of hedging with the new Exchange Rate System, this resulted in its forced liquidation by Federal Banking Supervisory Office (BAKred) in 1974.

Winners Curse and Excessive Trading

When investors seek continuous profits over some period in their trading Strategies this gives rise to their confidence on their predicting ability and thus ultimately results in Overconfidence Bias. As a result they start investing heavily in these positions to make out even greater profits.

This tendency is observable in all the cases in our sample where traders start enlarging their positions after initial successful bets. They put such large amounts of money in these highly leveraged positions that it was not possible for the institution to recover the amounts of resulting losses through any counter strategy. And this wish for Empire Building ultimately lead them to huge disasters.

Allied Irish

Made profits on Dollar-Yen Forward Contracts from 1993-1995 when Yen appreciated. The limit for Value at Risk for Mr. Rusnak was \$1.5 million but he had lost \$90 million by the end of 1999.

Société Générale

Throughout 2007 Kerviel made huge profits (approximately 1.4 billion Euros) for his bank. During this period he had traded heavily, between March 15 and August 30th he traded almost 150,000 future contracts of worth 30 billion Euros, later on from September to November 2007 his trading volume reached approximately 350,000 contracts. As a result of these profits he kept putting more and more money in his positions and the total amount of losses revealed was \$4.9 billion in 2008.

Amaranth Advisors

According to *Trader Monthly* magazine, "Within six months of joining Amaranth, Hunter made the hedge fund \$200 million". Hunter's Speculations about rise in price of Gas Futures proved to be correct in 2005 and made over \$1 billion profits for the company. Naturally he made the same predictions for 2006 ignoring the facts and figures and this time lost almost \$6 billion.

Sumitomo

For a successful cornering strategy Hamanaka put huge amounts both in copper physical quantity and copper futures so that no body could short him. And the amount of losses was as high as approximately \$4 billion.

Bank Herstatt

Herstatt was largely involved in foreign exchange trading and was very successful with almost no risk mainly due to Breton Woods System, this glorious background in forex trading rose the confidence level of traders at Herstatt to such high levels that they started throwing even greater sums in these trades even after Free Floating System had been incorporated in the market. Rationally they must have taken into consideration the evolution of volatility in exchange rates and the factor of resulting risk due to new exchange rate system, but it seems to be the Winner's Curse and their overconfidence which influenced their trading strategy and drove them to put in more and more money to earn even greater success. Federal Banking Supervisory Office (BAKred) conducted an audit in March, 1974. The report found Herstatt's open exchange positions to be of worth DM2 billion; Herstatt's actual limit was DM25 million, thus the actual position was 80 times greater than the limit. Thus its foreign exchange risk was three times greater than its capital.

Barings

\$7 billion on Nikkei 225 equity Contracts. 55,206 Straddles contracts from initial 27,158 contracts just in a period of three weeks.

Illusion of Control

"Expectancy of a personal success probability inappropriately higher than the objective probability would warrant."

(Ellen Langer, Ph.D., of Harvard University)

Langer found that choice, task familiarity, competition, and active involvement can all inflate confidence and generate such illusions.

In our sample, **Choice & Task Familiarity** seems to be the factors inflating illusion of control among the investors.

*As far as **Choice** is concerned we can see that in all these cases the losses are driven by a single trader. Although it was management's fault to allow a single trader to deal in such large positions but this factor gave rise to illusion of control among the traders as they were free in making the choice for their respective positions in the trades by their own. This illusion of control also incorporated in boosting their overconfidence.*

*Coming towards **Task Familiarity**, most of the traders in our sample had a successful professional record of trading in derivatives. So their familiarity with the task also contributed in enhancing their overconfidence and misleading them in their speculations and trading strategies.*

Amaranth Advisors LLC (Brian Hunter)

Brian Hunter began to make a name for himself at Deutsche Bank in 2001 as an energy trader that specialized in natural gas trades. Hunter personally generated \$17 million in profit for the company and he followed up with an even better performance in 2002 by earning \$52 million. By 2003, Hunter began supervising the gas desk at Deutsche (while earning \$1.6 million plus bonuses). As 2003 came to a close, the group Hunter supervised was about to end the year up approximately \$76 million.

Allied Irish Bank (Mr. John Rusnak)

He had gained a wide experience in foreign currency trading at Fidelity Bank Philadelphia in 1986 and later on at Chemical Bank New York in 1988-1993.

House Money Effect

*"When endowed with "house money," people become more inclined to take risks."
"Investors take more risks as wealth increases."*

(An Experimental Examination of the House Money Effect in a Multi-Period Setting)
(By Lucy F. Ackert, Narat Charupat, Bryan K. Church, and Richard Deaves)

Another possible explanation for investing huge amounts in highly volatile derivative trades might be the House Money Effect. As the money invested by the traders at financial institutions is not earned by themselves so according to house money effect they are inclined to take more risk with this money thus putting huge amounts in risky bets to make out greater profits believing in notion "Higher is the risk, higher would be the return".

House money effect also explains the highly leveraged positions taken in derivatives by the traders in our example by mentioning the effect of prior gains or losses on subsequent risk taking. Lucy F. Ackert, Narat Charupat, Bryan K. Church, and Richard Deaves have found in their experimental study that people intend to take more risks after prior gains. As mentioned above under Winners Curse, investors started putting greater sums in their existing positions, after initial success to make even larger profits.

Breakeven Effect

Breakeven Effect refers to the fact that when a person suffers losses his risk taking tendency is increased in a hope to recover those losses back with even bigger bets.

Thus an investor keeps on putting more and more money to recover his initial losses, which generally is termed as "throwing good money after bad".

Bank for Employment and Commerce (BAWAG)

BAWAG CEO Mr. Flotl and his later successor Helmut Elsner authorized BAWAG to finance highly volatile currency derivatives trades through a hedge fund known as Ross Capital Markets Ltd. Managed by Flotl's son Wolfgang. Ross Capital Markets Ltd. Was able to made some profits on BAWAG funds earlier but later on it start suffering losses due to its bets on Asian currencies specially Yen. Because of the fear of disclosure of these losses to BAWAG due to its investments through Ross Capital Markets Ltd; Mr. Flotl and Elsner kept on giving Flotl junior more and more BAWAG funds to invest on these positions so that the losses could be recovered. Flotl junior had lost almost \$640 million of BAWAG funds by 1998 when Mr. Elsner gave another \$90 million in the fall of 1998. By 2000 Flotl was given another €350 million.

Barings Bank

Nick Leeson also tried to recover the losses from Kobe earthquake and put more money in his option contracts to revert back the price of Nikkei 225 single handedly. On 27 January, account '88888' showed a long position of 27,158 March 1995 contracts. Over the next three weeks,

Leeson doubled this long position to reach a high on 22nd February of 55,206 March 1995 contracts.

Allied Irish Bank

Rusnak's bets on yen worked from 1993-1995, but after 1995 when Yen started depreciating due to Asian financial crises, he had lost \$29.1 million by the end of 1997. Instead of revealing these losses and closing out these positions at a lesser amount of losses he tried to hide these losses through his bogus options strategy and sale of deep in the money options to get premiums to finance his early positions, these practices resulted in even worst situation and raised the total amount of losses to \$691 million by 2002.

Sumitomo

Hamanaka was very successful in his price manipulation strategy by putting huge amounts in his long positions to keep copper prices artificially high, but every successful strategy has to face a fall eventually. This was the point where Hamanaka failed to succeed, instead of selling some of his copper at loss; he decided to put even higher amount in his positions to take the prices ever higher ("*Double or Nothing*") and the result was losses of \$4 billion.

Regret Aversion Bias

"Regret Aversion Bias is a cognitive phenomenon that often arises in investors, causing them to hold onto losing positions too long in order to avoid admitting errors and realizing losses."
(*BEHAVIORAL FINANCE AND WEALTH MANAGEMENT* by Michael M. Pompian)

Nick Leeson at Barings, John Rusnak at Allied Irish, Kerviel at Societe General, Flottl and Elsner at BAWAG and Hamanaka at Sumitomo; none of them attempted to disclose his losses and close out the respective trading positions at initial level when they discovered these positions going against them. Obviously it requires a great deal of courage to admit the consequences of wrong decisions made by one, and no body is ready to give a chance to *Dispositional Attribution* to be assigned to their actions in case of bad events. So all these traders kept on holding those positions and even try to hide them by adopting various deceptive methods, hoping that the situation will soon change in their favor and losses would be recovered.

LIMITATIONS OF THE STUDY

The study is based entirely on secondary data. All the biases are observed and concluded only on basis of investors' trading behavior. All these individuals are not primarily tested for each bias because it was not convenient for us to contact each of them due to resource and availability constraints.

IMPLICATION FOR INVESTORS (INSTITUTIONS)

We have observed in above cases that the most hazardous factor in downfall of these institutions was the human behavior. The complex cognitive process in human mind leads different biases to occur in their behavior under different situations. In most of the cases these biases occurred in situations that were arisen due to improper systems and control procedure. Being very subjective element behavior can't be predicted using any statistical or econometrical models based on past data, as each human being is quite different from others. What kind of cognitive process he is going through in his mind in response of different situations; is a factor which can't be observed until manifested through his behavior. Probability of his fraudulent intentions can't be estimated. The only thing that can be practiced is to make the control procedures very active both within the

institutions as well as in the financial markets, to not let any one have complete authority over his work and to prevent the situations that can cause behavioral distortions

Attachments

1- ALLIED IRISH BANK

Allied Irish Bank had to suffer from losses of \$691 million at its Maryland subsidiary Allfirst Bank in 2002 due to the fraudulent activities of Mr. John Rusnak, a foreign currency trader at Allfirst.

Allfirst's treasurer Mr. Dan Cornin wanted to expand subsidiary's foreign exchange operations through proprietary trading. For this very purpose MR. John Rusnak was hired in 1993 as an expert trader because he had gained a wide experience in foreign currency trading at Fidelity Bank Philadelphia in 1986 and later on at Chemical Bank New York in 1988-1993.

Proposed Trading Strategy

Mr. Rusnak proposed a trading strategy that looked very attractive and profit making to Mr. Cornin. He said that he would be using currency options to indulge in arbitrage activity; buying options when they were cheap and selling them when they were expensive thus getting profit from price discrepancies.

Actual Trading Strategy

But in actual Rusnak was not adopting this strategy in his trading. Rusnak was much optimized towards Yen and had a firm belief that Yen would appreciate against dollar in future. So he entered in Forward contract to buy Yen. He was so optimized about this trend that he even did not hedge his forward contracts to avoid losses in case Yen would depreciate against dollar.

In due course Yen appreciated from 1993-1995 during which John Rusnak performed well at his positions, but when Asian Crises led Yen to depreciate; Mr. Rusnak was in great trouble. He had to suffer losses of \$29.1 million from his unhedged forward contracts by the end of 1997. Instead of revealing his losses to senior management; Rusnak decided to hide those hoping that he would be able to regain the amount he had lost. He adopted various fraudulent tricks to hide the losses incurred as well as his true ongoing trading activities.

Bogus Options

Mr. Rusnak entered bogus options in bank's computer system to show that his forward contracts were hedged through these options and also to cover up the amount of losses through premium revenue from these options. At the end of each trading day, he used to enter two option contracts in the system; both written in the same currency, having same premium but with different settlement dates. The put option written by Allfirst was shown as expired on the same date it was written but the call option written by some counter party would expire at some future date.

The premium settlement would have been gone through the back office of Allfirst's Treasury department; in this case they would have known that the options were bogus. Mr. Rusnak made the premium for both options exactly the same so there would not be a need of payment to either party.

False Confirmatory Documents

The Treasury back office had also to confirm the trades of John Rusnak from the counter parties. As the trades were bogus so the mentioned counter parties were also not actually involved in the contracts; then how would they be confirming the trades? At this point Mr. Rusnak's fake strategy would have been revealed to back office. But Mr. Rusnak made false confirmatory documents in his own computer, using logos of those parties and convinced back office to accept the confirmatory documents from him instead of confirming the trades independently using their own sources.

Prime Brokerage Account

Mr. Rusnak had lost \$41.5 million by 1999; he needed to further expand his trades to cover up the losses he had incurred. So he used Prime Brokerage Account for this purpose. Through Prime Brokerage Account his daily trades would have been rolled into a net settlement at month end. Thus back office would not be able to assess effectively his true daily trading activity. He convinced Mr. Cornin that Prime Brokerage Account was a sound idea to expand bank's foreign exchange operations. He also argued that it would also be covering the extra work for back office. Mr. Rusnak also used Historical Rate Rollover through this account. Through historical rate rollover he was able to delay the settlements in the contracts he was at loss.

Spread Sheets Manipulation

Value at Risk Calculation:

Value at Risk is the maximum amount a bank can afford to loose due to unfavorable events. For Mr. Rusnak this amount was \$1.5 million but he had lost \$90 million by the end of year 1999. His bogus option contracts and the prime brokerage account made his transactions less risky thus manipulating his VAR calculation. He was able to convince the back office to accept the spreadsheet of his trading positions from himself rather than confirming these positions independently and evaluating the true risk of his positions and calculating the true VAR.

Exchange Rate Manipulation:

Mr. Rusnak was able to obscure his stop-loss limit by manipulating exchange rates. The exchange rate spread sheet was forwarded to all departments of bank from Rusnak's computer and no body else was confirming these rates. Rates were downloaded only at Rusnak's Reuter to avoid the cost of \$10,000 for a separate feed to back office.

Sale of Options

Mr. Rusnak was involved in excessive trading to recover his losses, so a large amount of capital was used for foreign exchange trading at Allfirst. Mr. Cornin demanded Rusnak to reduce his use of capital for forex trading to relax the balance sheet of the bank. Rusnak sold deep in the money options to Citibank, Bank of America, Deutsche Bank, Bank of New York and Merrill Lynch. The sale of these options provided him with huge amount in premium to carry on his excessive trading. These options gave rise to a liability for Allfirst to purchase Yen when counter parties would exercise the options.

2-HERSTATT BANK

Herstatt was the thirty-fifth largest bank in Germany by the end of 1973. The bank was forced liquidated by German government on June 26, 1974.

Course of Events

Herstatt was mostly involved in foreign exchange transactions and had very risky wide forex positions. These positions were based on anticipations involving bearish belief in dollar. In September, 1973 Herstatt suffered losses out of these positions amounting four times greater than its capital as dollar appreciated. After that bank took the opposite position in its trades that was on appreciation of dollar. This strategy worked until January, 1974 when dollar started to depreciate. Federal Banking Supervisory Office (BAKred) conducted an audit in March, 1974. The report found Herstatt's open exchange positions to be of worth DM2 billion; Herstatt's actual limit was DM25 million, thus the actual position was 80 times greater than the limit. Thus its foreign exchange risk was three times greater than its capital. The Federal Banking Supervisory Office demanded the bank to close its foreign exchange positions.

In June, 1974 Herstatt's losses out of its open forex positions amounted to be DM470 million. Its assets were amounted to DM1 billion and were insufficient to offset its liabilities which amounted to be DM2.2 billion. On June 26, 1974 BAKred cancelled Herstatt's license to continue banking operations and Herstatt went bank corrupted.

Reasons of Herstatt's Liquidation

The losses arising out of open foreign exchange positions led to liquidation of Herstatt bank. Herstatt was involved in foreign exchange transactions since long ago. Initially its transactions were being conducted under Bretton Woods System in which exchange rates were fixed so the transactions were not as riskier. With collapse of Bretton Woods System in 1973, Floating Exchange Rates emerged which made the business more vulnerable to MARKET RISK. The bank was not involved in hedging its positions, thus these unhedged positions lead to bank's liquidation.

3-BARINGS BANK

Barings Bank was a 233 years old merchant bank in London when it finally collapsed in 1995 under a \$1.4 billion debt due to The Rogue Trader Nick Leeson's greed and overreaching ambition and Barings' serious lack of Operations Risk Management Systems. Leeson joined Baring Securities Ltd (BSL) in 1989, working primarily in the settlements department. Leeson was posted to Baring Futures Singapore Ltd (BSL) to establish settlement operations and also to be a floor manager at the Singapore International Monetary Exchange (SIMEX).

The activities of Nick Leeson on the Japanese and Singapore futures exchanges led to the downfall of Barings. Barings collapsed as it could not meet the enormous trading obligations, which Leeson established in the name of the bank. When it went into receivership on February 27, 1995, Barings had outstanding notional futures positions on Japanese equities and interest rates of US\$27 billion: US\$7 billion on the Nikkei 225 equity contract and US\$20 billion on Japanese government bond (JGB) and Euro Yen contracts. Leeson sold 70, 892 Nikkei put and call options with a nominal value of \$6.68 billion.

Long Position in Nikkei 225 future Contracts

Leeson was supposed to be arbitraging, seeking to profit from differences in the prices of Nikkei 225 futures contracts listed on the Osaka Securities Exchange in Japan and the Singapore International Monetary Exchange. Such arbitrage involves buying futures contracts on one market and simultaneously selling them on another at a higher price. If Leeson was long on the OSE, he had to be short twice the number of contracts on SIMEX.

Because Leeson's official trading strategy was to take advantage of temporary price differences between the SIMEX and OSE Nikkei 225 contracts. But Leeson was not short on SIMEX; in fact he was long approximately the number of contracts he was supposed to be short. These were unauthorized trades which he hid in an account named Error Account 88888. He also used this account to execute all his unauthorized trades in Japanese Government Bond and Euroyen futures and Nikkei 225 options: together these trades were so large that they ultimately broke Barings.

Straddles

The most striking point is the fact that Leeson sold 70,892 Nikkei 225 options worth about \$7 billion without the knowledge of Barings London. Leeson sold straddles. i.e. he sold put and call options with the same strikes and maturities. Leeson earned premium income from selling well over 37,000 straddles over a fourteen month period. Such trades are very profitable provided the Nikkei 225 is trading at the options' strike on expiry date since both the puts and calls would expire worthless. The strike prices of most of Leeson's straddle positions ranged from 18,500 to 20,000. He thus needed the Nikkei 225 to continue to trade in its pre-Kobe earthquake range of 19,000 - 20,000 if he was to make money on his option trades.

The Kobe earthquake shattered Leeson's options strategy. On the day of the quake, January 17, the Nikkei 225 was at 19,350. It ended that week slightly lower at 18,950 so Leeson's straddle positions started to look shaky. The call options Leeson sold looked worthless but the put options became very valuable to their buyers if the Nikkei continued to decline. Leeson's losses on these puts were unlimited and totally dependent on the level of the Nikkei at expiry, while the profits on the calls were limited to the premium earned.

Leeson, tried single-handedly to reverse the negative post-Kobe sentiment that swamped the Japanese stock market. On 27 January, account '88888' showed a long position of 27,158 March 1995 contracts. Over the next three weeks, Leeson doubled this long position to reach a high on 22nd February of 55,206 March 1995 contracts and 5640 June 1995 contracts.

Cross Trade

The vehicle used to effect this deception was the cross trade. A cross trade is a transaction executed on the floor of an Exchange by just one Member who is both buyer and seller. The bottom line of all these cross-trades was that Barings was counterparty to many of its own trades. Leeson bought from one hand and sold to the other, and in so doing did not lay off any of the firm's market risk. Barings was thus not arbitraging between SIMEX and the Japanese exchanges but taking open (and very substantial) positions, which were buried in account '88888'.

4-SOCIÉTÉ GÉNÉRALE

In January 2008, the bank Société Générale lost approximately €4.9 billion closing out positions over three days of trading beginning January 21, 2008, a period in which the market was experiencing a large drop in equity indices.

Excessive Trading

Bank officials claim that throughout 2007, Kerviel had been trading profitably in anticipation of falling market prices; however, they have accused him of exceeding his authority to engage in unauthorized trades totaling as much as €49.9 billion, a figure far higher than the bank's total market capitalization. Bank officials claim that Kerviel tried to conceal the activity by creating losing trades intentionally so as to offset his early gains. According to the BBC, Kerviel generated €1.4 billion in hidden profits by the end of 2007. His employers say they uncovered unauthorized trading traced to Kerviel on January 19, 2008.

The Incidence

The bank states that Kerviel was assigned to arbitrage discrepancies between equity derivatives and cash equity prices, and "began creating the fictitious trades in late 2006 and early 2007, but that these transactions were relatively small. The fake trading increased in frequency, and in size. The transactions that were built on the fraud were simple, positions linked to rising stock markets. The bank finds itself long on European equities and just keeps on selling, right into the biggest fall in a couple of decades. The bank then closed out these positions over three days of trading beginning January 21, 2008, a period in which the market was experiencing a large drop in equity indices, and losses attributed are estimated at €4.9 billion. These losses could have been gains if the market had climbed on Monday, Tuesday and Wednesday. It appears that he bet massively and mistakenly on a rise of European equity indices.

5-AMARANTH ADVISORS LLC

Amaranth Advisors LLC was an American investment adviser managing multi-strategy hedge funds with approximately US\$9 billion in assets under management. In September 2006, it collapsed after losing roughly US\$6 billion on natural gas futures. The failure was one of the largest known trading losses and hedge fund collapses in history.

The Trader

Brian Hunter began to make a name for himself at Deutsche Bank in 2001 as an energy trader that specialized in natural gas trades. Hunter personally generated \$17 million in profit for the company and he followed up with an even better performance in 2002 by earning \$52 million. By 2003, Hunter began supervising the gas desk at Deutsche (while earning \$1.6 million plus bonuses). As 2003 came to a close, the group Hunter supervised was about to end the year up approximately \$76 million. Unfortunately, within a week's time it had incurred losses of \$51.2 million. This was the beginning of a series of negative events that would force Hunter to leave his position at Deutsche bank. His next job would be at Amaranth Advisors, as head of the energy trading desk.

According to *Trader Monthly* magazine, within six months of joining Amaranth, Hunter made the hedge fund \$200 million. That distinction alone impressed his bosses so much that they created an office in Calgary, Alberta, allowing the Canadian to move back to his hometown. In March of 2006, Hunter was named to the twenty-ninth spot on the *Traders Monthly* list of top traders. Amaranth profited by about \$800 million as a result of all his trades and he was rewarded with compensation in the \$75 million to \$100 million range.

What Went Wrong?

While most of Amaranth's initial energy investments were more conservative in nature, the energy desk consistently posted annual returns of around 30%. Eventually, Hunter was able to make more speculative positions using natural gas futures contracts. This worked in the fund's favor in 2005 when hurricanes Katrina and Rita disrupted natural gas production and helped push the price of natural gas up nearly three-fold from the January low to the November high, as shown in Figure 1, below. Hunter's speculations proved correct and earned the company well over \$1 billion dollars and an epic reputation.

Although the risky bets on natural gas and hurricanes paid off in 2005, the same bets would ultimately bring about Amaranth's demise a year later.

Betting on the Weather

After a devastating hurricane season propelled Amaranth to billion dollar returns in 2005, it was only natural for Hunter to place the same bets again in 2006. And while meteorologists were not expecting the 2006 hurricane season to be as severe as 2005, several storms were anticipated.

Like all hedge funds, the specifics of Amaranth's trading strategies are kept a secret, but it is known that Hunter placed an extremely leveraged bet on natural gas moving higher. But with the inventory supplies of natural gas increasing and the threat of another severe hurricane season diminishing, the bulls were disappearing daily. During the second week of September, 2006, the natural gas contract broke through an important price support at \$5.50 and proceeded to drop another 20% in a two-week period.

By the third week of September, 2006, the U.S. had not experienced any major storm and the price of natural gas was in the middle of a free-fall. Amaranth and in particular, Hunter, were heavily invested in natural gas futures and according to reports from other natural gas investors, used borrowed money to double-down on its initial investments. What Amaranth and Hunter were trying to achieve with the hedge fund is large gains with hedged positions. Ideally, hedging should lower a fund's risk because the fund has both bullish and bearish positions. If the futures contract moves in one direction, the fund should profit with one contract as the other is either sold or used to hedge against a sudden move in the opposite direction. However, many hedge funds make huge bets on the market moving in the direction of their leveraged bets. When the trades go as planned, a fund's investors will see significant returns. However, because this strategy does little to minimize risk, there are a number of hedge funds that go the way of Amaranth.

6-SUMITOMO

The loss of at least \$1.8 billion (the true number is rumored to be \$4 billion or more) in the copper market by an employee of Sumitomo Corp. Sumitomo owned large amounts of copper that was warehoused and stored at factories as well as numerous futures contracts. Hamanaka used Sumitomo's size and large cash reserves to both corner and squeeze the market via the London Metal Exchange (LME). As the world's biggest metal exchange, the LME sets the world copper price. Hamanaka kept this price artificially high for nearly the entire decade leading up to 1995 and, as a result, garnished premium profits on the sale of Sumitomo's Physical assets.

Beyond the sale of its copper, Sumitomo benefited from commissions on other copper transactions that were handled by the company. Commissions are calculated as a percentage of the value of the commodity being sold and delivered. In this case, Hamanaka's artificial prices inflated values, which allowed Sumitomo to pocket greater sums.

Whenever anyone attempted to short Hamanaka, however, he would pour more cash into his positions, thereby sustaining the price and outlasting the shorts, simply by having deeper pockets. Hamanaka held long cash positions that forced anyone shorting copper to deliver the goods or close out their position at a premium. Hamanaka was helped greatly by the fact that, unlike the U.S., the LME had no mandatory position reporting and no statistics showing open interest. Basically, traders knew the price was too high, but they did not have exact figures on how much Hamanaka controlled and how much money he had in reserve.

Hamanaka was successful in cornering the market as he had worked out for three very important factors. First, you must be able to operate on a sufficiently large scale. Second, the strategy only

works if not too many people realize what is going on--otherwise nobody will sell to you in the first place unless you offer a price so high that the game no longer pays. Third, this kind of thing is, for obvious reasons, quite illegal.

Many people nowadays take it as an article of faith that free markets always take care of themselves--that there is no need to police people like Hamanaka, because the market will automatically punish their presumption. And Sumitomo's strategy did indeed eventually come to grief--but only because Hamanaka apparently could not bring himself to face the fact that even the most successful market manipulator must accept an occasional down along with the ups. Rather than sell some of his copper at a loss, he chose to play double or nothing, trying to repeat his initial success by driving prices ever higher; since a market corner is necessarily a sometime thing, his unwillingness to let go led to disaster. But had Hamanaka been a bit more flexible and realistic, Sumitomo could have walked away from the copper market with modest losses offset by enormous, ill-gotten gains.

7-BANK FOR EMPLOYMENT AND COMMERCE (BAWAG)

The *Bank für Arbeit und Wirtschaft AG*, BAWAG or in English, 'Bank for Employment and Commerce' was founded in 1922 by the Socialist Chancellor Karl Renner. Up until now the majority stakeholder in the Bank has been the Austrian Trades Union Federation, the ÖGB. With the repurchase of the shares of the *Bayerische Landesbank* in 2004, it is now wholly-owned by the ÖGB. The bank's original intent, from which it has strayed far, was to extend cheap credits to the needy

.BAWAG management had apparently sought to accelerate its revenue growth in the early 1990s, beyond what its depositor asset base had traditionally provided. CEO Walter Flöttl, and later his successor Helmüt Elsner, both reportedly authorized BAWAG to finance aggressive investments in highly volatile currency derivatives trading by a Bermuda-based hedge fund (and related entities) known as Ross Capital Markets, Ltd., a secretive pooled investment vehicle managed by Flöttl's son, Wolfgang.

The junior Flöttl, a Manhattan black-tie socialite since the 1980s with his wife, Anne Eisenhower-Flöttl, the grand-daughter of a former U.S. President, did have an initial stint of profitable trades with his risky leveraged derivative strategies. Beginning some time in 1995, after the Austrian Central Bank had probed the father-son activities, BAWAG loaned Flöttl's hedge fund, and other Flöttl-controlled entities, hundreds of millions of dollars, a practice that continued even after he reportedly incurred a \$759 trading loss during the summer of 1998. Flöttl faced massive margin calls from Wall Street brokerages as his dollar-yen trades turned against him, and "according to an Arthur Andersen audit of Mr. Flöttl's trading records ordered by the bank's board," he lost roughly \$640 million of BAWAG's funds over the span of about six trading sessions.

BAWAG's CEO at the time, Helmüt Elsner, later told Austrian criminal Investigators that "he began to worry that Bawag's losses would be revealed," and the bank shoveled more money at the problem, loaning Flöttl another \$90 million in the fall of 1998 that was also apparently lost in bad derivative trades. After Flöttl's 1998 trading debacle, BAWAG feared that Flöttl's failures would soon become public, and possibly expose the bank's concealed losses, and loaned Flöttl another \$18 million, this time, however, to keep his Gulfstream jet flying (and apparently to keep up appearances), according to a 2006 Austrian Central Bank audit as reported by the Wall Street Journal.

By 2000, Flöttl was loaned another €350 million, reportedly “on the condition that Mr. Flöttl shared his trading profits with the bank,” however, there would be no profits, and by that December of that year, “substantially all” of the borrowed funds had been lost. After BAWAG realized roughly €1B in losses from the off-shore derivatives disaster, Elsner had apparently had enough. Mr. Flöttl later described to authorities a December 2000 meeting between he and Elsner in London, where, “Mr. Elsner terminated our business relations,” Mr. Flöttl reportedly told Austrian prosecutors, “he said he doesn’t want to have anything more to do with me.” Curiously, criminal charges against Flöttl were reportedly later withdrawn by an Austrian judge in 2006.

Elsner and BAWAG sought to permanently conceal the losses beginning in 2000, reportedly with the assistance of BAWAG auditor, KPMG Alpen-Treuhand GmbH, in a series of complex “sham” transactions that effectively converted the Flöttl loans into dubious “assets” on BAWAG’s balance sheet purportedly worth far more, Austrian National Bank auditors later concluded.

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