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Research Papers & Articles

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Advertisement Liking Pattern of Youngsters and its Influence on Their Purchasing Behavior

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Abstract

The present paper attempts to see as to how youth perceived the TV advertisement and what kind of advertisements falls in their liking zones with the reason thereof. The researchers also analyzed as to how the advertisement liking pattern influenced the purchase intention of youngsters. The present paper targets the young generation in the age group of 18-30 living in the NCR areas. In all 775 respondents were contacted either personally or through mail, only 230 responded. The results revealed that youngsters perceived advertisement as an interesting and enjoyable thing which helps them to gather knowledge about new products and creating brands awareness. Majority of advertisement which were liked by youngsters and had a strong influence were from the category of cold-drinks, mobile service providers and some other food items. Unique and interesting presentation, right information and right endorser were most important reason that youngsters cited for reason of liking advertisements. It was observed that the advertisement which fell in the liking zones had a big influence on purchase intention with 13% purchased the product and another 46% have a desire to try the products. Hence, marketers needs to keep innovating and designing new methods of communication (Advertisements) for occupying a desired space in the mind of consumers. The research calls for product positioning and building brand awareness around creative and interesting presentation of idea and careful selection of celebrity whose appeals matches with the brand personality.

Keywords: Advertisement, Youngster, Product, Behavior

Introduction

The world of entertainment, especially television and internet media have seen an unprecedented upsurge in its content, variety, reach and choices for audience. TV Advertisement being the most potent and popular means of communication and grabs huge investment in form of money and efforts from the marketers (Jerry, 2008; Hinckley, 2009; Hopps, 2009; ASSOCHAM,

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2011; Kantar Media, 2012). Hence, Marketer's obvious interests are most influential consumers and lucrative markets. Indian youth offers both a lucrative market as it constitutes largest population in the world (Ministry of youth affairs and support, 2011; International labor organization, 2012) and influence in form of key member in family decision making as they have knowledge about new products because of better access modern internet media. Youth though makes a lucrative market, but have a wide range of interest and choices. Thereby, it becomes very challenging for the marketers to tap this potential market which requires designing of advertisements that attracts their attraction and arouse interest.

Advertisement has always being a prime source of communication to prospective buyers for marketers thereby building brand image and creating positioning. But, in recent years the surge in number of channels and accessibility of Television to a largest ever audience, has on one hand increased the reach of marketers and unprecedented completion for space

Table-1: Demographic Profile of Respondents

Variables	Respondents -230		Variables	Respondents -230	
	Number	Percent		Number	Percent
1. Gender			**4. Income Level (Rs.)**		
Male	142	61.7	Less than Rs 25000	50	21.7
Female	88	38.3	Rs. 25000-50000	92	40.0
2. Educational Level			Rs. 51000-75000	28	12.2
Up to 10+2	40	17.4	Above Rs. 75000	60	26.1
College Graduate	72	31.3	**5. Age (years)**		
Post graduate	118	51.3	18-22 years	80	34.8
3. Residential Background			23-26 years	86	37.4
Urban	176	76.5	27-30 years	64	27.8
Rural	54	23.5			

and occupancy in the audience mind on the other hand. Advertising has now become the most important and potent tool to persuade or influence buyers for desired outcomes by the marketers. Basically popularization of the product is a main aim of any advertisement (Ramaswami and Namakumari, 2004).

Television Advertisement and Youngsters Behavior

Television advertisement is one of the best selling, economical and most effective media of influencing the behavior of potential consumers. Through advertisement, marketers can reach a whole spectrum of consumers. The uniqueness of television advertisement over other mediums is that it perceived as a combination of video and audio features and it provides products with instant validity and prominence and offers the greatest possibility for creative advertising (Kavitha, 2006). Moreover, reactions to TV advertisements seem to be stronger than the reaction to print advertisements (Corlis, 1999). The marketers also find it more effective to use television rather than print media to reach consumers, partly due to low literacy rate (Ciochetto, 2004; Bishnoi et al., 2009). Furthermore, T.V. advertisement plays an important role in either introducing a product or reinforcing the familiarity of the product to make a better choice during shopping (Raven John et al, 2004). Use of positive characters is

one of the important factors to make advertising effective and likable. Now, advertisers and marketers have realized that young adults is a potential source of untapped target market as they spend lot of money on various items like fast food, cold-drinks, wearing, and cosmetic items, etc. They also spend their money on various household items while exercising their brand preferences. Not only this, they also influence the family purchase decisions by suggesting their brand preference (Kotwal et al., 2008, Wang et al. 2008, Bishnoi and Sharma, 2009). Thus, this paper aims to study the advertisement liking pattern of youngsters and its influence on their purchase behavior.

Objective of Research

1. To find out the most recalled and most liked advertisement by youngsters and the reason thereof.

2. To analyze the influence of TV advertisements on the purchase behavior of youngsters.

Research Methodology

The present research is exploratory cum descriptive in nature mainly depends upon primary source of information. The present paper targets the young generation in the age group of 18-30 living in the NCR areas. The study carried out an online questionnaire survey to collect the data from target

Results and Discussions

Table-2: List of Most Recalled Ads by Youngsters

Sr.No.	Recalled	Frequency	Percentage	Reasons
1	Thumps up	26	17.3	Adventurous Appeal, Slogan, Creative Idea
2	Cadbury Silk	22	14.7	Popular Brand Name, Entertaining, Emotional Appeal
3	Tata Docomo	20	13.3	Celebrity, Informative, Music
4	Mountain Dew	18	12.0	Repeated Ad, Adventurous, Uniqueness
5	Sprite	18	12.0	Innovative Idea, Slogan, Attractive Model
6	Idea Telecom	14	9.3	Celebrity, Creativity, Slogan
7	Vodaphone	14	9.3	Animation, Funny, Music
8	Pepsi	12	8.0	Celebrity, Entertaining, Slogan
9	Cadbury Gems	12	8.0	Graphics, Funny, Creative Idea
10	Maggi	10	6.7	Creative Idea, Famous brand
11	Flipcart	10	6.7	Unique Idea, Emotional Appeal, Technology
12	Mazza	10	6.7	Funny, Entertaining, Celebrity
13	Volkswagen Vento	8	5.3	Creative Idea, Technology, Funny
14	Five star	8	5.3	Funny
15	Tanishq	8	5.3	Celebrity, Funny, Informative
Total No. of Recalled Ads		150		

Source: Primary Data

population during January-April, 2012. For collecting data, the purposive sampling method has been used. In all 775 respondents were contacted, only 230 were patient enough to completely fill up the questionnaire. The data has been collected through structured questionnaire designed with the help literature review. Before conducting a full-fledge survey, the developed questionnaire was pre-tested on 55 respondents via personal interview and revised again with the help of suggested change. It was further suitably analyzed by calculating percentages, frequencies, cross-tab and factor analysis method.

With a plethora of brands and giant boost in various television advertisements, the youngsters are being bombarded with information from all type of products. Though, there are the few top most recalled ads that hit the respondents mind because of the various reasons such as creative/unique idea, adding attractive celebrity/model, interesting slogans frequently repetition, popularity of brand name or they are using the product and few other reasons. To know about recalled ad, researched asked open ended questions from the respondents and they are able to recall the advertisement of 150 products. Out of them, top 10 advertisements were chosen based on frequency of advertisement recall by respondents. Thumps up comes first in the top most recalled ads by respondents with due to its unique slogan with 17.33 % followed by Cadbury silk' (14.%) due to popular Brand name and repeated advertisement. The youngsters also give significant response to the melodious sound of Tata Docomo (13.3%). They also liked the adventurous appeal shown in cold drinks ads of Mountain Dew (12%) and sprite with its famous punch line (12%). The others most recalled ad is from mobile service providers is Idea telecom which brought it to the 6th

Table-3: List of Favorite Advertisement

Sr. No.	Favourite Ads	Frequency	Percentage
1	Cadebury Silk	22	18.3
2	Thumps up	20	16.7
3	Montain Dew	20	16.7
4	Vodaphone	20	16.7
5	Volkeswagen	14	11.7
6	Max Newyork Life Insurance	12	10.0
7	Hero Motorbike	12	10.0
8	Satyamav Jayte	10	8.3
9	Maggi	10	8.3
10	Airtel	8	6.7
	Total No. of Favourite Ads	120	

Source: Primary Data

position with 9.3% Followed by Vodaphone, Pepsi and ever growing Cadbury products especially Cadbury gems. Maggi, Mazza, Tanishq, Five Star is also take a good fight in their respective sector to their competitors. The advertisement of Filpcart and Volkeswagen also catch the youngster's attention due to their creative idea and as well as humorous appeal shown in advertisement.

For favorite advertisement, the researchers were asked open ended question and they liked Ads of 120 products. Out of them, Cadbury Silk wins the heart of youngsters by capturing 18% due to unique presentation of emotions of youngsters and good use of jingle and music followed by Thumps up, Mountain dew and Vodaphone getting 16.7% each because of the renowned brand, its presentation and uniqueness of advertisements. On 5th in the list is Volkeswagen, the newness and technological advancement bagged it 11.7% of the likes by the youngsters. The youngsters also like the Max Newyork life insurance (10%)

Table-4: Reason for Liking the Advertisement

	Response	Percent of cases (Out of total respondents)
Adventurous Appeal	70	30.4%
Creativity/ Unique idea	172	74.8%
Emotional Appeal	70	30.4%
Graphics	26	11.3%
Celebrity	92	40.0%
Expert Advice	26	11.3%
Informative	76	33.0%
New Technology	60	26.1%
Total Respondents	230	

Source: Primary Data

Table-5: Impact of Favorite Ad on Purchase Intention

If you like an Ad, then what you do after?	Age of respondent			Total
	18-22	23-26	27-30	
Purchased the product	10 (12.5%)	7 (8.1%)	14 (21.9%)	31 (13.5%)
Watched and forget	8 (10.0%)	9 (10.5%)	10 (15.6%)	27 (11.7%)
Shared with friends	26 (32.5%)	18 (32.6%)	13 (20.3%)	67 (29.1%)
Thought of buying the product	22 (27.5%)	30 (34.9%)	11 (17.2%)	63 (27.4%)
Will try the product	14 (17.5%)	12 (14.0%)	16 (25.0%)	42 (18.3%)
Total	80 (100.0%)	86 (100.0%)	64 (100.0%)	230 (100.0%)

Source: Primary Data

Table-5a: Chi-Square Test

Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	21.6419	8	0.006

focusing on honest agent. The next most favorite advertisement if from auto-mobile lover is Hero Motor bikes with 10% due to the melodious tune of AR Rahman's for Hero Motor bike (Humme hai Hero). Moreover, the youngsters also give special attention on advertisement of Satyamev Jayte due to its brand ambassador famous film star Amir Khan. The other advertisements liked by youngsters are Maggi (10%) with slight difference with Airtel with catchy tune and some sharp editing lifted it way beyond the blind-spot limbo that most high-exposure ads generally fall into.

Now when the world is moving very fast the need to catch consumer's eye has become very important by the advertisers. The table 4 shows that creativity/ unique idea (74.8%) is most important reason for liking a particular advertisement by youngsters. Another is celebrity endorsement (40%) also found

to be one of the important reason for getting youngsters' attention. The other important reasons that grabbed the attention of youngsters included informative advertisement (33.3%), adventurous appeal (30.4%) and emotional appeal (30.4%).

The table-5 presents a significant variation in distribution of respondents across various age groups regarding youngster's behavior after watching their favorite advertisement and impact on purchase intention. Chi square table supports the significant association between age group and resultant influence on purchase intention after watching the Ads. It reveals that majority of the respondents belonging to 18-22 age group, shared their favorite ads with friends whereas the age group of 23-26 respondents, had a thought of buying the products. But, the respondent of 27-30 age groups had intention to try the product

Table-6: Purpose of Watching the Ads

	Frequency	Percent
Knowledge	42	18.3
Entertainment	68	29.6
Information about new product	87	37.8
To see celebrities	33	14.3
Total	230	100.0

Source: Primary Data

Table-7: Influence of Advertisement on Purchasing Behavior

	STATEMENT	Mean Value
1	I often want to try products seen in TV Ads which I liked.	2.50
2	I thought of buying the product after watching the TV Ads	2.78
3	I feel more inclined to buy product after watching a TV Advertisement.	2.67
4	Using celebrities in TV Ads help me in remember the endorsed brand	2.40
5	TV Ads helps me to take better purchase decision.	2.37
6	I buy products seen in TV Ad because of their famous brand name	2.75
7	I feel repetitive TV Ads increase the frequency of purchase.	2.65
8	I consciously tried to watch the Ad of product which I am looking to buy in near future.	2.30
9	TV Ads with their multiple ranges of brands and products confuse me	2.73
10	I switch to other brand after watching the TV Ads.	3.09
11	TV Ads help me find the required product more conveniently.	2.32
12	TV Ads influence me to buy the product, even though I do not require it.	3.15

(25%) and substantial number actually purchased the product (21.9%). In totality, the table reveals that the age groups of 27-30 were influence most from advertisements which resulted either into purchase or intention to try the product.

The table 6 shows that majority of respondent see the advertisement to get the information about new products (37.8%) whereas 29.6% respondent watch the advertisement for entertainment purpose followed by the knowledge with 18.3%. One thing is clear from the table that the majority respondents see advertisement as a major source of information (37.8+18.3). Meaning thereby that the youngster want to get updated with current trend coming in the market. Surprisingly celebrity did not seems to be in good books of youngsters as only 14.3% respondents would like to see the celebrities shown in advertisement.

The table-7 shows that the largely, the youngsters have the positive influence on TV advertisement on their purchasing behavior. They see it as a convenient tool for making better purchased decision and as well as would like to purchase the products which they liked. But at the same time, they feel that the TV Ads does not influence them unnecessarily luring them into buying the products they don't need. Overall it can be said that the youngsters have positive perception towards the advertisement which represents a huge potential for the advertiser to harness this opportunity for targeting their potential customers.

Conclusion

Overall it can be concluded that Majority of advertisement which have a strong influence on customer minds are from the category of cold-drinks, mobile service providers and some other fast food items. The youngsters perceived advertisement as an interesting and enjoyable which help them to gather knowledge about new products and creating brands awareness. The youngsters do not see advertisement something negative as they disagree regarding advertisement creating confusion and influencing their behavior unnecessarily or creating a false brand image. For youngsters, the celebrity does not go beyond in helping them to remember the brand. As regards to the influence of advertisement on purchase intention, there seems to be positive association specifically for the age group of 27-30.

Implication of Research

Today's youth is very sophisticated one, they needs to properly target and handled, hence, company needs

to understand consumer behavior to get better results. As per the results, big number of respondents like the advertisement due to the innovative idea or unique presentation not for the celebrity endorsement as majority of latest advertisement recalled and turned into favorite advertisement do not have any celebrity endorsement i.e. Cadbury Silk, Mountain Dew, Thumps up, Sprite Vodaphone and Volkeswagen. The cheesy and loud ads will lead to short term remembrance but not positive impact on young consumer's purchase decision. Thus, instead of spending the huge amount of money on brand ambassadors, the marketers should attract the customers with a creative and interesting idea and position the product in the mind of customers. It would not only reduce the cost but also resulted into the high profits with increasing sale for the long term. But, the marketers need to be careful that only good advertisement and unique presentation does not lead to the guaranteed sale. Hence, the good advertisement may get success for attracting the consumers for one time purchase, but for long time customer retention, the quality of products should meet the customer requirement.

References

1. "Advertising Expenditure Forecasts – June 2007", ZenithOptimedia Report.

2. Adomiatis, A. D. and Jphnson, K. P. (2008), "Advertisements: Interpreting Images Used to Sell to Young Adults", *Journal of Fashion Marketing and Management*, 12(2), 182-192.

3. ASSOCHAM (2011), "Media & Entertainment in India Digital Road Ahead", http://www.deloitte.com/assets/Dcom-India/Local%20Assets/Documents/ME%20 %20Whitepaper%20for%20Assocham.pdf, Retrieved on 8th December, 2012

4. Bishnoi, V. and Sharma, R. (2009), "The Impact of TV Advertising on Buying Behaviour: A Comparative Study of Urban and Rural Teenagers", *JK Journal of Management & Technology*, 1(1), 65–76.

5. Bovee, C. and Arens, W. (1986), "Contemporary Advertising", Irwin, Chicago, IL.

6. Ciochetto, L. (2004), "Advertising and Globlisation in India, Massey University, Wellington", New Zealand. Accessed on 15th April, 2012 from www.arts.manchester.ac.uk/ecmsas/panels/ecmsaspanel17to24/panelpdfs/File.

7. Corliss L. G. (1999), "Ethnic Evaluations of Advertising: Interaction Effects of Strength of Ethnic Identification, Media Placement, and Degree of Racial Composition" *Journal of Advertising*, 28(1), 49-64

8. Crane, D. (1999), "Gender and Hegemony in Fashion Magazines: Women's Interpretations of Fashion Photographs", *Sociological Quarterly*, 40(4), 541-63.

9. Daneshvary, R. and Schwer, R. K. (2000) "The Association Endorsement and Consumers' Intention to Purchase", *Journal of Consumer Marketing*, 17(3), 203-213.

10. Dingra, Rajiv (2008), "Online Advertising Expenditure To Be 3600 Crores By 2010 in India! - ZenithOptimedia Report, Accessed on April 16, 2012, from http://www.watblog.com/2008/06/16/online-advertising-expenditure-to-be-36-billion-by-2010-in-india-zenithoptimedia-report/

11. Fam, K. S. and Grohs, R. (2007), "Cultural Values and Effective Executional Techniques in Advertising Across-country and Product Category Study of Urban Young Adults in Asia", *International Marketing Review*, 24(5), 519-538.

12. Hinckley, D. (2009), TV is Americans Preferred Form of Entertainment in 2009, says study: Why We're Tuning in. Retrieved on 8th December, 2012 from http://articles.nydailynews.com/2009-12-17/entertainment/17941856_1_recording-tv-tv-show-americans

13. Hopps. C. (2009), TV shows: The Best Means of Fun, Entertainment & Spice for our Lives, http://articles.everyquery.com/articles-tv-shows-the-best-means-of-fun-entertainment-and-spice-for-our-lives-3040.html,

14. International Labor Organization (2012), Decent Work for Youth in India, http://www.ilo.org/newdelhi/info/WCMS_175936/lang—en/index.htm,

15. Jain, V., Roy, S., Daswani, A. and Sudha, M. (2011), "What Really Works for Teenagers: Human or Fictional Celebrity", *Young Consumer*, 12(2), 171-183.

16. Jerry, A. (2008), "Televisions: The Most Popular Means of Entertainment", Retrieved on 8th December, 2012 from http://www.articlesbase.com/television-articles/televisions-the-most-popular-means-of-entertainment-428515.html.

17. Jung, J. (2006), "Media Influence: Pre- and Post Exposure of College Women to Media Images and the Effect Mood and Body Image", *Clothing and Textiles Research Journal*, 24, 335-44.

18. Kantar Media (2012), Ad's Spendings, http://www.tvb.org/trends/4705

19. Kavitha G. (2006) "A Study On The Effectiveness Of The Advertising Techniques Used In The Personal Care Segment Of Women Consumers", *Indian Journal of Marketing*, 36(8), 12-16.

20. Kotwal, N., Gupta, N. and Devi, A. (2008), "Impact of T.V Advertisements on Buying Pattern of Adolescent Girls", *Journal of Social Science*, 16(1), 51-55.

21. Martin, M. and Kennedy, P. (1993), "Advertising and Social Comparison: Consequences for Female Preadolescents and Adolescents", *Psychology & Marketing*, 10(6), 513-30.

22. Martin, M. and Kennedy, P. (1994), "Social Comparison and the Beauty of Advertising Models: The Role of Motives for Comparison", *Advances in Consumer Research*, 21, 365-71.

23. Mattila, A. S. (1999), "Do Emotional Appeals Work for Services?" *International Journal of Service Industry Management*, 10(3), 292-306.

24. Ministry of Youth Affairs and Support (2011), Report of Working Group on Adolescent and Youth Development, Deptt. of Youth Affairs, M/o YA&S for formulation of 12th Five Year Plan (2012-17), http://planningcommission.nic.in/aboutus/committee/wrkgrp12/hrd/wg_repadolscent.pdf

25. Panwar, J. S. (2003), "TV and Consumer Socialization", Consultancy Project Report Submitted to The Dainik Bhaskar Group of Publication, Bhopal, 37.

26. Panwar, J. S. and Agnihotri, M. (2006), "Advertising Message Processing Amongst Urban Children An Indian Experience— with Special Reference to TV Advertising", *Asia Pacific Journal of Marketing and Logistics*, 18(4), 303-327.

27. Petty, R. E., Cacioppo, J. T. and Schuman, D. (1983), "Central and Peripheral Routes to Advertising Effectiveness: the Moderating Role of Involvement", *Journal of Consumer Research*, 10, 135-46.

28. Ramaswami, V. S. and Namakumari, S. (2004), "Marketing Management", 3rd edition, MacMillan, India Ltd.

29. Raven J., Hoehn T., Lancefield D. and Robinson B. (2004), "Economic Analysis of the TV Advertising Market", Accessed on 12th May, 2012 from http://www.ofcom.org.uk/research/tv/reports/tvadvmarket.pdf,.

30. Richins, M. (1991), "Social Comparison and the Idealized Images of Advertising", *Journal of Consumer Research*, 18, 71-83.

31. Run, E. C. (2006), Ethnically Targeted Advertising: Views of Those Not Targeted, *Asia Pacific Journal of Marketing and Logistics*, 19(3), 265-285.

32. Saxena, R. (2008), "It's Not Working", Business Standard, The Strategist, April 22, 1.

33. Sharma, R. (2010), "Buying Behavior of Adult Consumers: Influence of T.V. Advertisements", *Exploration of Business and Management Issues*, Haryana School of Business, GJUS&T, Hisar.

34. Srivastava, R. K. (2010), "Effectiveness of Global Advertisement on Culture of India: An Emerging Market", *International Journal of Emerging Markets*, 5(1), 102-113.

35. Takeuchi, T. and Nishio, C. (2000), "The Qualitative Contents of Television Advertising and its Penetration: The Case in Japan", *Marketing Intelligence & Planning*, 18(2), 78-86.

36. Teng, L., Laroche, M. and Zhu, H. (2007), "The Effects of Multiple-ads and Multiple-brands on Consumer Attitude and Purchase Behavior", *Journal of Consumer Marketing*, 24(1), 27–35.

37. Thompson, A. www.ehow.com/info_8285845_influence-effects-tv-young-people.html#ixzz290Zkkrni.

38. Wang, X. and Yang, Z. (2008), "Does Country-of-origin Matter in the Relationship Between Brand Personality and Purchase Intention in Emerging Economies? Evidence from China's Auto Industry", *International Marketing Review*, 25(4), 458-474.

39. Wiley, J. B., Krisjanous, J. and Cavana, E. (2007), "An Experimental Study of Female Tweeners' Evaluative Beliefs Regarding Ads, Attitude Toward the Ad, and Purchase Intent for Fashion Apparel", *Young consumers*, 8(2), 119-127.

Orthogonality of Mutation Operators

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Abstract

Mutation testing has been proved to be a good technique in revealing faults in different paradigms. But the computational expenses of using the technique are the major hurdle in its practical usage. Selective mutation has been proposed as an alternative to reduce the cost by many researchers. Orthogonality is a common programming language feature which exhibits linear independence in some sense. This paper suggests the use of Orthogonality of mutation operators, to select mutation operators with unique functionality which in turn can help to reduce the cost of mutation testing. Orthogonality of different mutation operators in procedural, object oriented and declarative paradigms has been discussed.

Keywords: Cost Reduction for Mutation Testing, Mutation Analysis, Orthogonal Mutation Operators.

Introduction

Mutation testing is a fault based technique that removes the pre specified faults introduced by programmers due to minute changes in language syntax. The research in this area started in late 1970's and still in process by number of researchers. Mutation has proved to be of great help in finding errors that number of test criteria has failed to observe. It makes use of mutation operators for that purpose. In order to go for mutation analysis of even a small program a lot of computation effort is required. The complexity of mutation is $O(n^2)$ where n is the number of variable references in program as found in Mathur and Wong(1993). Many possible changes can be introduced in a small sized program that gives rise to numerous mutants of the original program. Even for a small program that represents min function and has only 3 lines 44 mutants can be generated as found in Offutt et. al (1996). All these mutants have to be executed again and again against different test cases in order to make efficient, effective and complete test sets and for removal of errors. This enhances the

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running costs of usage of mutation testing and makes it computationally expensive. And that puts a question mark on practical usage of mutation testing. There is a need for proper solution to this problem. Any possible solution should reduce the cost without loosing on mutation adequacy criteria.

Selective Mutation

Mathur and Wong (1993) has proposed randomly selected x% mutation and constrained mutation criteria to reduce the number of mutants to be examined and number of test cases to be generated for the reduction in cost of mutation testing. Selective mutation has been suggested as an option in this direction by Offutt et al. (1996) and Offutt et al. (1993). Selective mutation concentrates on reducing the number of mutants generated by selecting some mutant operators and penalizing the others. Ofutt et al.(1996) has done experimental evaluation of Mothra's 22 mutation operators and concluded that 5 of these suffice to effectively implement mutation testing. It has been shown that in terms of data references standard mutation takes quadratic time and selective mutation can be effectively implemented in linear time . Also it has been shown in experimental results that on average 50% saving in execution efforts can be done with the help of selective mutation by Offutt et al.(1993). This is a major step towards the practical application of mutation testing.

Orthogonality and Orthogonal Mutation Operators

Orthogonality of a language means independence of features and properties. Also there should not be too many ways of doing the same thing (Gupta(2004)). Experimental results with Selective Mutation testing have assured this thing that subset of mutation operators can perform equally efficient unit testing. This indicates that mutation operators are not always orthogonal .Operator M1 is said to be orthogonal to operator M2 if test cases that kill mutants generated with operator M1 cannot kill mutants generated with operator M2, and vice versa as found in Lee et al.(2004). Therefore orthogonality relates to performance as well as to the selectiveness of mutation operators. To make practical application of mutation testing, orthogonality of mutation operators can be a good measure. If all operators placed in the set are orthogonal then it means that no more operator can be deleted without loosing on the mutation criteria. Therefore the study is worth in order to reduce the cost of mutation testing.

Orthogonality of Procedural Mutation Operators

Mathur and Wong (1995) have worked on selective mutation testing and selected some different operators which were efficient as well as sufficient, that relates directly to orthogonality of operators. They have worked upon x% randomly selected mutation and constrained mutation. They have investigated the effects of varying the percentage of mutants selected from 10% to 100%. They have selected abs and ror operators for constrained mutation experimentation. They have used a set of four programs (find, strmat1,strmat2, textfmt). They have generated mutants using all mothra operators except the go to operator. They have given the following conclusions based on mutation scores.

1) using x% mutation adequacy test sets

• For Find, Strmat1, Strmat2: 1) none of the x% mutation adequate test set is mutation adequate. 2)10%, 15%, 20% Mutant adequate test sets give a mutation score of at least 96.14%, 95.21% & 94.84% respectively. 3) 25%, 30%, 35% & 40%

mutation adequate test set provide more than 98% mutation coverage.

• For textfmt: 1) 2 out of 5 40% Mutation adequate test sets are mutation adequate. 2) all 40% Mutation adequate test sets provide more than 98.15% mutation coverage.

2) using abs/ror Mutation adequate test sets

• abs/ror Mutation adequate test sets are not mutation adequate for all 4 programs.

• For Find, Strmat1, Strmat2, textfmt each of the 30 abs/ror Mutation adequate test sets give a mutation score of at least 97.67%, 97.60%, 91.48%& 92.73% respectively.

Above observations indicate that x% & abs/ror Mutation adequate test sets suffer just less than 5% loss on average mutation score.

Offutt et. al.(1993) have proposed N-selective mutation which concentrates on omitting the N most plentiful operators .They have used simple and multiple linear regression models to calculate the complexity of mutation testing. They have done experiments on 10 Fortran 77 programs and compared the mutation scores for 2-selective, 4-selective, 6-selective mutations against non selective mutation. Data indicates that the test sets that were 100% adequate for 2-selective mutation were also almost 100% adequate for non selective mutation. This shows that the 2 most plentiful operators (SVR and ASR) were not orthogonal with all others and hence can be dropped from the list for the cost effectiveness of mutation. For experimenting on 4-selective mutation testing they added SCR and CSR operators to the existing 2 and got favorable results. Even without these 4 mutation operators test sets, had an average non selective mutation score of 99.84%. Extending for 6-selective mutation testing they have omitted CAR and ACR mutant operators and concluded with an average non selective mutation score of 99.71%. All these experiments help us to suggest that all procedural mutation operators suggested by Mothra are not orthogonal.

Offutt et. al (1996) have extended the same experiments for ES-selective, RS- selective, RE-

selective mutation testing and noted the wonderful results. Average Non selective mutation score of ES-selective, RS-selective and RE-selective mutation adequate sets were found to be 99.54%, 97.31% and 99.97% respectively. This again shows that all procedural mutant operators are not always orthogonal.

Namin and Andrew (2006) have made use of 7 C applications from siemens for finding out sufficient mutant operators. They have used proteum with 108 mutation operators for C for generating mutants in the experiment. They have used 3 statistical methods(All Subsets Regression(SUB), Elimination Based Correlation technique(EBC), Cluster Analysis(CA)) of variable reduction for the purpose of reducing the number of mutation operators in the set of sufficient operators. Namin et al.(2008) have extended the work done in previous paper and suggested only 28 mutation operators as sufficient as opposed to 108 in proteum and thus having an overall cost reduction and quality enhancement This again shows that the actual number can be reduced to achieve almost same functionality with less number of mutation operators and hence are not orthogonal.

Orthogonality of Object Oriented Mutation Operators

Lee, Ma and Kwon (2004) have worked on orthogonality of class mutation operators. They have done experimental evaluation of effectiveness of class mutation operators (proposed by Ma et al.(2002)) with two java applications using Mujava tool for automatically generating and executing mutants. The number of mutants generated for both of the applications was very small. Only 5 mutation operators were applicable for the first application and they produced only 54 mutants in total. Only 3 mutation operators have generated mutants for second application and they have produced 82 mutants in all. Mutation scores for both applications show that mutation operator adequate test set killed only those mutants generated with the operator itself, except in some exceptions. All these results show maximum possibility of class mutation operators being orthogonal.

Orthogonality of Declarative Mutation Operators

In declarative paradigm work has been done on SQL mutation operators by Tuya et al.(2007) . A set of SQL mutants based on features present in a conceptual model of the database schema has been presented by Chan and Cheung (2005). Mutation operators for SQL injection vulnerabilities (SQLIVs) have been proposed by Shahriar (2008). Automatic Generation of Mutants of SQL Queries is also possible with the help of a tool named SQL Mutation as proposed by Tuya, Suarez-Cabal, Riva (2006). Tuya et al.(2007) have performed experiments on SQL Queries to explore some method to lower the cost of mutation testing on SQL transactions. They have used SQL mutation tool for automatic generation of mutants and collected SQL test suite from NIST conformance Test suite software web pages. They have performed tests for two levels: Entry SQL and Transitional & Intermediate SQL. They have used 5 different steps to complete the test sets to achieve 100% mutation scores. They have tried to find out some selective mutation operators in order to reduce the cost of testing. They have performed experiments on selective mutations according to mutant category as well as mutant type. They were not able to find out any mutation operator or category by dropping which mutation adequacy criteria doesn't suffer and reduces the cost. That shows that all of the mutant categories as well as individual operators explore some different type of faults in SQL Queries. Hence none of them performs the same job as done by other. Therefore we can conclude that SQL mutation operators are orthogonal in al most all cases.

Conclusion

Mutation operators in different paradigms exhibit different characteristics. Procedural mutation operators are supposed not to be orthogonal. Some of them reveals the same type of errors as by others. Therefore the set of procedural mutation operators can be reduced by examining the orthogonality of the operators. And hence the cost of using mutation on procedural languages can be reduced a lot. In the case of class mutation operators experiments have shown that only few operators are applicable to different

classes in different situations and they further have produced limited mutants. Almost all operators are capable of detecting some different type of faults existing in the programs, so it isn't possible to reduce the list and hence they exhibits the property of orthogonality. Also in declarative paradigms mutant operators for SQL language are found to be orthogonal. Orthogonality is a feature of programming languages that can be used very well to judge the size of mutation operators. This feature can be used successfully to reduce the cost of using mutation testing in different paradigms.

References

1. Chan, W.K. , Cheung, S.C. And Tse, T.H. (2005): Fault-Based Testing of Database Application Programs with Conceptual Data Model In Proc. of the Fifth International Conference on Quality Software, 2005. IEEE Computer Society Press, Los Alamitos, California, 187-196.

2. Gupta, D. (2004): What is a Good First Programming Language? In Cross Roads Homepage Archieve, 10(4), ACM, New York.

3. Lee H.J., Ma Y.S. and Kwon Y.R.(2004): Empirical Evaluation of Orthogonality of Class Mutation Operators. In Proceedings of 11th Asia-Pacific Software Engineering Conference (APSEC'04).

4. Mathur, A.P. and Wong, W.E.(1995): Reducing the Cost of Mutation Testing: An Empirical Study. *The Journal of Systems and Software*, 31(3), 185-196.

5. Namin, A.S. and Andrews, J.(2006): Finding Sufficient Mutation Operators Via Variable Reduction. In Proc. of 2nd Workshop on Mutation Analysis.

6. Namin, A.S, Andrews, J.H. and Murdoch, D.H.(2008): Sufficient Mutation Operators for Measuring Test Effectiveness. In ICSE '08: Proceedings of the 30th International Conference on Software Engineering, New York, NY, USA. ACM, 351-360.

7. Offutt A.J., Rothermel G. and Zapf C.(1993): An Experimental Evaluation of Selective Mutation. Fifteenth International Conference on Software Engineering, Baltimore Maryland, USA, 100-107.

8. Offutt A.J., Rothermel G., Untch R.H. and Zapf C.(1996): An Experimental Determination of Sufficient Mutant Operators. *ACM Transactions on Software Engineering Methodology,* 5(2), 99-118.

9. Shahriar, H.(2008): Mutation-Based Testing Of Buffer Overflows, SQL Injections, And Format String Bugs. Masters of Science Thesis, School of Computing, Queen's University, Kingston, Ontario, Canada.

10. Tuya, Suarez-Cabal, M.J., Riva, C.D.L. (2006): SQL Mutation A Tool to Generate Mutants of SQL Database Queries In Second Workshop on Mutation Analysis, Nov 2006, 1.

11. Tuya, Suarez-Cabal, M.J., Riva, C.D.L. (2007) : Mutating Database Queries. *Information and Software Technology,* 49(4), 398-41.

Real Estate Sector in India: Retrospects and Prospects

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Abstract

The Indian real estate sector has a huge multiplier effect on the economy and therefore it is a big driver of economic growth. Estimates show that for every rupee that is invested in housing & construction, 0.78 paise gets added to the GDP. Traditionally, the real estate sector in India was dominated by a number of small regional players with relatively low level of expertise and many times financial resources. The scenario changed for the better after liberalization. The real estate industry in India has been on a roller coaster ride since 2005. The industry achieved new heights during 2007 and early 2008, characterized by a growth in demand, substantial development and increased foreign investments. However, by mid 2008, the effects of the global economic slowdown were evident here too, and the industry took a 'U' turn. 2009- 10 witnessed substantial slowdown along with part recovery. 2011-14 is & will remain a consolidation phase after slowdown & demand is expected to rise continuously. The present paper traces the past of the India Real Estate Sector, describes its present status & focuses on the challenges it is facing. Then it discusses the ways by which these challenges can be overcome & the future prospects of this sector.

Keywords: Real Estate, Economy, GDP, FDI, Infrastructure

Introduction

Indian economy is one of the fastest growing economies of the world. The real estate industry is considered a growth engine of the economy. Thus, this sector is a critical sector of our economy. It is the second-largest employment-generating sector after agriculture. Growing at a rate of about 20% per annum, this sector has been contributing about 5-6% to India's GDP. Not only does it generate a high level of direct employment, but it also stimulates the demand in over 250 ancillary industries such as cement, steel, paint, brick, building materials, consumer durables and so on. Some of the major areas which have been greatly affected by the growth in Indian economy are Delhi NCR, Mumbai, Hyderabad, Chennai, Bangalore, Pune and Kolkata. This growth is observed in all forms of property such as commercial, residential and industrial.

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Growth of the Indian Real Estate Sector

The Indian real estate sector comprises of four sub-sectors- housing, retail, hospitality, and commercial. The sector has traditionally been dominated by a number of small regional players with relatively low levels of expertise and/or financial resources. Historically, the sector has not benefited from institutional capital; instead, it has traditionally tapped high net-worth individuals and other informal sources of financing, which has led to low levels of transparency.

India's real estate sector has witnessed two cycles over the past 15-20 years, during 1994-99 and 2004-09. Both cycles had unique characteristics, yet displayed notable similarities in the manner of their occurrence. A glance through these cycles reflects some of these peculiarities and distinctions, and helps to gauge the changing dynamics of this industry.

The genesis of India's industrial boom, which began in 1994, can be traced back to the 1991 liberalisation reforms that were undertaken by the ruling Government of the day against the backdrop of a

looming fiscal deficit crisis in the country. In addition to several other steps, investments in the real estate sector were opened up for the participation of Non-Resident Indians (NRIs) and Persons of Indian Origin (PIOs) for the first time. The massive investments into the sector that followed coincided with a broader economic and stock market boom. Developers started aggressively reaching out to the NRI / PIO community by opening offices in major NRI-resident countries. The policy-driven bullish cycle culminated in an industrial boom, thereby helping property prices to finally peak in 1995.

However, at this peak, some of the dark realities of the Indian economy started to resurface. Poor banking penetration, high domestic interest rates, a lack of transparency in the real estate sector and insufficient availability of market information, etc. became major hindrances for this growth. As a result, the market tapered off post-1995.

The second known cycle began in 2004, again having its roots in certain critical reforms. The new Telecommunication Policy, 1999 and the Information Technology Act, 2000 gave rise to an era of digitisation, creating a favourable investment climate and ample job opportunities across many Indian cities. For the first time, real estate development expanded beyond the Tier I cities, unlocking opportunities in the commercial as well as the residential property sectors.

The Indian real estate industry has been on a roller coaster ride since 2005. In 2005, the Special Economic Zone (SEZ) Act and the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) facilitated huge investments into building infrastructure to connect larger cities with 60+ smaller cities and towns - provided a fillip to investment sentiment. The full opening up of FDI into selective real estate projects provided a thick layer of icing on the cake. Consequent to the government's policy to allow Foreign Direct Investment (FDI) in this sector, there was a boom in investment and developmental activities. The sector not only witnessed the entry of many new domestic realty players but also the arrival of many foreign real estate investment companies including private equity funds, pension funds and development companies

entered the sector lured by the high returns on investments. The real estate sector has been riding through many highs and lows since then. The industry achieved new heights during 2007 and early 2008, characterised by a growth in demand, substantial development and increased foreign investments.

Rising salaries coupled with low interest rates and increased banking penetration converted every homebuyer into an investor, as properties were bought not merely for consumption but for investment even by the salaried class. By mid 2008, the effects of the global economic slowdown were evident in India, and the industry took a 'U' turn. Following the peak of the second cycle in 2008 was a large accumulation of debt with almost every stakeholder. Developers had accumulated land at increasing prices, small investors/homebuyers had taken huge amounts of loans to purchase additional houses, banks were holding stakes with buyers and developers and institutional investors were also holding stakes with developers. Globally, the collapse of Lehman Brothers triggered a panic, leading investors to deeply analyse the rationality in investments across asset classes. The ensuing economic slowdown and risk of job losses made it difficult for investors to exit from their stakes.

FDI inflow into real estate dropped significantly and what had emerged as one of the most promising markets for foreign investments experienced a downturn. In the Financial Years 2007-08, 2008-09 and 2009-10, the housing and real estate sector attracted FDIs of 8.9%, 10.3% and 11% respectively, of the total FDI in India. However, the financial year 2010-11 saw a mere 6% FDI in this sector. Despite a steep slowdown in the Indian economy and financial markets following the outbreak of the crisis, housing prices in India on an average - witnessed a limited fall. On the contrary - prices started to rise after 2-3 quarters of sharp fall, and even crossed the previous peak of mid-2009.

Further, lack of consistency in rules relating to development of SEZs, increased monitoring of the sector by regulatory agencies, tightening of rules for lending to the real estate sector and increase of key rates by the RBI several times during the last one year, have arrested the growth of the sector. There is a need

to streamline government policies and introduce reforms to boost the real estate sector.

The Present Scenario

The Indian real estate sector which has traditionally been an unorganised sector is slowly evolving into a more organised one. The sector is embracing professional standards and transparency with open arms. The major established domestic players in the sector are DLF, Unitech, Hiranandani Constructions, Tata Housing, Godrej Properties, Omaxe, Parsvanath, Raheja Developers, Ansal Properties and Infrastructure and Mahindra Lifespace Developers Ltd to name a few. International players who have made a name for themselves in India include Hines, Tishman Speyer, Emaar Properties, Ascendas, Capital and, Portman Holdings and Homex.

India ranked 20th in the list of world's top real estate investment markets with investment volume of US$ 3.4 billion in 2012, according to the latest report titled 'International Investment Atlas' by Cushman & Wakefield. Bengaluru witnessed the highest number and value of private equity investments at Rs 32.5 billion (US$ 585.57 million) in 2012, recording more than double of investment over last year, followed by Mumbai with Rs 13 billion (US$ 234.17 million) and National Capital Region (NCR) with Rs 7 billion (US$ 126.09 million) of investments. The sector is set for robust inflows of US$ 4-5 billion from overseas investors in the next couple of years, with Bangalore, Delhi and Mumbai emerging as the favourites, according to Jones Lang LaSalle, a global real estate consultancy giant. The total revenue generated in fiscal 2011-12 stood at around 314 million USD. Some projects in mass housing segments that sold well were priced in the range of Rs.4,000-5,500 per sq. ft. in areas such as Noida, Navi Mumbai and Bangalore. Projects in the Rs.16,000-19,000 per sq. ft. range in Central Mumbai, too, sold well.

After undergoing corporatisation and professionalisation, today real estate is recognized as one of the key sector contributing to the country's economic development. India's real estate sector is estimated to have a total supply pipeline of close to 3.6 billion sq ft lined up for completion in the year 2013, with about 98% of this being concentrated in the residential, said a report prepared by CBRE titled "Assessing the Economic Impact of India's Real Estate Sector". The size of the Indian real estate market is expected to touch 180 billion USD by 2020.

Opportunities for the Indian Real Estate Sector

*   **Growing Urbanization**

    Urbanisation in India has been increasing at an unprecedented rate, with almost 71 million people added to the urban population from 2001 to 2011. At this rate, close to 534 million people (greater than the combined population of the United States, Russia and France) will live in Indian cities by 2026. This offers tremendous opportunities for real estate development, particularly for housing.

*   **Growth in Household Income**

    India's household income is expected to increase by an average INR 60,000 per annum over a period of six years from 2009-10 to 2015-16. This is expected to fuel consumption and be a support base for growth in India's organised retail industry. Industry research indicates that out of the top five priorities of household spending, three categories belong to the retail segment. Also, as per the Centre for Monitoring Indian Economy (CMIE), close to 30% of a total household's income is spent on retail categories such as grocery, apparel and food & beverage. The most noticeable increase in income is likely to be observed in urban areas, which will result into further investment in the development of organised retail real estate.

*   **Growth in Information Technology / Services Industry**

    High growth in the information technology and outsourcing industry is a major demand driver for the growth of commercial real estate space in the country. This sector is the biggest office occupier in the country, comprising of approximately 70% of the entire office stock (including IT parks and special economic zones). As the IT industry grows in size, the demand for commercial real estate is likely to increase. This provides a significant opportunity for real estate

developers to step in to meet the requirements of this sector.

- **Easy Availability of Finance**

    Today, various national and multinational banks are present in India that has made the home/ property loans easily accessible. So, buying a property is not difficult even for those belonging to middle-class. Thus, it has enabled the overall growth of the Indian real estate. Demand for houses increased considerably while supply of houses could not keep pace with demand thereby leading to a steep rise in residential capital values especially in urban areas.

- **Attractive for Investors**

    All types of assets have depreciation value. Investment in property is believed to be the smartest move as chances of loss is negligible. In our country, if a person having a property of his owns it is a matter of pride for him & the attachment to the property is massive. Also, it is the most profitable investment in India.

Challenges Faced by Real Estate Sector in India

While the sector offers ample opportunities for development across verticals, there are certain intrinsic challenges that hinder growth of the sector. Factors such as high borrowing costs for developers, lack of institutional funding, liquidity issues and slow (and uneven) development of urban infrastructure are some of the key challenges facing the sector.

- Foreign investment is also a critical factor primarily on account of the capital intensive nature of the sector. While domestic financial institutions have been willing to lend to developers for real estate development, their borrowing costs are high and regulations are very stringent. Unlike developed nations, India still does not allow concepts such as real estate mutual funds and investment trusts. Such challenges limit the sources of funding for the sector, which in turn restrict private sector involvement in large scale construction activity in the country.

- Infrastructure development also plays a pivotal role in unlocking the potential of cities by decongesting city centres and developing new suburban towns and cities. The pace & level of infrastructure development in India is not very satisfactory. Increasing population and land paucity continue to exert pressure on city limits, thereby highlighting the need for a balanced development of infrastructure. Suburban towns have been mushrooming around key cities due to limited space availability and high land prices in city centres. Hence, a multi-pronged approach is required that aims at strengthening the delivery of urban infrastructure and ensure that infrastructure development precedes real estate development in order to provide for more sustainable and self-sufficient cities. Fast tracking approvals, execution and completion of urban infrastructure projects will enhance confidence in private players and will allow for greater private sector participation in real estate development.

- Obtaining the several permissions to begin construction of a project can take as much as two years. During this time, the cost of acquisition or even just holding the land for a project rises. builders are already beset with the increased costs of license costs and cost of construction.

- Economic weakness continued with the associated apprehension of employee downsizing and salary freezes, which adversely affected consumer sentiments. Persistence of adverse sentiments, high inflation and high interest rates which reduce affordability, coupled with high property prices, continue to hinder any improvement in demand.

- The industry is grappling with labour shortage. Ernst &Young reported 30% labour shortage in its report which is exerting pressure on the real estate sector. The situation is expected to worsen in next decade when the demand is expected to increase three-fold.

Key Recommendations to Encourage the Real Estate Sector

Following are some key recommendations that can help spur growth of the sector in the coming years.

- **Promotion of Affordable Housing**

    About 85% of India's housing shortage of 18.4 million units in 2012 was concentrated in the

EWS and LIG sections. In order to bridge this gap, affordable housing schemes should be promoted across the country, with active participation from the private sector. This will not only fuel construction activity across the country, but also promote growth in allied industries such as construction materials. Streamlining the approval process for affordable housing projects, augmenting the supply of land at affordable prices and subsidising construction costs through investment in innovative construction technologies are steps that will promote growth in this sector.

- **Easing Supply Bottlenecks**

    India's rapid urbanisation has fuelled demand for housing and support services across the country. However, the urban limits of our cities are often constrained by slow and uneven release of land parcels for development. These supply bottlenecks can be resolved through concerted efforts such as permitting higher density developments by increasing FSI norms, releasing land parcels for development on a sustained basis and encouraging private participation in land aggregation. Recent steps taken by the Delhi Development Authority (DDA) to implement a policy of land pooling in new development zones of the city, allowing owners to accumulate their land parcels and develop the land jointly with private players is an example of efficient management of supply dynamics in our urban centres.

- **Streamlining the Approval Process**

    The sector has been bogged down by multitude of regulatory approvals which need to be cleared by developers to commence construction. Approvals regarding building layouts, ownership, environment clearances, structural planning, utilities, amongst others, are time consuming, cumbersome and are often delayed. Hence, it is important to facilitate policy measures that streamline approval processes (both at state as well as at national level), which help in reducing the number of approvals required for real estate projects. There should be a "single window" clearance system. This can be enabled by

establishing regulatory bodies/investment boards to oversee the approval process for real estate projects, especially for large scale integrated townships.

- **Making Funding Easier**

    New instruments of funding should be permitted for the sector, amongst the most prominent of which are the Real Estate Investment Trusts (REITs). REITs could provide an additional exit route for investors and enable retail money to be channelized into the sector through a regulated network. The introduction of REITs would propel the sector by spurring capital inflows and bringing institutional credibility. Other key steps that can be undertaken to promote funding for the sector include expanding the credit limit for realty projects from the present 2.8% to as high as 25-30%, reducing borrowing costs for developers (especially from banks and non-banking financial companies) and reduce the risk weightage attached to the sector. These measures can be further supported if the government provides an infrastructure status to real estate projects (particularly large integrated townships). This will help the sector in securing long term loans at lower cost, and also avail the tax benefits provided to infrastructure sectors such as power and railways.

- **Sustained Infrastructure Upgradation**

    Infrastructure upgradation is imperative for the spatial spread of real estate in the country. The development of peripheral towns in India has largely been led by the private sector with public infrastructure not being able to keep pace with development. Hence, for the country's urban sprawl to flourish, a multi-pronged approach is required that aims at strengthening the delivery of urban infrastructure and ensure that infrastructure development precedes real estate development in order to provide for more sustainable and self-sufficient cities. Fast tracking approvals, execution and completion of urban infrastructure projects will instil confidence in private players and will allow for greater private sector participation in real estate development.

Government policies have been instrumental in providing support after recognising the need for infrastructure development in order to ensure better standard of living for its citizens. In addition to this, adequate infrastructure forms a prerequisite for sustaining the long-term growth momentum of the economy. India needs to invest US$ 1.2 trillion over the next 20 years to modernise urban infrastructure and keep pace with the growing urbanisation, as per a report released by McKinsey Global Institute (MGI

- **Engaging Retail Investors**

  Easier investment norms should be provided for end users and investors for attracting investments in the sector, especially in residential real estate. Reduced interest rates and decreasing the limit of margin money requirement will attract more retail investors towards the sector and help propel real estate demand.

- **Research & Development Activities**

  The Government must provide incentives to the public and private sectors to take up R&D activities for new building materials and technologies so that the industry can deliver low cost, affordable, sustainable and environment friendly housing and building structures.

Prospects

In the years to, the opportunities in the real estate sector will attract more global players to India and hence will help the industry to mature, become more transparent, improve management and adopt advanced construction techniques. With real estate reaching a point of saturation in developed countries and the demand and prices falling, global real estate players are looking at emerging economies such as India for tapping opportunities in real estate. Indian real estate will stay attractive due to its strong economic fundamentals and demographic factors. Moreover, there is a high level of global uncertainty looming over the developed and developing nations of the world. While developed economies are still struggling to regain their growth momentum, developing countries including India and China are expected to grow at a reasonably high rate. Investments in Indian real estate

will fetch higher returns for investors as compared to other global markets. The Union Budget 2013 is looking forward to improve the sector sentiment further and at the same time re-stimulate its growth.

Some of the recent policy initiatives which are expected to serve as a trigger to boost the investment in the real estate sector in India include:

- Foreign citizens of Indian origin have been granted permission by the Reserve Bank of India (RBI) to purchase property in India for residential or commercial purposes.

- The Reserve Bank of India in 2012 allowed established real estate developers and housing finance companies to raise up to $1 billion through external commercial borrowings.

- Foreign direct investment (FDI) in multi-brand retail was permitted. Pranab Dutta, Chairman, Knight Frank India, a real estate consultancy, felt that "This will attract foreign investment which will not only benefit the retail industry but also boost the demand for commercial real estate".

Fig. 1 shows the projected growth (in Billion Rupees) of Indian Real Estate Sector by 2015.

The year 2013 is likely to reap the benefit of the Real Estate Regulation Bill and the Land Acquisition Bill. The change in sentiment on account of these measures will certainly make 2013 a much better year in comparison to the last year. Anshuman Magazine, Chairman and MD, CBRE South Asia Pvt Ltd, said, "The potential for development and growth in the real estate sector is tremendous. It is expected to generate over 17 million employment opportunities across the country by 2025, thereby making a significant contribution to the GDP. However the industry does require the support and encouragement of policy makers in order to achieve its goals."

Conclusion

The real estate sector has transformed from being unorganised to a dynamic and organised sector over the past decade. India has huge potential to attract large foreign investments into real estate. To tap this potential the government should address issues such
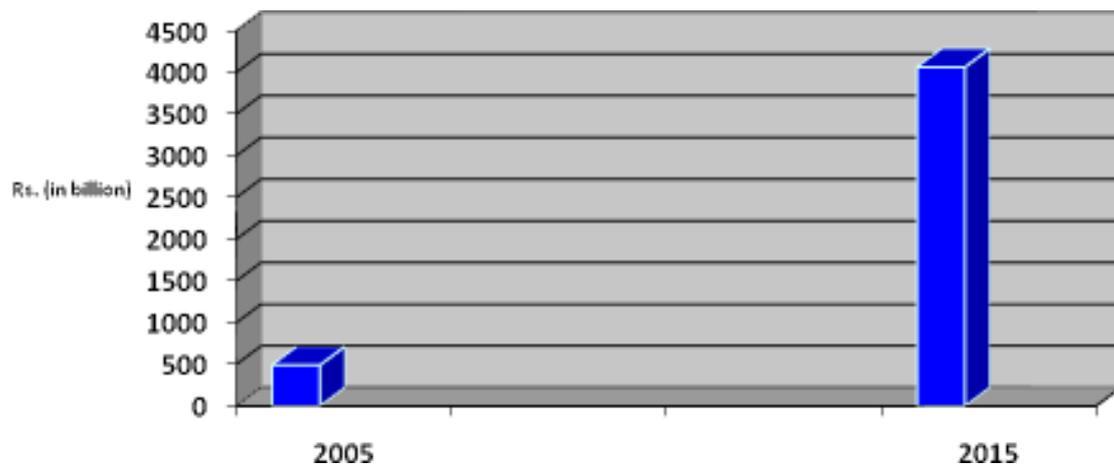
Fig. 1: Projected Growth Rate of the Real Estate Sector in India

(Source: www.empulseglobal.com)

as supply constraints related to inadequate land availability in most of our urban centres, complex acquisition process and restricted development control regulations hindering higher density developments. Other key measures include streamlining the approval process for construction, permitting new sources of real estate funding such as investment trusts, easing interest rates, promoting private sector participation in building mass housing schemes, renewal of our built environment by regular infrastructure upgradation and support to export promotion regimes such as the Special Economic Zones. An effective implementation of these policy recommendations will definitely accelerate growth in the sector and also augment the share of organised real estate in the country's built environment.

References

1. 2013 Outlook: "Indian Real Estate Sector, India Ratings & Research", 16 January 2013.

2. Bharucha, Nauzer. "Real Estate Sector to be Big Creator of Economic Opportunities in 2013: Study, TOI", Jul 29, 2013.

3. CRISIL "Customised Research Bulletin", May 2012.

4. India Real Estate Forecast for 2013, moneycontrol.com, Dec 12, 2012.

5. Outlook on Indian Real Estate Sector for 2012 Negative: "Fitch, Business Standard", September 4, 2013. India's Urban Awakening, September 4 2013, Financial Express.

6. Paridha Shradhanjali (2013), "Real Estate in Indian Context: Opportunities & Challenges", *Abhinav,* 2(2), 81-86.

7. Sahu. R. Sandeep, Shreekumar Menon (2011), "Recessionary Challenges in Real Estate Business", *APJRBM* 2(1).

8. Subbu, Ramnath, "A Lost Opportunity for the Real Estate Sector", The Hindu, December 29, 2012.

Websites
9. http://www.cbre.co.in
10. http://www.empulseglobal.com
11. http://www.ey.com/
12. http://www.ibef.org/
13. http://www.joneslanglasalleblog.com/

Need for 360 Degree Training & Development Systems in Higher Educational Management Institutes

Shilpa Wadhwa*

Abstract

An Educational Group is the primary foundation to integrate Training & Development for making a Progressive and Well–developed Nation. In this group, the employees are the teachers, on whose shoulders lay the big responsibility to create good managers and decision makers to augment the corporate world. Teachers are training their students to become good entrepreneurs in the future. Teachers also help students to develop their passion and zeal for successful and happy life ahead in whichever sector they work in.

In almost all the Educational institutes, Training & Development is only meant for students so as to provide them with good placements. Since they are the source of the revenue for the management, therefore they are the direct beneficiary. The other recipients like faculty, administration, housekeeping etc, are secondary and not encouraged. This is only partial outlook, which focuses on the immediate concern and not on the complete learning succession. All the allied individuals who directly or indirectly influence a student's personality must be involved in the Training & Development System, so as to make the entire institute a complete learning platform. If this stance is development and followed on a continuous basis, then every individual will experience a sense of achievement and triumph in whichever task he is involved in future.

In this Case Study based Research paper, an initial attempt is made to study the existing training at development system of an Educational institute, Need for 360 degree training & development systems, identifying the key Training Needs of each of the individual involved in the Management Institutes, Implementation of the training sessions to fulfill the needs.

Keywords: Management Institutes, 360 Degree Training & Development Systems

"Excellence is an art won by Training and Habituation. We do not act rightly because we have virtue or intelligence but we rather have those because we have acted rightly. We are what we repeatedly do. Excellence, then, is not an act but a habit."   *Aristotle*

Introduction

Training & Development is an integral part of any organization. Over last few decades its importance has been realized by Educational Institutions (Eraut, 1989).

The present research paper is an attempt to identify need for 360 degree training & development system in educational institute. The researcher has considered faculty members, students & staff's feedback for present study.

Objectives

1. To identify the existing Training & Development system in Management Institutes.

2. To study the Need for 360 degree Training & Development Systems.

3. To analyze the Key Training needs in the Management Institutes.

4. To develop training module and evaluate its success.

Research Methodology

For detailed analysis, case study based approach is adopted. Apeejay Institute of Technology – School of Management, Greater Noida is taken as a sample base unit for the study. With lot of brainstorming with experienced academicians, key members involved in the institute were identified.

An informal discussion was conducted to understand the functioning and role of the key members in the

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training system, various problems faced by these allied members and their genuine interest for improvement. With the positive approval and motivation to develop and implement new change in the existing training system, further a Survey, with the help of structured and customized questionnaires was developed and got filled to identify the Key Training Needs. After this, a specific Training Session was conducted and evaluation of the training session was undertaken to understand the success of this attempt.

About the College

Apeejay Institute of Technology

School of Management – Greater Noida

AIT-SOM, an off-spring of Apeejay Education Society, was established in 1997 in a sprawling campus having an area of 29 acres at one of the most prestigious locations in Knowledge Park – I, Greater Noida. The institute has emerged as the top rankers in the state of Uttar Pradesh and is among the first choice of students for admission to Management, Computer Science, Architecture and Planning Courses.

Training & Development Model in Educational Institutes
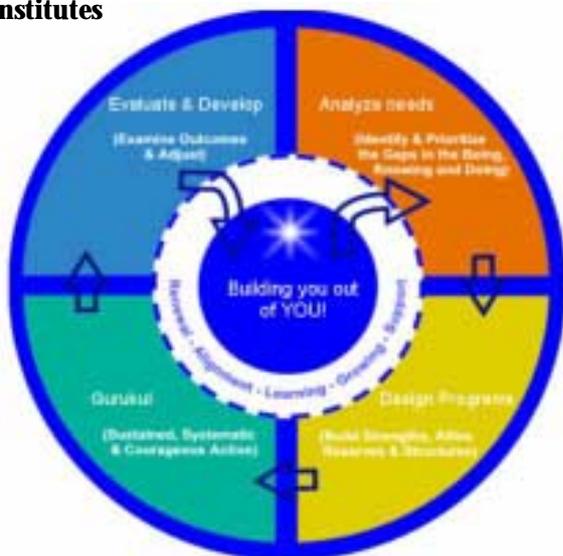
Fig. 1: Training & Development Model in Educational Institutes

In Fig. 1 Training and Development Model, four stages are distinctly categorized:

1. Analyze Needs – Identify and Prioritize the gaps in the Being, Knowing and Doing

2. Design Programs – Build Strengths, Allies Reserves and Structures for Customized Needs of Diverse Groups.
3. Gurukul – Sustained, Systematic and Courageous Actions for Effective and Efficient Implementation.
4. Evaluate and Develop – Examine Outcome and Develop further Upgraded Modules by creating a resourceful system.

By exactly using this Model, we intend to make Training & Development Cycle Complete, Comprehensive and Effectual.

Concept of 360 Degree Training & Development Model

Intellectual Capital is a real asset for an Educational Institute. In the training and development of an Educational Institute, this 360 degree approach is appropriate and resourceful strategy in escalating towards scholarly and affluent citizens of the nation. (Fig. 2)
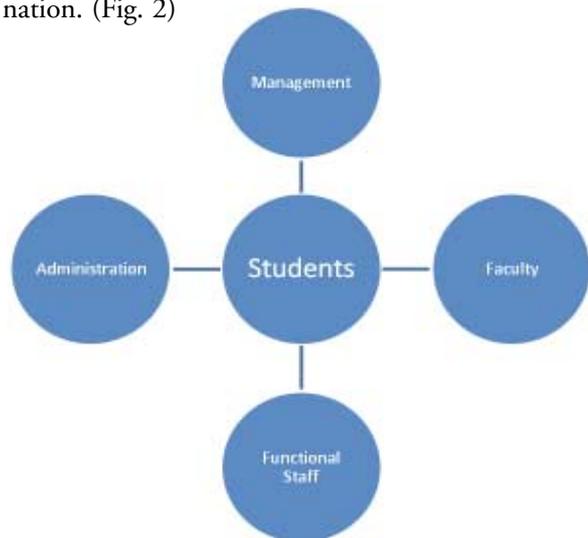
Fig. 2: Conceptual 360 Degree Model for Educational Institutes

Here first we identify all the parties who are directly or indirectly associated with the institute. After this we examine their contribution in the Institutes progress. Following this, throughout the organization, we conduct 360 degree training need survey with the help of questionnaires cum feedback form and performance appraisal forms. Next on the basis of their functional dependability we suitably segregate all the

parties in various groups and map their existing profiles with the future requirements in order to develop Personal as well as Professional Excellence. (Table-1) After apparent identification of Key Training Needs, with the help of specialized experts, we design and develop customized Training & Development Modules for specific groups. (Table-2) Then the implementation along with continuous evaluation is made from all the respective parties to bridge the loopholes wherever existed and required updation.

Table 1: Detailed Components Involved in Each Group of 360 Degree Training Framework

S.No.	Group	Members Involved
1.	Management	• Executive Director • Director • Head of the Department
2.	Administration	• Registrar • Adm. Officer • Accounts Officer • Systems In charge • HR Officer • Receptionist • Counselor
3.	Faculty	• Academic Coordinator • Examination Head • Faculty Members • Training & Placement team
4.	Students	• First year Students • Final year Students
5.	Functional Staff	• House Keeping Staff • Security Guards • Peons, Sweepers, Drivers, Electrician etc. • Other third party contract labors

To Identify the Appropriate Training Need Requirements and Study Report, subsequent details have been considered.
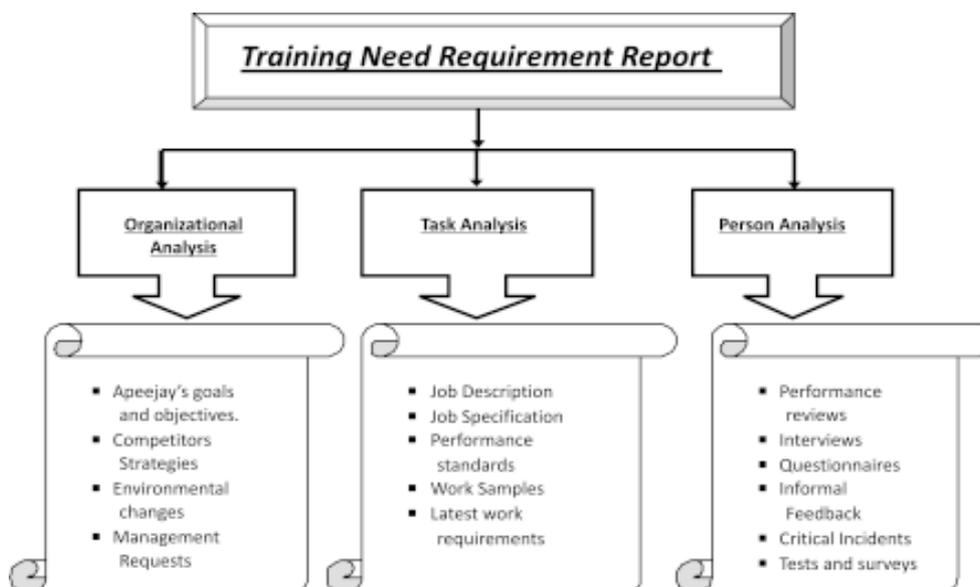
Fig. 3: Training Need Requirement Report

Table 2: Training Requirements

S.No.	Group	Key Training Needs
1.	**Management** Executive Director Director Head of the Department	• Leadership Development • Effective Negotiation • Sensitivity Training • Updating with Technology • Work Life Balance

2.	**Administration**
	Registrar
	Adm. Coordinator
	Accounts Officer
	Systems In charge
	HR Officer
	Receptionist
	Counselor
		• General Administration
		• Effective Negotiation
		• Team Management
		• Work Life Balance
		• Functional Proficiency
		    Accounts
		    Inventory Mgmt
		    Record Keeping
		    IT Skills

3.	**Faculty** Academic Coordinator Examination Head Faculty Members Training & Placement team	• Research Orientation • Presentation Skills • Management of Change • Work Life Balance • Up gradation of technical skills
4.	**Students** First year Students Final year Students	• Communication Skills • Business Etiquette • Presentation Skills • Behavioral Training • Industry Awareness
5.	**Functional Staff** House Keeping Staff Security Guards Peons Other third party contract labors	• Communication skills • Discipline & Vigilance Procédure • Waste Management • Time Management • Work Life Balance

• Used questionnaires to collect the information from all levels.

• Other non documental and confidential sources are also used to collect the information at various levels.

After assessing the training requirements of the Apeejay Institute and the resources available, selected training sessions were conducted. In this training session all the individuals were encouraged to participate and specific modules within the training session were customized to benefit all the members involved in the training process. (Table-3)

After the completion of the Training Session, feedback responses of the respondents were taken via a systematic feedback form and personal interaction in between the training sessions, break time and at the time of high tea at the end. The feedback response, from the feedback form was used to analyze to response of the audiences and for further scope of improvement. (Fig. 4)

Table 3: Overview of the Training Session on Work Life Balance

S.No	Particulars	Details
1.	Training Session	Work Life Balance Maintaining Balance between work life and personal life has become a significant issue for working professionals and organizations. With increasing demand on one's time and efforts, an individual finds himself at a loss as to how to balance the two aspects of his life so that he can derive happiness, satisfaction and good health side by side growing in his work life to higher positions of achievement. This Programme is intended to facilitate an understanding of the issues concerning work life balance and to suggest techniques and solutions for striking a balance between the "Rewarding Career and Getting Paid" in work life and enjoying a happier personal life, so that one can lead a balanced life, where one can spend his energy and efforts, emotional, intellectual, imaginative, spiritual and physical key areas of human activities that make him feel important. Special focus on Quality of Work Life (QWL) in organizations has been given to keep employees happy, healthy, committed and engaged. Means and ways of managing stress will be suggested.
2.	Session Objectives	• To facilitate the understanding of issues in work life balance. • To bring about more value and balance in daily life. • To enable development of improved relationship, both on and off the job. • To learn technique for managing stress at individual and organizational levels. • Improvements in productivity, commitment and teamwork.
3.	Training Methodology	The training will be imparted by eminent faculty from industry and Academia and the methodology will be interactive. Training Inputs will be delivered through presentations, case studies, group discussions and hands on exercises.
4.	Contents	• Issues of Work Life Balance, Managing Time and Relationships, Personal Happiness and Productive Quality of Work. • Organizational Framework for improvement in Satisfaction from work, making effective Delegation, Support Structure. • Art of saying No when Yes is compelled, Distressing of Individuals at work and in family, through meditation, Monitoring of family life, physical and mental health of executives and strategic solutions for Work Life Balance.
5.	Training Aids	Power Point Slide Presentation, Video Clips, White Boards was used as Teaching aid.
6.	Reading Material	Handout to participants, which is a self-sufficient reading material, is included in the training kit.

Fig. 4: Training Program Details

Fig. 4 indicates very clearly that in all the parameters of the Program, various factors like content, approach, relevance, objectives, pace console, handouts, etc.

- The main part of any training program is the content. The respondents majorly said very good and good as the topic was subjective and we were able to generate through the discussion few different areas which could be included in the next session.

- The Approach adopted in this case was flexible to the requirement of the audience, overall the result was very good, but at some time in the session, due to diverse group some of the respondents felt lost and could not be convinced.

- From the point of view of Relevance – the Respondents found this topic and its learning very relevant in today's competitive work environment and living style, especially for the women gender. These were some issues faced by everyone which very difficult to answer.

- With regard to the objectives achieved, the results were very good, but further areas of improvement were identified.

- Due to the diverse group of people, shortage of time and vastness in the topic, individual attention could not be maintained throughout the session, further contact number was given for guidance and support when required.

- Lot of handouts and take a ways were distributed and online resources were also made available to the respondents, practical exercise session was also conducted for short time, which was highly appreciated by all.

- Later it can also be seen that relevance has outstanding feedback as highest amongst all Average and Poor score are minimal.

All this indicates a positive response.

Conclusion

The initial attempt is real worth its efforts, as it has expanded the horizons of Training & Development from the root level to the subunits till higher levels and explained the future long term benefits in the overall successful growth of the Institute as depicted in Fig. 5.

Benefits of Training & Development

Organisation
Apeejay Institute of Technology- School of Management

1. Systematic & Well organized means of learning and training for all members.
2. Overall Involvement & participation of all interested parties for further growth & progress of the Institute.
3. Helps in developing new Models and creating innovation in diverse fields of education.
4. Helps in building loyalty and trust in Organisation.
5. Creating presence and in-building Goodwill in the Education sector.
6. Best way of wealth maximization.

Learner/ Trainees
- Management
- Faculty
- Administration
- Students
- Functional Staff

1. Learning will be active experience for all the participants.
2. Training will be stimulating, engaging & persuasive through interaction and discussion.
3. Customized approach for each group and different participants.
4. Informal way of learning.
5. Makes effective use of the dead time in lean period.
6. Best platform for Innovation & creativity.
7. Opens the window of Interface - communication between all levels of learners.
8. Accommodates and understands diverse learning styles.
9. Builds Sensitivity to different Individuals learning behavior.
10. Easy way of upgrading the knowledge and thereby building Intellect.
11. Identifying competent and unproductive members and then allocating work accordingly.

Trainers/Instructor
- In house trainers
- External trainers

1. Finest dais to develop and apply learning and training styles.
2. Understanding and analyzing the explicit problems of each group and giving them appropriate solutions.
3. Identifying the gap between dissimilar thinking pattern, learning habits and final use in work setting.
4. Analyzing novel dimensions and mounting further case and contents by discussing with experienced academicians and management.
5. Edifice long term relationship with the people of diverse age group, experience, qualification, personality and work style.

Fig. 5: Benefits of Training & Development for Educational Institutes

Annexure Questionnaires

Questionnaire for Students

All the information will be kept confidential and will be used only for research/project work.

1. Personal Details

     Name ……………………   Course ……………………
     Gender – M/F…………..   Age ………………………
     Email Id ………………...

2. Academic Information:

Particulars	Board/University	Course (Subjects)	Aggregate %	Awards
Xth				
XIIth				
Graduation				
Any other				

3. Work Experience:

Organisation	Time Period	Profile	Achievements

4. Areas of Interest
   a. Marketing   b. Finance   c. HR   d. Production   e. IT

5. Rate yourself on the scale of (1 to 5)

S.No.	Particulars	1 Very Rarely	2 Rarely	3 Some times	4 Mostly	5 Very Often
1.	Do you sometimes say to yourself "I know what I mean, but I can't explain it?"					
2	I take time to define the meaning of my most important words and phrases to ensure people understand exactly what I am saying					
3	I sometimes talk irrelevant without any logic in formal atmosphere.					
4	I am not able to listen attentively without interruption to somebody with whom I disagree					
5	I get easily distracted					
6	I plan my tasks but hardly any of my plans lasts longer.					
7	I am not able to balance between work and rest.					
8	I generally make others wait for a meeting.					
9	I usually get tensed and take hasty decisions when not able to finish my task on time.					
10	I cannot retain a positive mental attitude during difficult times.					
11	I want to learn methods that allow me to shield myself from negative influences					
12	In spite of having plenty of job opportunities in the market place, I feel that I can't make a place for myself.					
13	I try to learn from mistakes.					
14	I don't know my own strengths and weakness					
15	When in conflict I am not able to maintain patience and over burst with anger					
16	I never tried any method for self-improvement.					
17	I try my best to help others in difficult times.					
18	I believe in hard work and not on destiny					

What skills you feel is required to boost up to your career progress?

Questionnaire cum Feedback form for Management, Faculty and Administration Staff

All the information will be kept confidential and will be used only for research/project work.

1. Personal Details

   Name ....   Designation ....

   Gender – M/F ....   Total Service ....

   Email Id ....

2. Academic Qualification:

Particulars	Board/ University	Year of Completion	Course (Subjects)	Division/ (Aggregate %)	Awards
Graduation					
Post Graduation					
PhD/ Research					
Any other					

3. Work Experience: Academic + Industry

Organisation	Time Period	Profile	Achievements

4. Area of Specialization

   a. Marketing   b. Finance & Accounting   c. HR   d. Production   e. IT   f. Economics
   g. Research   h. Engineering   i. Medical   j. Fine Arts   k. Any other (specify)

5. Rank your overall Performance on the following parameters :

S.No	Particulars	1 Out-standing	2 Very Good	3 Good	4 Average	5 Poor
1.	Job Knowledge					
2	Planning & Systematic Working					
3	Cooperation & Coordination					
4	Accountability & Responsibility					
5	Initiative & Drive (positiveness)					
6	Resourcefulness (Cost Consciousness)					
7	Technical Skills					
8	Communication Skills					
9	Creativity & Innovation					
10	Team Building					
11	Leadership					
12	Interpersonal Skills					
13	Ability to Adapt Change					
14	Professional etiquettes					
15	Relationship Building					
16.	Loyalty towards the organisation					

6. What are the areas in your Work Profile in which you need improvement & enhancement?

....

....

7. Among the following skill set, which you feel would be appropriate to develop and enhance your Job Requirements and facilitate in further career growth.

All-purpose Training
- Time management
- Team Management
- Updating IT skills
- Disciplinary training
- Effective Planning & Implementation
- Conflict Management and Negotiation Skills
- Work Life Balance and Meditation
- Stress management
- Professional Etiquettes

Management related Training
- Leadership Training
- Management of Change
- Sensitivity training
- Goal setting skills
- Cost – Benefit Training
- Innovation & Creativity
- Emotional Intelligence

Faculty related Training
- Presentation Skills
- Innovation & creativity
- Subject Enrichment
- Research Orientation
- Cases and Content Building
- Sensitivity Training
- Emotional Intelligence

Administration related training
- General Administration
- Inventory Management
- Record Keeping
- Interpersonal Relationship Building
- Coordination and control skills

8. Any other Suggestion

Questionnaire cum Feedback form for Functionary Staff

(To be filled by Interviewer by asking questions and noting the details through Personal Interview)

All the information will be kept confidential and will be used only for research/project work.

1. Personal Details

Name ……………………………   Gender – M/F ….   ………..

Age……………........................   Martial Status…………….

Home Town………………………

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2. Official Details
   - Basic Educational Qualification…………………………………………..
   - Additional Qualification………………………………………………..
   - Language in Use………………………………………………………..
   - Designation……………………………………………………………..
   - Total Service Period……………………………………………………..
   - Contracting Agency……………………………………………………..
   - Service in Apeejay………………………………………………………
   - Work Timings…………………………………………………………..
   - Monthly Income (Approx.) …………………………………………………

3. Do you have complete knowledge about your duties and responsibilities associated with your Job Mention few of them in detail?
   ………

4. Do you have previous experience in this designated role and Is there any training and guidance provided to you before starting the work? If yes mention the skills developed?
   ………

5. What are the parameters on the basis of which your performance is judged and contract is renewed?
   - Duties Performed
   - Punctuality and Discipline
   - Efficiency & Effectiveness
   - Overall Interaction
   - Relationship with supervisor
   - Feedback

6. Are you satisfied with the Contracting Agency (Salary and Services) and clients for which you are hired (Cooperation and Work Environment)?
   …………………………………………………………………………………………………...........

7. List out the areas where you find problems in carrying out the assigned work?
   …………………………………………………………………………………………………...........

8. What according to you can provide better Work Performance?
   …………………………………………………………………………………………………...........

Any other Suggestions
………
………

Training Evaluation cum Feedback Form

Date:

1. General Details
   - Program Title:
   - Name of the Participant:
   - Occupation:
   - Name of the Organisation:
   - Designation:
   - Email Id.:

2. Share your experience about the training session and give your responses on the following:

S.No.	Particulars	1 Out-standing	2 Very	3 Good	4 Average	5 Poor
1.	Program • Content • Approach • Relevance • Objectives Achieved • Pace console for Personal Understanding • Handouts and Take-a ways					
2	Speaker's Performance • Subject Knowledge • Communication skills • Presentation • Time management • Encouragement to participants • Queries Handling					
3	Program Organisation • Information and Guidance • Arrangements • Infrastructure • Hospitality • Cost Effectiveness • Association and Relationship development					
4	Overall Utility and Effectiveness					

3. List out certain important things you have learnt and will be helpful in future from this Programme?

   ....

4. State some areas to make this program more effective and productive?

   ....

5. Will you suggest and recommend this Training session to others?   Yes   No

6. Potential References (if any)

   Name   Email/Mobile no.

References

1. American Society for Training & Development (1999)." ASTD Trainers Toolkit Job Descriptions in Workplace Learning and Performance". Alexandria, VA: American Society for Training & Development.

2. Allcock, R.S. (1988) Development Training: "A Personal View, Endeavour Training", Birmingham

3. Beyer, B. K. (1995). "How to Conduct a Formative Evaluation. Alexandria, VA": Association for Supervision and Curriculum Development.

4. Elkin, S. (Ed.) (1996) "Development Training Beyond 2000", Conference Report, Brathay Hall Trust

5. Eraut, M. (Ed.). (1989). "International Encyclopedia of Educational Technology (Advances in Education)". New York: Pergamon Press.

6. Indian Society of Training & Development – Govt. of India. Tool Kit and Resources for Training & Development .

7. Kinlaw, D. C. (1996). "Facilitation Skills: The ASTD Trainer's Sourcebook". New York: McGraw-Hill.

8. Munson, L. S. (1992). "How to Conduct Training Seminars": A Complete Reference Guide for Training Managers and Professionals (2nd ed.). New York: McGraw-Hill.

Accounting in 21st Century: A Review

Himani Gupta*

Abstract

This research paper includes an analysis regarding the accounting topics related to academics and organizations that practices it. The aim was to explore if a gap exists between the theory & practice of Management Accounting. For this researchers made a questionnaire for both academics and practitioners. The practitioners' questionnaire was made into a Google doc and the links were sent to different companies. Then the responds were collected and analyzed. The analysis has been done in several ways. Mean and mode was calculated to asses the most used or preferred topic. For the non-numeric data, the different types of variance was analyzed.

Primary data was collected with the help of Academic questionnaires from educational institutions. Another sample was collected from employees working in various organisations. Respondents were asked to rate the importance of 21 Management Accounting topics using a five point likert-type scale where (1 indicating not important, 2 indicating ok, 3 indicating average, 4 indicating important and 5 indicating extremely important). The questionnaire for the research had been classified into 8 groups: costing system, performance evaluation, budgeting, cash flow management, transfer pricing, behavioral implications, computer systems (ERP & SAP) and responsibility accounting. Separate questions related to the skills and characteristics for effective communication of Management Accounting information were attached in addition with a same pattern of likert-type scale for our respondents to rate them with ease.

Keywords: Costing, Management Accounting, Budgeting Cash Flow Statement, Responsibility Accounting.

Introduction

During the 1980s Kaplan, in his review of The Evolution of **Management Accounting, and with Johnson** in the **Relevance Lost** book, leveled strong criticism at the management accounting practices of the day. He claimed that:

"Virtually all of the (Management accounting) practices employed by firms today and explicated in leading cost accounting textbooks had been developed by 1925…there has been little innovation in the design and implementation of cost accounting and management accounting control systems."(Kaplan, 1984, p.390)

Since then, and perhaps in response to these criticisms, a number of innovative management accounting techniques have been developed across a range of industries. The most notable contributions are actively based techniques, strategic management accounting and the balance scorecard. These techniques have been designed to support modern technologies and

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management processes, such as total quality management and just-in-time production systems, and the search for a competitive advantage to meet the challenge of global competition.

It has been argued that these 'new' techniques have affected the whole process of management accounting (planning, controlling, decision-making and communication) and have shifted its focus from a 'simple' or 'naïve' role of cost determination and financial control, to a 'sophisticated' role of creating value through improved deployment of resources.

Management accounting has undergone a transformation over the years. However, a constant theme in management accounting is that its role is to provide what a business requires and what managers need and want. This contrasts strongly with financial accounting which is governed by external laws and standards. In the commercial environment, Chartered Management Accountants help organizations establish viable strategies and convert them into profit, or value for money in a not-for-profit context. To achieve this, they have to work effectively in multi-skilled management teams.

Change is needed in the methods, approach, and function of management accountants in most Western companies - if we are to be relevant and useful in these increasingly challenging times. The focus of management accounting needs to move from cost to value creation. Our planning and performance management must start with the needs of the customer. The role of the management accountant must move from collector and presenter of financial data to team-member and change agent. Management accounting systems must move from transaction-heavy inspection and reconciliation engines, to lean and vital providers of business insight.

While this article emphasizes lean manufacturers, the principles are applicable to a wide range of organizations.

The fundamental role of management accountants in 21st century companies is to support the creation of value for the customers. Traditional management accounting emphasizes such issues as the control of the organization through the planning and tracking of costs, full utilization of resources, the integration of management accounting with the company's financial accounts through inventory valuation and full cost absorption, optimizing efficiency through the comparison of "actual" costs to predetermined standards, and so forth. The change taking place in forward-thinking manufacturing companies place the emphasis upon the creation of customer value.

Value creation starts with the customer. Everything we do as manufacturers must be focused on customer needs and desires for products, services, and other value-added offerings. Our existing customers understand the value we create for them. But our customers may not be aware of their future needs; and we must anticipate and innovate to create new value; through innovative products, services, and processes. It is vital that we understand the value we provide to the customers; both now and in to the future. At the end of the day, our companies will only prosper when we provide increasingly high levels of value to the marketplace.

Academic accounting studies are often conceived as applied research in that the focus of study is made up of technologies and technical practices used by accounting practitioners in social and organizational settings. This stands in marked contrast to the physical sciences where the focus of study is mainly physical matter. The impact of research in some disciplines is easy for the lay person to comprehend such as in medicine, where advances in medical procedures and development of new drugs result in benefits to society. For accounting, this impact is not so easy to discern. For instance, in the field of accounting there have been claims that research has become too far removed from the interests from the professions and practitioners.

The main purpose of this research is to report on forum that investigated contemporary challenges in the relationship between academic accounting skills and professional practices.

Objectives

Management accounting curriculum has been the topic of considerable debate over 25 years in terms of whether a gap lie between theory and practice. An early US study (Deakin& Summers 1975) surveyed practitioners to determine what management accounting topics they thought were useful. Knight & Zook (1982) reported in their study of controllers' ratings of management and financial accounting topics that the two groups differed in their emphasis on the list of topics. And, their study further provided insights into the topics that have the greatest relevance for management accounting.

Scapens (1983) focus on "the gap between theory and practice" in management accounting and criticizes sophisticated mathematical techniques appearing in textbooks as having limited adoption in practice. Practitioners, he argues, must be able to see the relevance and understand the results of academic research. Scapens (1983) believes that more academic study must be conducted on management accounting in practice in order to be relevant to practitioners.

To explore if a gap exists between the theory and practice of management accounting, Edwards & Emmanuel (1990) compared academic publications in two accounting journals and surveyed the

rankings of topics by practitioners. Their results indicated that organizational and societal issues were important to academics, while the practitioners focused on the technical aspects of management accounting. Edwards & Emmanuel (1990) concluded that the differences between academics' and practitioners' views arose from academics adopting a theoretical framework to study management accounting in terms of organizational and societal dimensions. In contrast, feedback from practitioners indicates that they would like to see academic research to be more relevant to practice.

Our prime objective is based on above contradictions of researches of Management and accounting Gurus and they are as follows:

➢ To find whether gap exists between theoretical management accounting studies and real business practices or not.

➢ To compare the effectiveness and efficiency of theoretical skills acquired in workplaces.

➢ Our core issue would be the accountancy learned in the 21st century and how accurately well is it practiced around the globe.

➢ To differentiate academically acquired accounting skills/education and skills gained by practically involved in cases.

Methodology

For the topic 21st century accounting had to gather information regarding the current format being applied to business accounting as compared to the theories and method we learn in accounts. Two separate set of questionnaires were sent to the academic institutions and the firms with open and close ended questions attached to a Google doc. and sent to academic institutions & business firms. Data was analyses, tabulated and inferences were drawn from it.

Literature Review

As we all know there has been a vast change in the field of business management and accountancy in the last several decades, which had definitely brought about a change in the way of working in day-to-day

lives of many. Technology and globalization of business management has influenced the working of many firms and has made the traditional methodology obsolete.

Our main concern was that all our learning accounting today through books and teaching at university might get obsolete and may not be of much in the future. We have studied that over years of accounting, practices, methods and techniques have changed due to globalization and the introduction of technology.

Most of the articles informs that there has been a shift in the way we learn accounting and the way it is practiced in the real world especially during the changing world today as we experience a heavy load of technology which is changing every second. The articles states that few have benefited due to this change and have made lives easier at work place. As our concern remains that what we learn is not what we exactly practice, is that fair and just. Moreover the article states that management accounts and financial accountants have accustomed to this change and also do believe the working will further change due to globalization and introduction of technology in our lives.

A UK study by Bright, Davies, Downes & Sweeting (1992) on the deployment of costing techniques, found that many manufacturers were still developing or even introducing traditional management accounting techniques. Bright et al. (1992) also had concerns about how manufacturers were implementing advanced management accounting techniques, with inconsistencies between the theories of the techniques and how they were being applied in practice. Ainikkal (1993) surveyed the top 200 and 42 smaller New Zealand companies to examine the uptake of advanced management accounting techniques. His results indicated that manufacturers still relied heavily on traditional management accounting techniques. Over 65% of firms were using volume-based measures for overhead allocation, despite widespread support of ABC by academicians such as Kaplan & Cooper (1988). Reasons given for using traditional management accounting techniques by over 80% of the respondents were that they still

found them useful. Chenhall & Langfield-Smith (1998) considered Australian adoption of advanced management accounting techniques. They reported that while most firms had adopted some form of the advanced techniques, traditional techniques were still the most widely used. Most manufacturing companies, however, indicated that they would be placing greater emphasis on advanced techniques in the future. Chenhall & Langfield-Smith (1998) conclude that it may be premature to assume that traditional management accounting techniques lack relevance to manufacturers.

A New Zealand study by Adler, Everett & Waldron (2000) attempted to find the up-take of advanced management accounting techniques by New Zealand manufacturers. Despite the years between Ainikkal (1993) and Adler et al.'s (2000) study, only a minority of New Zealand manufacturers have adopted advanced management accounting techniques. Similar to Ainikkal's findings (1993), traditional management accounting techniques such as standard costing were still popular with manufacturers. They found that advanced management accounting techniques were more likely to be adopted by larger firms. Significant barriers to adoption of these techniques were found to be in the area of human resources with a lack of skills, time factors and management indifference cited. It appears from these findings that management accounting practice requires knowledge of both traditional and new techniques from graduates entering management accounting practice. they would be placing greater emphasis on advanced techniques in the future. Chenhall & Langfield-Smith (1998) conclude that it may be premature to assume that traditional management accounting techniques lack relevance to manufacturers.

Research Design for Academic Questionnaire

Questionnaires were printed for collecting primary data. This helped connecting to a good number of respondents coming from various academic institutions (including private/government campuses and universities) and provided us sufficient data for statistical approaches. In addition, face-to face interview with experts were carried out to refine the

questionnaire and check the reliability of it. Research is based on the data collected from the responses of 39 respondents working on various positions of recognized colleges and universities of India.

The questionnaires were sent to 131 institutions in April, 2013 via Emails that were attached to Google doc. where we managed to collect 32 responses from the most appropriate persons of the institutions. (Table-1)

Respondents were asked to rate the importance of 21 Management Accounting topics using a five point likert-type scale where (1 indicating *not important* ,2 indicating *ok*, 3 indicating *average*, 4 indicating *important* and 5 indicating *extremely important*). The questionnaire for the research had been classified into 8 groups: costing system, performance evaluation, budgeting, cash flow management, transfer pricing, behavioral implications, computer systems(ERP & SAP) and responsibility accounting. Separate questions related to the skills and characteristics for effective communication of Management Accounting information were attached in addition with a same pattern of likert-type scale for our respondents to rate them with ease. A covering letter described the purpose of the study and assured the confidentiality of their responses. Analysis of the research is as follows:

Data Analysis for Academic Questionnaire

1. Costing system: Traditional absorption costing system has long been a subject of critics. During the last two decades, the problems of traditional absorption costing were again brought into spotlight. This time the focus of criticism was that these systems don't accurately measure costs for decision making purposes.

   Respondents were asked to rate how important they were for meeting the more accurate cost information for decision making purposes and their ratings are summarized as follows:

   Merely 3.67% of the respondents (institutions) that filled questionnaires regarded various costing systems not important compared to 26.66% of them which rate as extremely important. Contrary to these figures, most respondents' ie. 30.5%

choose costing systems are *important*. The combination of our findings in this group (costing systems) suggest that Product costing is more favored (46%) in decision making processes to other contents of costing such as Process costing and Standard costing (0% for both).Also,46% and 38% were the rates noticed for Process costing and product costing responded by our respondents as *important* which were the highest percentages of votes based on their usages. Remaining costing systems and their rates were not favored of mentioning as they were less frequently used to Process costing and Standard costing.

2. Budgeting: In theory we have learnt about budgeting its pros and cons. Helps managers to forecast and with the limit budget could use certain strategy toward achieving economic of scale. Here are the respondent from the candidate regarding whether budgeting is important in real life or just in theory. for operational budgeting respondent response were 4 and 5 meaning it's very important and they are following the practice of operational budgeting method as for capital budgeting again they have voted for 4 having 38% and 5 which is very important has 53% .Thus budgeting overall is an important aspect in order to carry out smooth running of firms.

3. Performance evaluation: Its regarding the efficiency of the worker put in. where the responses from the candidate were 4 with 46% which is important in perspective of the firms in order to equal opportunities pays according to their effort.

4. Cash flow management: 46% voted 4(important) in scale 1 to 5 and 38% feedbacks were on 5 (very important). These degrees from the real picture depict how essential cash flow management to the manager in order to have free flow and be accountable for.

5. Behavioral implication: Scale up to 1 – 5 majority of the voted 3 with 46% as its believed that it's neither that important nor not important .so one must carry out certain code of conduct (ethnicity) in that particular firm.

6. Computer systems: Now days with globalization and constant change in the technology sector worker should be aware of basic knowledge in computers as most business now run in computer to keep record etc unlike the register system and when asked about the weightage it carries of current firm they respond 2 with 38% which shows basic knowledge if required by the worker higher possibilities for newer opportunities.

7. Responsibility accounting: 3 rating with 38% response shows it's neither that important and not important as one should be accountable for his action, presence of mind.

Research Design for Practitioners Questionnaire

For our research we had made the following questionnaire. The questionnaire was made into a Google Doc and the link was sent to more than 500 people in different companies who practice accounting in their daily life.

We got a total of 30 responses which was enough to carry on with our research.

The analyses of responses is follows:-

The questionnaire was divided into three sections and was divided according to the following:-

Section I dealt about the age, qualification, number of years in management accounting, turnover of the company in dollars, number of product/services and industry classifications of the respondents.

In Section II we had asked how important the management accounting topics are in their work were.

In Section III we had asked to indicate how important the skills are while practicing Accounting.
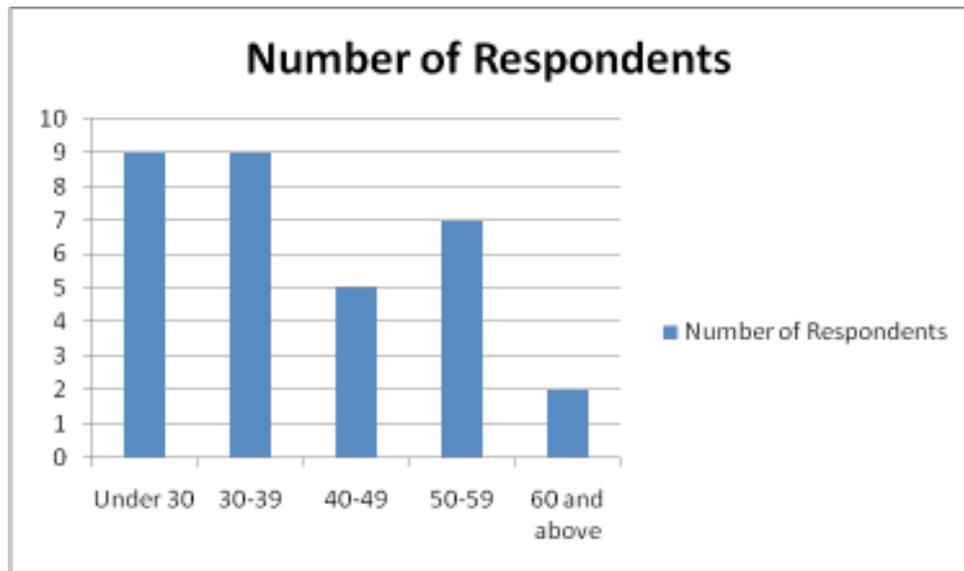
In Section IV the respondents were asked about the importance of the characteristic.

Data Analysis for Practitioners Questionnaire
Section I

Section I dealt with the age, qualification, number of years in management accounting, turnover of the

Table 1: Age Groups of Respondents

Age Group	Number of Respondents
Under 30	9
30-39	9
40-49	5
50-59	7
60 and above	2

Fig. 1: Age Group of Respondents

company in dollars, number of product/services and industry classifications of the respondents.

• Age

Age was classified into five groups, they are –

Under 30, 30-39, 40-49 and 60 and above. Out of the 32 responses, these were the data ages.

This shows that the most number of respondents were form the age group under 30 and 40 to 39 whereas the least number of respondents were from the age group above 60. (Fig. 1)

• Type of Degree

All respondents had a degree. 26 of them had Masters Degree, 5 of them had Bachelors degree and one of them had professional qualification.

• Current Job Titles

The respondents were from different level of the company. The various job titles were Financial Manager, manager, CEO, Head of Priority, Auditor, Accounting vice president, Bookkeeper, Accounts supervisor, Certified Public Accountant, Employee, Employer, Assistant Director of Finance, Senior Auditor, accountant, Environmental Auditor, Budget manager, Cost Accountant, Accounting Director, Accounting clerk, Accounting manager, Audit supervisor, External Auditor, Budget Analyst and Chief Accounting Officer.

• Number of Years in Management Accounting

The respondents were asked the number of years they worked in Accounting Field.

The least number of years worked: 1 yr

The most number of years worked: 23 yrs

Average number of years worked of all respondents: 11 yrs

• Turnover of the Company

Out of 30 responses, the turnover of companies in which the respondents worked in are given in Fig. 2.

Table 2: Turnover of Companies

Turnover of the Company ($)	Number of Companies
0-500000	4
500000-1000000	6
1000000-5000000	5
5000000-10000000	5
10000000-20000000	1
20000000-50000000	5
50000000-100000000	3
100000000 and above	1
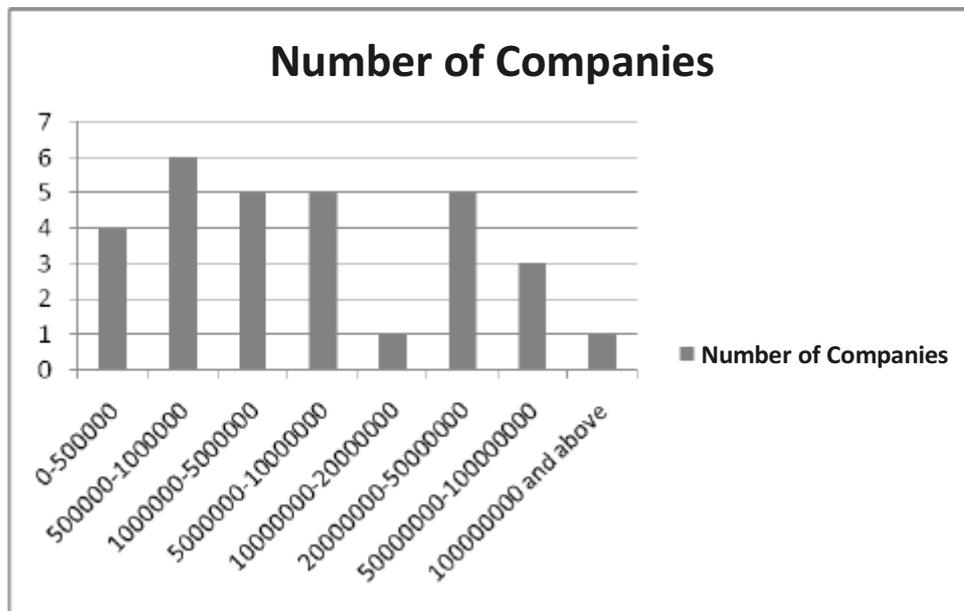
Fig. 2: Number of Companies

From the data it was found that 6 of the respondents worked in the company which had a turnover of 500000-1000000. It also shows us that 1 of the company was having turnover more than 100000000.

• Number of Products/Services

Out of the responses, these are number of products manufactured by the company respondents worked in.

As we can see (Table 3) that most company manufactured less than 16 products/services and no company manufactures more than 60 products/services.

• Industry Classification

Respondents were asked the company they were working in. There were many different companies.

The companies were-

- Manufacturing
- Construction
- Service
- Transportation
- Agriculture
- Finance
- Insurance
- Wholesale Trade
- Public sector
- Mining
- Retail Trade

Table 3: Products Manufactured by the Companies

Number of products/services	Number of companies
1-15	16
16-30	9
31-45	5
46-60	2
61-75	0
Above 75	0
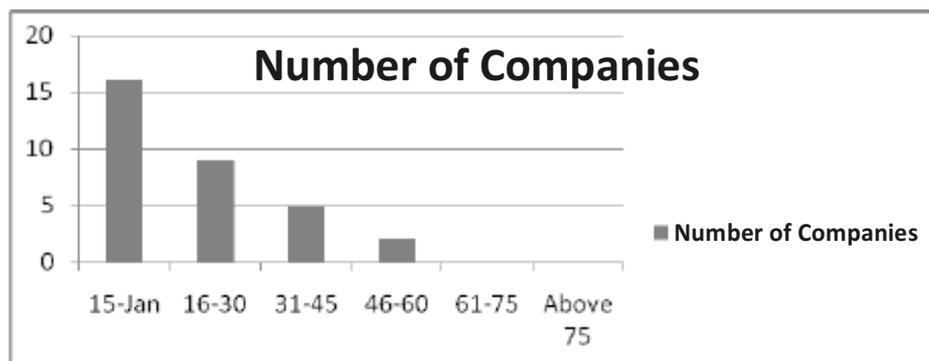
Fig. 3: Number of Companies

Table 4: Average and the Mode of all the Respondents Rating

Management topics	Average Rating	Mode
Activity based costing	3.96	4
Process costing	4.12	5
Standard costing	3.12	4
Cost volume profit	3.12	4
Performance evaluation	3.90	4
Operational budgeting	4.28	5
Capital budgeting	3.19	4
Cash flow management	3.35	4
Product costing	4.06	4
Variable/Absorption costing	3.18	4
Transfer pricing	3.31	4
Behavioural implications	3.19	4
Job costing	3.30	3
Computer systems ERP, SAP	2.43	3
Responsibility accounting	3.03	3
Activity based management	4.24	5
Variance analysis	3.016	3
Ethical issues	3.32	4
Costumer profit analysis	3.91	4
Cost quality	3.32	4
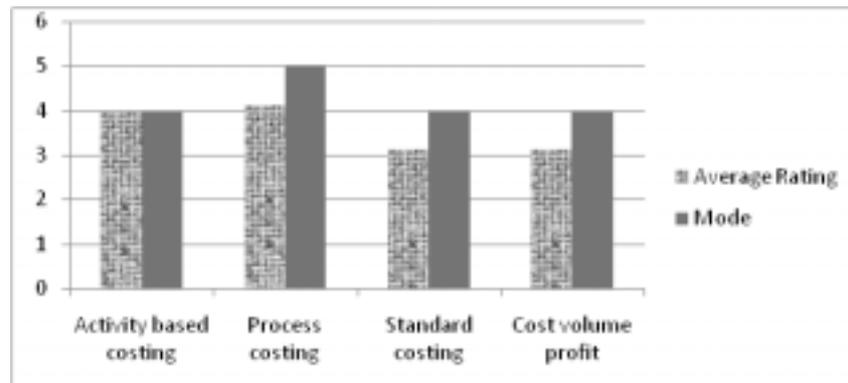
Fig. 4: Average and Mode of Respondent Ratings

Section II

In Section II we had asked how important the management topics in their work were.

The Table 4 shows the average and the mode of all the respondents ratings, i.e., out of 30 response.

(Respondents had to rate the topics out of 5. 1 meaning not important whereas, 5 is extremely important. Respondents had these sets of options to choose from: 1, 2, 3, 4, and 5)

Section III

In Section III we had asked to indicate how important the skills are while practicing Accounting.

The Table 5 & Fig. 5 shows the average and the mean, mode of all the respondents' ratings.

(Respondents had to rate the topics out of 5. 1 meaning not important whereas, 5 is extremely important. Respondents had these sets of options to choose from: 1, 2, 3, 4, and 5)

The analysis Fig. showed that the most important skill were listening and thinking skills whereas the least important skill was marketing skill.

Section IV

In Section IV the respondents were asked about the importance of the characteristic:-

The Table 6 shows the analysis:-

(Respondents had to rate the topics out of 5. 1 meaning not important whereas, 5 is extremely important. Respondents had these sets of options to choose from: 1, 2, 3, 4, and 5)

**Table 5: Mean and Mode of all the Respondents Ratings**

Skills	Average Rating	Mode
Listening skills	4.54	5
Management skills	4.16	4
Marketing skills	2.74	2
Microcomputer skills	4.15	4
Problem solving skills	3.90	5
Reading skills	3.81	4
Social skills	3.03	2
Thinking skills	4.54	5
Speaking skills	3.32	3
Writing skills	3.97	5
Quantitative skills	4.16	5
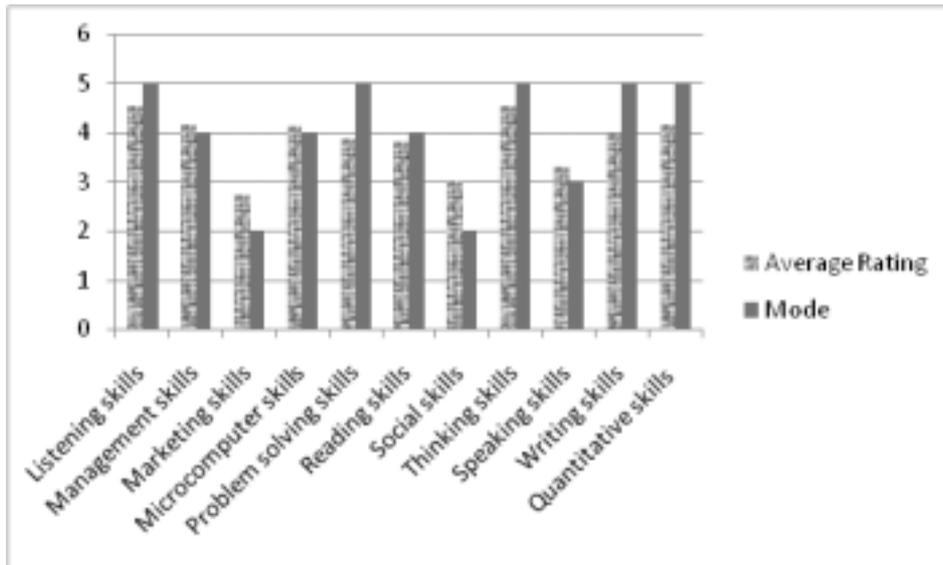
Fig. 5: Mean and Mode of all the Respondents Ratings

Table 6: Mean and Mode of Importance of Characteristics

Characteristics	Mean	Mode
Assertive	3.57	3
Common sense	4.69	5
Ethical	3.47	3
Intellectual	4.16	4
Leader	3.46	4
Motivated	4.44	5
Pleasant persona	3.78	4
Professional attitude	4.49	5
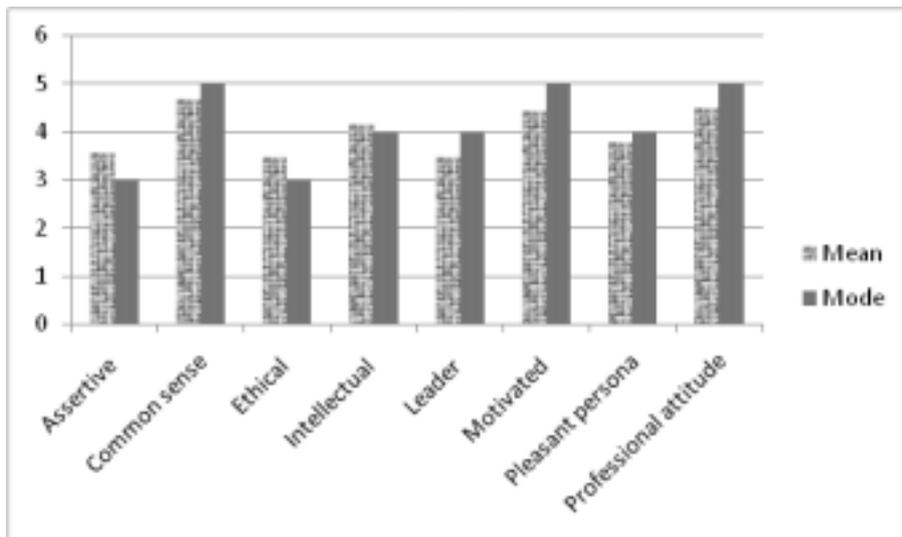
Fig. 6: Mean and Mode of Importance of Characteristics

According to the responds we found that the highest rated characteristic was common sense and the least rated characteristics were leadership.

Conclusion

The primary aim of this paper was to explore the current state of Management accounting and the way they are conducted for best possible results towards the objectives of the companies. Our finding are based on the analysis of the questionnaires completed by various appropriate people from their respective companies and institutions(college/universities).

In conclusion most companies uses process costing, budgeting very important factor as it helps managers to make rational decision and forecast future gain efficiency by lowering cost, for the employee performance evaluation was being practice whereby with good work could be rewarded and vice versa, still emerging most of the firms so not full technology based and does require more of man power thus knowledge of computer is needed but not having masters in it. These were the conclusion made from the data's received.

References

1. Adler, R., Everett, A.M. & Wald Ron, M. (2000), "Advanced Management Accounting Techniques in Manufacturing: Utilisation, Benefits, and Barriers to Implementation", *Accounting Forum,* 24(2), 131-150.

2. Ainikkal, J. (1993), "Exploring the New Zealand Manufacturing Environment". *Accountants Journal,* July, 28-31.

3. Albrecht, W.S. & Sack, R.J. (2000), "Accounting Education: Charting the Course Through a Perilous Future" American Accounting Association . Accounting Education Series, 16.

4. Albrecht, W.S. & Sack, R.J. (2001). The Perilous Future of Accounting Education. *The CPA Journal,* 71(3), 16-23.

5. Bhimani, A. & Pigott, D. (1992), "Implementing ABC: A Case Study of Organisational and Behavioural Consequences" *Management Accounting Research,* 3, 119-132.

6. Birnberg, J.G. (2000), "The Role of Behavioural Research in Management Accounting" in the 21st Century. *Issues in Accounting Education,* 15(4), 713-728.

7. Boer, G.B. (2000), "Management Accounting Education: Yesterday, Today, and Tomorrow" *Issues in Accounting Education,* 15(2), 313-333.

8. Brewer, P.C. (2000), "An Approach to Organising a Management Accounting Curriculum" *Issues in Accounting Education,* 15(2), 211-235.

9. Bright, J., Davies, R.E., Downes, C.A., & Sweeting, R.C. (1992), "The Deployment of Costing Techniques and Practices: a UK Study", *Management Accounting Research* 3, 201-211

10. Burritt, R. (2000), "What is Australian Management Accounting?" Charter 71, (9)69.

11. Chenhall, R.H. & Langfield-Smith, K. (1998). Adoption and Benefits of Management Accounting Practices: an Australian Study" *Management Accounting Research,* 9, 1-19.

12. Chua, W.F. & Baxter, J. (2000), "Management Accounting – Beyond 2000". *Pacific Accounting Review* 11(2), 54-65.

13. Cooper, R. & Kaplan, R.S. 1988, "Measure Costs Right: Make the Right Decisions", *Harvard Business Review,* September/October, 96-103.

14. Deakin, E.B., & Summers, L.S. (1975), "A Survey of Curriculum Topics Relevant to the Practice of Management Accounting", *The Accounting Review,* April, 380-383.

15. Dugdale, D. (1993), "Theory and Practice: The Views of CIMA Members and Students", Management Accounting – London.

16. Dyer, J.L. (1999), "Accounting Education on the Threshold of a New Century". *The Government Accountants Journal,* 48(4), 40-47.

17. Edwards, K. & Emmanuel, C.R. (1990), "Diverging Views on the Boundaries of Management Accounting", *Management Accounting Research* 1, 51-63.

18. French, G.R. & Coppage, R.E. (2000), "Educational Issues Challenging the Future of the Accounting Profession", *Ohio CPA Journal,* 59(3), 69-73.

19. Gosselin, M. (1997), "The Effect of Strategy and Organisational Structure on the Adoption and Implementation of Activity-based Costing", *Accounting, Organisations and Society,* 22(2), 105-122.

20. Hassall, T., Joyce, J., Montano, J.L.A., & Anes, J.A.D. (1999), "Vocational Skills and Capabilities for Management Accountants", *Management Accounting* – London 77(11), 52-55. 20.

21. Horngren, C.T. (1989), "Cost and Management Accounting: Yesterday and Today". *Journal of Management Accounting Research,* Fall, 23-32.

22. Johnson, H.T., & Kaplan, R.S. (1987), "Relevance Lost: The Rise and Fall of Management Accounting". Boston: Harvard Business School Press.

23. Kaplan, R.S. (1984), "The Evolution of Management Accounting", *The Accounting Review,* 59 (3), 390-418.

24. Kaplan, R.S. (1992), "In Defence of Activity-based Cost Management", *Management Accounting* (US) 74(5), 58-63.

25. Kennedy, T. & Bull, R. (2000), "The Great Debate", *Management Accounting* (London), 78(5), 32-33.

26. Knight, R.E. & Zook, D.R. (1982), "Controllers and CPAs Evaluate the Relevance of Education Topics", *Management Accounting,* November, 30-34.

27. Krumwiede, K.R., (1998), "ABC Why It's Tried and How it Succeeds." *Management Accounting,* 79 (10), 32-36.

28. Lander, G.H., & Reinstein, A.R. (1987), "Identifying a Common Body of Knowledge for Management Accounting", *Issues in Accounting Education,* Fall, 264-280.

29. Maher, M.W. (2000), "Management Accounting Education at the Millennium." *Issues in Accounting Education,* 15(20), 335-346.

30. Malmi, T., (1997), "Towards Explaining Activity-based Costing Failure: Accounting and Control in a Decentralised Organization". *Management Accounting Research,* 8, 459-480.

31. Maskall, B. & Baggaley, B. (2000). "The Future of Management Accounting". *Journal of Cost Management* 14(5), 24-27.

32. Ness, J.A., Cucuzza, T.G., "Tapping the Full Potential of ABC. (1997)", In S.M. Young (Ed), Readings in Management Accounting (2nd ed.), (322-327), New Jersey: Prentice Hall International.

33. Novin, A.M., Pearson, M.A., & Senge, S.V. (1990). "Improving the Curriculum for Aspiring Management Accountants: The Practitioner's Point of View. *Journal of Accounting Education,* 8, 207-224.

34. Ortman, R., & Buehlmann, D. (1989). "Supplementing Cost Accounting Courses in Response to the Changing Business Environment". *Issues in Accounting Education,* 4,161-178.

35. Reider, B. & Saunders, G. (1988). "Management Accounting Education: A Defence of Criticisms". *Accounting Horizons* 2, 58-62.

36. Robinson, M.A. & Barrett, M.E. (1988). "The Content of Management Accounting Curricular" *The Accounting Educators Journal,* Spring, 49-60.

37. Russell, K.A., Siegel, G.H. & Kulesza, C.S. (1999). "Counting More, Counting Less". *Strategic Finance,* 81(9), 39-46.

38. Scapens, R.W. (1983). "Closing the Gap Between Theory and Practice". *Management Accounting London,* 61(10), 34-36.

39. Shields, M.D., McEwen, M.A. (1997). "Implementing Activity-based Costing Systems Successfully". In S.M. Young (Ed), Readings in Management Accounting (2nd ed.),(pp 328-335), New Jersey: Prentice Hall International.

40. Siegel, G. & Sorenson, J.E. (1994). "What Corporate America Wants in Entry-level Accountants?", *Management Accounting,* 76, (3), 26-31.

41. Smith, M. (1999). "Realising the Benefits from Investment in ERP". *Management Accounting;* London, 77(10), 34.

42. Swanson, R. (1999), "Is Management Accounting a Dead Profession?", *Strategic Finance,* 81(1), 6.

43. Szendi, J.Z., & Elmore, R.C. (1993), "Management Accounting: Are New Techniques Making in-roads with Practitioners?", *Journal of Accounting Education,* 11, 61-76

Annexure

There were two different questionnaire, one for academic and another for practitioners.

Practitioners Questionnaire –Management Accounting Education

Section I

Please tick or fill in the appropriate sections.

Age_____Under 30____30-39____40-49____50-59____60+
Bachelors Degree_____MastersDegree_____Professional qualification___
Number of years in Management Accounting_____
Current job title_____
Turnover of company $0-$500,000_____$500,000-$1 million____$1 million-$5 million____$5 million-$10 million____$10 million-$20 million____$20 million-$50 million____$50 million-$100 million____$100 million-$500 million____$500 million-$1 billion____$1 billion & above_____
Number of products/services 1-15___16-30___31-45___46-60___61-75___75 plus____
Number of Accounting Department Staff_____
Industry Classification:
Agriculture___Mining___Construction___Manufacturing___Transportation___Wholesale Trade___RetailTrade___Finance/Insurance___Service___Public Sector____

Section II
Please rate the importance in your view of these management accounting topics

S.No.	Not important				Extremely important
	(1)	(2)	(3)	(4)	(5)
Activity Based Costing					
Process Costing					
Standard Costing					
Cost –Volume Profit					
Performance evaluation					
Operational budgeting					
Capital budgeting					
Cashflow management					
Product costing					
Variable/Absorption costing					
Transfer pricing					
Behavioural implications					
Job costing					
Computer systems-ERP,SAP					
Responsibility accounting					
Activity Based management					
Variance analysis					
Ethical issues					
Costumer profitability analysis					
Strategic management accounting					
Costs of quality					

Others_____

Section III
In this section please indicate the importance of these following skills and characteristics.

A. Skills	Not improtant				Extremely important
	(1)	(2)	(3)	(4)	(5)
1.Listening skills					
2.Management skills					
3.Marketing skills					
4.Microcomputer skills					
5.Problem Solving skills					
6.Reading skills					
7.Social skills					
8.Speaking skills					
9.Thinking skills					
10.Writing skills					
11.Quantitative skills					
12.Other?Specify					

Academic questionnaire-Management Accounting Education

Section I
Please tick or fill in the appropriate sections.

Age_____Under 30_____30-39_____40-49_____50-59_____60+
Years of practical industry experience in management accounting?_____
Number of years in academic Management Accounting_____
Current job title_____
Text book (s) used_____
Course Level- Introductory_____Intermediate_____Advanced_____
(please tick)
Core Paper_____Elective_____
(please tick)

Section II
Please rate the importance in your view of these management accounting topics.

S.No.	Not important				Extremely important
	(1)	(2)	(3)	(4)	(5)
Activity Based Costing					
Process Costing					
Standard Costing					
Cost –Volume Profit					
Performance evaluation					
Operational budgeting					
Capital budgeting					
Cashflow management					
Product costing					
Variable/Absorption costing					
Transfer pricing					
Behavioural implications					
Job costing					
Computer systems-ERP,SAP					
Responsibility accounting					
Activity Based management					
Variance analysis					
Ethical issues					
Costumer profitability analysis					
Strategic management accounting					
Costs of quality					

Others_____

Section III

In this section please indicate the importance of these following skills and characteristics you think a management accounting graduate should have.

A. Skills	Not improtant				Extremely important
	(1)	(2)	(3)	(4)	(5)
1. Listening skills					
2. Management skills					
3. Marketing skills					
4. Microcomputer skills					
5. Problem Solving skills					
6. Reading skills					
7. Social skills					
8. Speaking skills					
9. Thinking skills					
10. Writing skills					
11. Quantitative skills					
12. Other?Specify					

Section IV

Characteristics					
1. is assertive					
2. has common sense					
3. is confident					
4. is ethical					
5. is intellectual					
6. is a leader					
7. is motivated					
8. has a pleasant personality					
9. has professional appearance					
10. has a professional attitude					
11. Others? specify					

Generation of Convex Hull Using Neural Network Technique

Ashish Kumar Nayyar*
Varun Sapra**

Abstract

The convex hull problem has had a long history going back to the beginning of computational geometry and has been an intensively studied subject even up to the present day. The computation of the convex-hull of a finite set of points, particularly on the plane, has been studied extensively and has wide applications in pattern recognition, image processing, cluster analysis, statistics, robust estimation, operations research, computer graphics, robotics, shape analysis, and several other fields. A convex-hull based shape representation is suitable for classification and recognition of irregular objects because it is invariant with respect to coordinate rotation, translation, and scaling.

Since 1970s, the problem of convex-hull computation has been an interesting area of research. As a result, a wide variety of algorithms are available in the literature to solve this problem. Early papers dealt primarily with the planar case d = 2. These wide varieties of algorithms were classified as (a) computing exact convex hull and (b) computing approximate convex hull. They were also known as sequential and parallel. Sequential means using a single processor for the computation and parallel means using multiple processors for the purpose of computation.

This research aims in finding the solution of the convex hull problem using a neural network technique. The convex hull problem is the problem of computing the convex hull of S and reporting the points on the convex hull in the order in which they appear on the hull where S = {S[0], . . . , S[n − 1]} be a set of n distinct points in the Euclidean plane. This problem has been solved efficiently using standard methods but our research is confined to find a solution of the problem using neural network. Because convex hull is basically a pattern recognition problem and neural networks are good at pattern recognition.

Keywords: Neural, Convex, Hull, Euclidean, Computation, etc.

Introduction

Computational Geometry

The term "computational geometry" was coined in the mid-1970's, geometry is one of the longest studied mathematical areas because of its enormous number of applications. With the advent of computers, which could perform millions of mathematical calculations per second, new topics and problems in geometry began to emerge and the field of computational geometry was born. As it evolved, a number of new applications became apparent, ranging from computer vision and geographical data analysis, to collision detection for robotics and molecular biology.

Computational geometry studies the design and analysis of algorithms for solving geometric problems. One central problem that has received considerable attention in the area is the problem of constructing convex hulls. The importance of the problem stems not only from its many applications (such as to pattern recognition, statistics, and image processing) but also from its usefulness as a tool for solving a variety of problems in computational geometry. The concept of convex hulls is well-studied in mathematics and is appealing both mathematically and intuitively.

The Convex Hull Problem

Given a set of planar points, the two-dimensional convex hull problem is to find the convex polygon with the smallest possible area which completely contains all of the points. Let S = {S[0], . . . , S[n − 1]}

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be a set of n distinct points in the Euclidean plane. The convex hull of S is the minimal convex region that contains every point of S. From this definition, it follows that the convex hull of S is a convex polygon whose vertices are points of S. For convenience, we say that a point p to S is "on the convex hull of S" if p is a vertex of the convex hull of S [3].

The convex hull of a finite point set S = {P} is the smallest 2D polygon Ω (or polyhedron in 3D) that contains S. That is, there is no other polygon (or polyhedron) Λ with $S \subseteq \Lambda \subseteq \Omega$. Also, this convex hull has the smallest area and the smallest perimeter of all polygons containing the set S.

Convex hulls find use in a number of different applications including:

- Collision avoidance in robotics.

- Pattern recognition and digital image processing.

Fundamentals of Neural Networks

Neural Networks are relatively crude electronic models based on the neural structure of the brain. The brain basically learns from experience. It is natural proof that some problems that are beyond the scope of current computers are indeed solvable by small energy efficient packages. This sweeping success can be attributed to a few key factors:

- **Power.** Neural networks are very sophisticated modeling techniques capable of modeling extremely complex functions. In particular, neural networks are *nonlinear*. Neural networks also keep in check the curse of dimensionality problem that bedevils attempts to model nonlinear functions with large numbers of variables.

- **Ease of Use.** Neural networks learn by example. The neural network user gathers representative data, and then invokes training algorithms to automatically learn the structure of the data.

Some Important properties of neural networks

- **Trainability:** Networks can be taught to form associations between any input and output patterns.

- **Generalization:** Networks don't just memorize the training data; rather, they learn the underlying patterns, so they can generalize from the training data to new examples.

- **Nonlinearity:** Networks can compute nonlinear, nonparametric functions of their input, enabling them to perform arbitrarily complex transformations of data.

- **Robustness:** Networks are tolerant of both physical damage and noisy data; in fact noisy data can help the networks to form better generalizations.

- **Uniformity:** Networks offer a uniform computational paradigm which can easily integrate constraints from different types of inputs.

- **Parallelism:** Networks are highly parallel in nature, so they are well-suited to implementations on massively parallel computers.

Literature Review

The convex hull problem has had a long history going back to the beginning of computational geometry and has been an intensively studied subject even up to the present day. The computation of the convex-hull of a finite set of points, particularly on the plane, has been studied extensively and has wide applications in pattern recognition, image processing, cluster analysis, statistics, robust estimation, operations research, computer graphics, robotics, shape analysis, and several other fields.

Since 1970s, the problem of convex-hull computation has been an interesting area of research. As a result, a wide variety of algorithms are available in the literature to solve this problem. Early papers dealt primarily with the planar case d = 2. These wide varieties of algorithms were classified as (a) computing exact convex hull and (b) computing approximate convex hull. They were also known as sequential and parallel. Sequential means using a single processor for the computation and parallel means using multiple processors for the purpose of computation. The birth of computational geometry is often credited to Ronald Graham's research and subsequent 1972 paper titled "An efficient algorithm for determining the convex hull of a finite planar set." His algorithm was a response to Bells Lab's

request for a faster algorithm. They had to determine the convex hull of ten thousand points rapidly, a challenging number in the late 1960s with existing O(n2) algorithms. Graham was hired and developed what is now known as Graham's Scan, an O(nlogn) convex hull algorithm.

Some of the algorithms for solving convex hull problem

Table1: For Solving Convex Hull Problem

S.No	Algorithm	Speed	Discovered By
1	Brute Force	O(n3)	[Anon, the dark ages]
2	Gift Wrapping	O(nh)	[Chand & Kapur, 1970]
3	Graham's Scan	O(n log n)	[Graham, 1972]
4	Jarvis March	O(nh)	[Jarvis, 1973]
5	Quick Hull	O(nh)	[Eddy, 1977], [Bykat, 1978]
6	Divide and Conquer	O(n log n)	[Preparata & Hong, 1977]
7	Monotone Chain	O(n log n)	[Andrew, 1979]
8	Incremental	O(n log n)	[Kallay, 1984]
9	Marriage-Before-Conquest	O(n log n)	[Kirkpatrick & Seidel, 1986]

Proposed Algorithm

In this research paper, we have developed an algorithm for the construction of convex hulls. Conceptually the algorithm is a connectionist implementation of Gift Wrapping algorithm. We have implemented the algorithm by a self organizing neural network.

A Self Organizing Map is a special class of artificial neural networks based on unsupervised competitive learning. It refers to the ability to learn from the input without having any prior supervising information. A Self Organizing Map inspects the input vectors for some hidden patterns, and by cooperatively adjusting the weights of output layer of neurons to make localized response to the input data.

Algorithm

The algorithm for the construction of the convex hull is as follows:

Step 1 Generate random points in a plane and find the distance of each point from the left side of the plane and set the initial weights as $Wi(0) = Xj – Xk$

Step 2 Find the winning Neuron, say either nearest or farthest from the left side of the plane as it always lie on the hull edge.

Step 3 Choose the point as a successor processor P(s) and from Ps draw all possible edges.

Step 4 After finding the first hull vertex, now we need to find the other vertex so that on joining these two vertices we will get a hull edge.

(Selection of plane and the next hull vertex)

Step 4.1 Rotate the plane counter clockwise and again find the distance of each node from current side.

Step 4.2 Select the minimum distance point and draw an edge between the nodes and check whether the edge is an upward edge or downward edge. An edge is downward if its y1 is less than y2 and upward if y1 is greater than y2.

Step 4.3 Now check if there is any other node lying down to the line.

Step 4.3.1 Mark all those points whose value lies in between the top values of the selected nodes.

Step 4.3.2 Move along the edge drawn in step 4.2 and if the top value of the node under check is achieved but with lesser left value (X – Coordinate Value) on that edge, then that node lies above that line. (Applicable for Upward edges and for downward edges if the top value of the node is achieved with less left

value then that node lies down to the line.) Mark all those points which lie down to the line.

Step 4.3.3 Out of the nodes which lie down to the line select the node with minimum distance from the previous side of the plane.

Step 4.3.4 Draw an edge between the newly selected points and repeat steps 4.3.1 and 4.3.2 for any other node lying down to the line keeping the side of the plane constant.

Step 4.3.5 If no other such point lies then repeat step 5 to generate other hull edges.

Step 5 The resultant will be a convex hull polygon.

Conclusion and Future Work

Every neuron is computing independently, it takes constant time. The next processor value is then assigned to the node Hence it takes O(1) time. The algorithm needs to selects the winner n number of times as n are the number of hull processors. Thus it takes O(n) time to compute (Best Case). (In worst case)If the algorithm calls itself recursively for the finding the points down to the drawn edge, This leads to O(n) recursions, therefore overall it is O(n2).

Future Scope: - In future scope, convex hulls can also be computed in higher dimensional space. Further, neural networks can be employed in convex hull determination in N-dimensional space. Another active area of research is in the development of efficient parallel algorithms for convex hull computation. It is beyond the scope of this thesis to extensively cover the literature.

References

1. Mulmuley K., Computational Geometry (1993) "An Introduction Through Randomized Algorithms". Prentice-Hall, Englewood Cliffs, N.J.

2. O'Rourke J. (1994) "Computational Geometry in C", Cambridge University Press.

3. Brionnimann.H, et al, Space-Efficient Planar Convex Hull Algorithms, Elsevier Science, This Research was Registered under Contract 9801749

4. Agarwal P.K. (1994): "Applications of Parametric Searching in Geometric Optimization," *J. Algorithms,* 17, 292–318.

5. Akl S.G. and Lyons K.A. (1993) "Parallel Computational Geometry." Englewood Cliffs, NJ: Prentice-Hall, 1993.

6. V. Capoyleas, G. Rote, and G. Woeginger(1991) "Geometric Clustering," *J. Algorithms,* 12, 341–356.

7. P.A. Devijver and J. Kittler(1982) "Pattern Recognition: A Statistical Approach", NJ: Prentice-Hall.

8. Earnshaw R.A. (1988) "Theoretical Foundations of Computer Graphics and CAD," in NATO ASI. Berlin, Germany: Springer-Verlag, 40.

9. H. Edelsbrunner, D. G. Kirkpatrick, and R. Seidel(1983) "On the Shape of a Set of Points in the Plane," *IEEE Trans. Inform. Theory,* IT-29, 551–559.

10. Y. K. Hwang and N. Ahuja(1993) "Cross Motion Planning – A Survey," *ACM Comput. Survey,* 24, 219–291.

11. F. P. Preparata and M. I. Shamos(1985) Computational Geometry: An Introduction. New York: Springer-Verlag.

12. J. T. Schwartz and C. K. Yap, Eds.(1987), Advances in Robotics I: Algorithmic and Geometric Aspects of Robotics. Hillsdale, NJ: Lawrence Erlbaum.

The Influence of HR Practices on Retention of Employees: Evidence from Literature Review

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Abstract

Employee retention is a critical aspect for every company regarding competitive advantage because human resource is the most critical asset of today's modern world. Other resources can be arranged effortlessly but to get efficient and retain talented human capital is the most difficult task. Therefore, organizations are now more focused towards employee retention. Organizations use different HR techniques for retention. It is the most imperative target for the organization, because a huge amount is spent on the orientation and training of the new employees. In fact, literature on employee retention shows that wooing existing employees through employee development or talent management programmes costs less than acquiring new talents, while the initial cost of attracting the new employees has already been expended. So the need is to focus on the factors that affect retention which in turn leads to growth and success of organizations. Studies suggests that retention strategies, which effectively satisfy the needs of all employees consequently enhances the ability for companies to adapt more effectively to ongoing organizational change. Keeping this in mind, the literature has been reviewed. This paper describes the relationship between human resource practices and employees retention in organizations. The main purpose is to identify elements of HR practices that influence employee retention.

Keywords: Employee Retention, Retention Strategies, Employee Development, Organizational Productivity.

Introduction

With globalization, the competition among the organizations has increased as there are many new players in the emerging world market. Keeping employees or retaining employees within the organization is a difficult task. Generally, organization would retain their employees for a specified period to utilize their skills and competencies to complete certain projects or execute tasks. But on the other hand, retaining the desirable employees is beneficial to an organization in gaining competitive advantage that cannot be substituted by other competitors in terms of producing high morale and satisfied co-workers who will provide better customer service and enhanced productivity.

An effective human resource management practices can be the main factor for the success of a firm Stavrou-

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Costea (2005). As supported by Lee and Lee (2007) HRM practices affects business performance, namely training and development, teamwork, compensation/ incentive, HR planning, performance appraisal, and employee security help improve firms' business performance including employee's productivity, product quality and firm's flexibility.

Previous researches show that employers use different techniques for the retention of employees such as training, work environment, compensation, etc. Labour shortage is a major concern for an organization, and an organization's main aim is to retain the employees, specially talented employees (Moncarz et al., 2008; Deckop et al., 2006), and these researches also proved that these variables greatly affect retention. The afore-mentioned variables are very useful regarding the employee's satisfaction which augments their commitment with the organization; as a result, the productivity increases. Most researchers use these variables like working environment, training and development, and compensation to observe their effect separately, on how working environment affect employee turnover, how employee can be retained

through training and development, and what are the impacts of compensation (Deckop et al., 2006; Acton and Golden 2003) The main aim of the study is to review the literature related to HR practices and the retention of employees in an organization

Defining Retention

Different definitions have been stated in a literature. According to Lockwood (2006) retaining is the implementation of integrated strategies or systems designed to increase workplace productivity by developing improved processes for attracting, developing, retaining, and utilizing people with the required skills and aptitude to meet current and future business needs.

Zineldin (2000) defined retention as "an obligation to continue to do business or exchange with a particular company on an on-going basis". Another definition for the concept of retention is "customer liking, identification, commitment, trust, readiness to recommend, and repurchase intentions, with the first four being emotional-cognitive retention constructs, and the last two being behavioural intentions" (Stauss et al., 2001). According to Walker and Miler retention is a term given to keeping employees jumping from ship(2010).

Compensation

The literature considered that compensation is one of the largest factors for the retention of employees. Compensation plays significant role in attracting and retaining good employees specially those employees who gives outstanding performance or unique skill which is indispensable to the organization because company invest large amounts on their training and orientation.

Different people interpret compensation differently. Compensation is defined by an American association as "cash and non-cash remuneration provided by the employer for services rendered" (ACA, p. 9). In the organization's point of view, compensation and benefits is one of the best initiatives which a company can take to retain employees.

Compensation is a very valuable tool for retention and turnover. It is also a motivator for an employee to

be committed to the organization, which in result enhances attraction and retention (Zobal, 1998; Moncarz et al., 2009; Chiu et al., 2002). The important components of compensation are based on salary, merit pays, discretionary rewards or bonuses, which attract best employees (Chiu et al., 2002). The compensation and reward system also increases employee performance (Deckop et al., 2006; Moncarz et al., 2009; Zsidisin et al., 2003). The financial and non-financial compensation are given to employees for accomplishment of desired goals against their behaviour. Reward can be spontaneous and formal, even though pay for performance is the form of reward which is given based on performance (Zobal, 1998).

It is used to attract the potential candidates, because applicants want to be aware of it, while applying for vacancy (Kuhun, 2009; Zobal, 1998; Chiu et al., 2002; Moncarz et al., 2009;). Those organizations which have a high-wage system will have better recruitment and retention of employees as compared to others. Efficient wage system influences the employees for longer retention, because if an employee gets better reward internally, he would like to stay until his self-interest is fulfilled there. Recognizing an employee is less expensive and is a very effective tool for the retention of employees. If an employee feels he is given recognition by his organization, it will boost his morale and encourage positive behaviour towards work. This will encourage an employee to do his work willingly and

Williams et al. (2007) found that if employees are satisfied with how the company operates and communicates its compensation policies, they remained committed to the organization. Also an organization's reward system can affect the performance of the employee and their desire to remain employed (e.g., Bamberger &Meshoulam, 2000, MacDuffie, 1995). There are also numbers of researchers demonstrate that there is a great deal of inter-individual difference in understanding the significance of financial rewards for employee retention (Pfeffer, 1998; Woodruffe, 1999).

Training

According to Goldstein (1980) and Latham (1988), training is defined as the systematic acquisition and

development of the knowledge, skills, and attitudes required by employees to adequately perform an assigned job or task to boost performance in the job environment. Training imparts new knowledge and skills only if it meet employee and organizational needs and efficiently and effectively designed and delivered (Salas, 1999).

Sahinidis, 2008, has defined Training "as the planned intervention that is designed to enhance the determinants of individual job performance"

Storey and Sisson (1993), recommend that training is sign of organization commitment to employees. It also reflects organization strategy that is based on value adding rather than cost lowering. Leading firms of the industry recognize that comprehensive range of training, skill and career development is the key factor of attraction and retention the form of flexible, sophisticated and technological employees that firms strategy to succeed in the computerized economy (Bassi and Van Buren, 1999; Accenture, 2001)

It is a key retention factor for employees at any age. According to Gomez et al, (1995), training provides specialized technique and skills to employee and also helps to rectify deficiencies in employee performance. Bishop (1998), survey on training found that established, larger, manufacturing and unionized firms have tend to provide training to employee as did multi established firms with flexible production approach or high performance.

Eisen(2005) states that training programs available to all employees correlate with a 70% increase in employee retention rates. Research indicates training methods that engage workers with career challenges, advancement opportunities, work incentives, competitive wages/benefits ,and supportive work environments are effective retention strategies for employees of any age (Eisen, 2005). Research provided by Berryman & Vaughan (1989) and McIntosh (2001) indicated relationship between enhanced training foundations (competencies, efficiencies, and intelligence) and advanced development of best practices, cross training, mentoring, and technology changes for all employees. Training benefits (tangible or intangible) correlate with higher levels of consistency, competency, productivity, adaptability,

independence, and loyalty in employees at any age (Agrela,et al.,2008; Boomer Authority,2009; Yazinski,2009)

Employee Empowerment

Empowerment is defined as delegating the power of decision and action to the employees and giving more responsibility and authority to complete their task (Dr.Yasar F. Jarrar& Professor Mohamed Zairi, 2010). It means that employees have sufficient authority to determine how they perform their tasks. It also includes involvement of employee in goal-setting, decision-making and motivational techniques and enabling employees to work in a participative environment (Osborne, 2002). It is identified as powerful drive in organization's success (Kaye & Jordan-Evans, 2001). It is because of it employees gets more motivated and committed to organizational operation.

Empowered employees tend to be more confident and try to give their best to employer because they are given more authority in decision-making process (HummayounNaeem and Muhammad IqbalSaif, 2010). Employee empowerment can create a feeling of obligation among employees to stay in organization. Hence, the employees will tend to remain in the organization even when face pressure from others to leave the organization because they feel that they are a part of the organization (Choong, Wong and Lau, 2011).

Recruiting

According to Banjoko (2003), employee recruitment is the process of reaching out, searching for and attracting a large supply of people or a large pool of interested applicants from which the organization can choose those it considers competent or most qualified for the job.

The effort to retain the best personnel starts with recruiting. Employers must be honest with the recruit about the beliefs, expectations, organizational culture, demands, and opportunities within the organization. By doing so, a department will attract those who will be content working within the culture (Marx, 1995). Denton (1992, p.47) follows this up by stating that,

"the better the match between recruits and the organization the more likely you are to retain them." The employer must be candid about the working conditions, responsibilities, opportunities and other details to reduce the chances of making hiring mistakes. Taylor and Cosenza (1997) strengthen this thought by noting that it is imperative that companies give prospective employees a true picture of the organization, if they hope to match the personality type with the climate and culture of the organization.

Taylor and Cosenza (1997) also agrees that it is important that companies give prospective employees a true picture of the organization, if they hope to match the personality type with the climate and culture of the organization.

Studies have shown that the human resource is the most valuable asset in any organization (Adebayo, 2001; Ejiofor and Mbachu, 2001; Olowu and Adamolekun, 2005). The human factor is therefore fundamental to the achievement of organizational goals. As a result, the need to put in place appropriate strategy for employee recruitment of organizational workforce cannot be overemphasized.

Working Environment

A numbers of studies have been conducted to explain the work environment with different aspects such as job satisfaction (Iaffaldano&Muchinsky, 1985) and employee retention (Martin 1979), employee turnover, organizational commitment and job involvement (Sjoberg&Sverke 2000). Work environment is considered one of the most important factors in employee s retention (Zeytinoglu& Denton, 2005 According to Ramlall,(2003), people strive to work and to stay in those corporation that provide good and positive work environment, where employee feel that they are valued and making difference.

It enhances the employee capability and commitment with the organization. It is a vital concept in employee retention. Researchers give monumental importance to the working environment, and without good working environment, keeping human capital becomes a problem for the organization (Edvardsson and Gustavsson, 2003; Bloemer and Schro¨der, 2006; Ensor et al., 2006; Deckop et al., 2006; Moncarz et al., 2009; Deery, 2008; McGuire, 2008). Work environment can be more effective than compensation in employee retention, because if an employee is more satisfied and committed, and if he has a positive experience of the working environment, he would likely stay longer with his current employer (Moncarz et al., 2009). An employee will be committed if he has a positive perception about his organization; by that means, he must be appreciated for demonstrating persuasive skills. This appreciation will encourage him to do his best and stay longer, because these kinds of HR practices are a good source of employee development (Deckop et al., 2006).

Those organizations which keep the working environment relaxed, so that employees can enjoy their work and see it as fun and not stress, will have employees' retention, because as much as they are relaxed, their efficiency will increase. . If the work place is flexible and organizations treat employees as human beings "and not machines", and if organizations provide them proper opportunity to balance their working life and personal life, and do not overload them with work that create stress for them, the employees will be motivated to stay longer (Moncarz et al., 2009; Richman et al., 2008). If an employee has a good relationship with peers, it will create a productive environment, enhance his capabilities and increase his retention of information. Peers share their work with each other, and this enhances their knowledge and skills. On the other hand, a relaxed environment will keep the employee intact with the organization for a longer period (Cromwell, 2004).

Career Development

Employers can no longer promise job security, but they can help people maintain the skills they need to remain viable in the jobmarket (Moses, 1999). Eyster, et al. (2008) state that job flexibility along with embracing career and lifeoptions, is a critical incentive for all employees. Research shows growing trends of employers providing greater job flexibility that includes flexible career options (i.e. training, mentoring, work station accommodations, job mobility, and reduced work hours) and life options (i.e. counseling services, health and wellness programs) (Boomer Authority, 2009;

Eyster,et al.,2008).The challenge to organizations is that they must accept that this process may lead some employees to leave the company and pursue outsideopportunities (O'Herron and Simonsen, 1995.

The purpose of career planning as part of an employee development program is not only to help employees feel like that their employers are investing in them, but also help people manage the many aspects of their lives and deal with the fact that there is not a clear promotion track.

Conclusion

Review of the literature confirms the effect of HR practices on the employee's retention in an organization. It is found that Compensation, reward, employee empowerment, career development and recognition plays a key role in employee's motivation which furtherleads to employee's retention in the organization. Similarly Training and career development are also considered to be motivating factor which leads to retention and career development of an employee in an organisation.

References

Accenture, (2001). The High Performance Work Force: Separating the Digital Economy s Winners from Losers. In the Battle for Retention Accentures Study.pp:1-5. *Attitudes. J. Eur. Ind.* Tra., 32(1): 63-76.

Bassi, L.J. and Van Buren, M.E. (1999). Sharpening the Leading Edge. In Training and Development. 53(1), 23-32.

Chiu KR, Luk VW, Tang TL (2002). Retaining and Motivating Employees, Compensation Preferences in Hong Kong and China. *Personnel Rev.*, 31(4), 402-431.

Deckop JR, KonardAM, Perlmutter FD, Freely JL (2006). The Effect of Human Resource Management Practices on the Job Retention of Former Welfare Clients, *Hum. Resour. Manage.,* 45(4), 539-559

Denton, D. Keith (1992*).*Recruitment, Retention, and Employee Relations.West Westport, CT: Quorum

Dr.Yasar F. Jarrar and Professor Mohamed Zairi.(2010). Employee Empowerment- A UK Survey of Trends and Best Practices.

Kaye B. and Jordan-Evans, S. (2001). Retaining Key Employees. Public Management, 1, 6-11.

Hummayoun Naem and Muhammad Iqbal Saif (2010), Employee Empowerment and Customer Satisfaction: Empirical Evidence from the Banking Sector of Pakistan. *African Journal of Business Management* 4(10), 2028-2031.

Kuhn KM (2009). Compensation as a Signal of Organizational Culture: The Effects of Advertising Individual or Collective Incentives. *Int. J. H. Res. Manage.*, 20(7), 1634-1648.

Lee, F-H.& Lee, F-Z. (2007). The Relationships Between HRM Practices, Leadership Style, Competitive Strategy and Business Performance in Taiwanese Steel Industry.

MacDuffie, J. (1995). "Human Resource Bundles and Manufacturing Performance: Organisational Logic and Flexible Production Systems in the World Auto Industry." *In Industrial and Labor Relations Review,* 48, 197-221

Marx, Mary (1995, December). Keeping Your Best Employees. *Journal of Property Management,* 26-29.

Moncarz E, Zhao J, Kay C (2009). An Exploratory Study of US Lodging Properties' Organizational Practices on Employee Turnover and Retention*, Int. J. Cont. Hosp. Manage.,* 21(4), 437-458.

Storey, J. and Sisson, K. (1993). Managing Human Resources and Industrial Relations, Buckingham: Open *Supervision, 3-5*

Taylor, Susan L. & Cosenza, Robert M. (1997, December). Internal Marketing Can Reduce Employee Turnover. Toward a Framework" *Journal of Organizational Behavior*, 26, 22-31.

Williams R, Westmoreland M, Lin C, Schmuck G, Creen M (2007) "Effectiveness of Workplace Rehabilitation Interventions in the Treatment of Work-related Lower Back Pain: A Systematic Review" *Disability & Rehabilitation* 29, 607-624

Zobal C (1998). The "Ideal" Team Compensation System – An Overview: Part I, Team Per. Manage., 4(5), 235-249

Zsidisin GA, Ogden JA, Hendrick TE, Clark MA (2003). Chief Purchasing Officer Compensation: An Analysis of Organizational and Human Capital Effects. *Int. J. Phys. Dist. Log Manage.*, 33(6), 477- 499

Pragmatic Study on Corporate Culture of Selected Print Media Organizations

Sheela Bhargava*

Abstract

The purpose of this research study is to examine the corporate culture prevailing in Indian print media organizations. The study was carried out in four newspaper publishing organizations in India as newspapers are considered to be an important part of print media industry. A structured questionnaire was administered to 500 employees working in these four print media organizations. The questionnaire consisted of 68 statements which were rated on a 5-point scale ranging from 1 "almost no extent" to 5 "to a very large extent". Through factor analysis, 13 factors were extracted for assessing the Corporate Culture. The thirteen factors for corporate culture were defined and labeled as Collaboration, Uncertainty Avoidance, Growth-oriented, Expressive, Autonomy, Experimentation, Contextualism, Openness, Confrontation, Power Distance, Trust, Group Norms and Importance given to merit. One-way Analysis of Variance (ANOVA) was conducted to test the hypothesis and to compare the corporate cultures of the four organizations. The results depicted that there were significant variations in the perceptions of employees with respect to corporate culture.

Keywords: Corporate Culture, Collaboration, Autonomy, Uncertainty Avoidance.

Introduction

In the current scenario, knowledge and facts are the tools for economic, political and cultural exchange. In any country, the presence of strong and constructive media can play a vital role in catering to the diverse needs of individuals, small and large businesses & production houses, various research organizations, private and public sectors as well as society as a whole. The media has a strong social and cultural impact upon society. Mass media largely consists of print media like newspapers, magazines, journals and other publications etc. as well as electronic media like radio, television, internet etc. In India, the media industry is undergoing remarkable change and is one of the fastest growing sectors. According to the Ministry of Information and Broadcasting, initially the growth of electronic media was being considered a challenge for the established print media but till date the growth of electronic media has not affected print media, which in fact has actually grown further both in terms of circulation and readership. The increase in literacy rate and advent of new technology have resulted in India emerging as the second largest newspaper market in the world as mentioned in a research report of World Association of Newspapers (WAN) (The Hindu, June

4, 2008). The print media of a country can play a very constructive role in the development of the nation by highlighting social and economic issues. Regardless of their societal function, media practitioners are influential because they touch the lives of all of us. For that reason, media companies should emphasize on such cultural values, beliefs and norms that promote ethical behaviour amongst its employees so that they come up with the right versions of information for printing. An organization can guide the conduct of its employees by embedding ethical values in its dominant culture. (Steven L. McShane, 2006). If the culture is strong and supports high ethical standards, it should have a very powerful and positive influence on employee behaviour. The purpose of this research study is to examine the corporate culture of four newspaper publishing organizations as newspapers are considered to be an important part of Indian print media industry. This would help in understanding the various variables that are part of the corporate culture of Indian print media organizations. The findings of the study will aid these print media organizations in obtaining knowledge about their cultural practices, this will further help in deciding which positive cultural practices should be stressed upon more rigorously to imbibe the right behavior and conduct among its employees.

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Corporate Culture

Shared understandings concerning ethical conduct can be seen as a shared cultural subelement, a "microcosm" of an overall organizational culture (Treviño, 1986, 1990). The word "culture" comes from the Latin word 'cultura' which is related to cult or worship. In its broadest sense, the term refers to the result of human interaction. Culture as Webster's Dictionary defines it as "the integrated pattern of human behaviour that includes thought, speech, action and artifacts and depends on individual's capacity for learning and transmitting knowledge to succeeding generations". Culture performs a number of functions within an organization. Corporate culture which is also popularly known as organizational culture serves as a control mechanism that guides and shapes the attitudes and behaviour of employees. A detailed definition is offered by organizational cultural theorist Edgar Schein, who defines it as a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, and that has worked well enough to be considered valid and therefore, to be taught to new members as the correct way to perceive, think and feel in relation to those problems (Schein, Edgar H., 1997). House and Javidan (2004) define culture as shared motives, values, beliefs, identities, and interpretations of or meanings attributed to significant events that result from the common experiences of members of collectives that are transmitted across generations.

Literature Review

People are one of the main assets of any organization but mostly companies continue to ignore their employees, instead seeking the magic formula, the immediate solution or the latest management tool, not giving organizational culture the importance it deserves. The notion that it is easier to implement a new policy than to invest time to analyze and improve internal organizational culture is not justified. An organizational culture of success tries to improve old ways without losing the tradition, it brings advantages to the organization, to the management and to the employees (Pirjol, Florentina & Maxim, Raluca Georgiana, 2012). Analyzing these critical incidents

can serve to assess the extent to which an organizational culture is ethical. Furthermore, these critical incidents can be fed back to organizational decision makers and can then be used to initiate organizational changes (Achilles Armenakis & Jeffrey Wigand, 2010). Institution building depends on the fluidity of organizational culture. Organizational culture as an entity nurtures the mission and the set of objectives of the organization (Kundu, 2009). O'Reilly, C. (2008) defines the role of corporate culture in promoting innovation and commitment in organizations. According to him, corporate culture is critical in developing and maintaining levels of intensity and dedication among employees that often characterizes successful firms. In his extensive study of organizational culture, Hofstede (1991) reported six dimensions: process oriented vs. results oriented, employee oriented vs. job oriented, parochial vs. professional, open system vs. closed system, loose control vs. tight control, and normative vs. pragmatic. However, he did not relate these dimensions to either antecedents or consequences of organizational culture.

Objectives of the Study

The present study is an attempt to assess the organizational culture in print media organizations. The study briefly addresses the following research questions:

1) To study the perceptions of employees regarding the prevailing organizational culture of their respective organizations.

2) To find out the differences between the oganizational culture prevailing in the Indian print media organizations.

Hypotheses

H1: There is no significant difference between the corporate cultures of the Indian print media organizations.

Methodology

Sample: The sample included four reputed newspaper publishing organizations (print media organizations) in Delhi. These four organizations are termed as Organization A, B, C and D in the study. The

respondents included all the full time employees ranging from executives to front line workers excluding part time workers. The sample frame of the study turned out to be 1896 employees for organization A; 568 for B; 832 for C, 465 for D with a total 3761. Thus, the sample frame for all the four organization was 3761 employees. From 3761, a sample of 500 employees across two strata (Executives and Non-executives) had been selected by using "stratified random sampling" technique for the study. Stratified sampling involves drawing separate probability samples within the subgroups to make the sample more efficient (Zikmund G.William, 2003). A stratified sample had been obtained by dividing the universe into two non-overlapping strata – Executive and Non-executives category. Then a simple random sample from each stratum had been selected. The stratified random sampling employed in this study was "disproportionate", meaning that a higher proportion of the universe had been chosen as sample in one stratum than in another. The main reason for using a disproportionate stratified random sample was the differences in the universe size of the four organizations.

The sample size of 500 was determined keeping the universe and sample frame in mind. The sample size constitutes approximately 8 percent of the universe. The total sample size was 500 employees out of which 251employees were from Organization 'A', 70 employees from Organization 'B', 119 employees from Organization 'C' and 60 employees from Organization 'D'.

The average age of the respondents was 30-40 years and their average experience was 5 years. With regard to their marital status, 68% were married and 32% were unmarried. 79% of the respondents were male and 21% female. A total of six hundred seventeen questionnaires were administered out of which only five hundred thirty two questionnaires could be received back. Thirty two questionnaires were discarded due to incompletion of data.

Research Instrument: The instrument used in the study was "schedule cum questionnaire" that had been developed on the basis of literature survey for assessing corporate cultures. The questionnaire consisted of 68 items/statements for assessing corporate culture. Out of these 68 statements, 8 statements were related to demographic profile and the remaining 60 statements (both positive and negative statements) were designed to assess the corporate culture. The items were rated on a 5-point scale ranging from 1 "almost no extent" to 5 "to a very large extent". All the items of the questionnaire were worded in behaviourally-observable statements. The reliability of items was assessed by computing the coefficient alpha. The Cronbach alpha value for 60 items of corporate culture was .927. For a measure to be acceptable, coefficient alpha should be above 0.7 (Nunnally, 1978). The value of Cronbach alpha has been found to be more than 0.70 indicating high degree of internal consistency among the items in the questionnaire. Construct validity was assessed by applying Varimax Factor Analysis to all the items of the questionnaire i.e., the 60 items measuring corporate culture were processed for factor analysis, a statistical method used to discover cluster of inter-related variables.

Through factor analysis, 13 factors/ dimensions were extracted for assessing the Corporate Culture. The thirteen factors for corporate culture were defined and labeled as Collaboration, Uncertainty Avoidance, Growth-oriented, Expressive, Autonomy, Experimentation, Contextualism, Openness, Confrontation, Power Distance, Trust, Group Norms and Importance given to merit. One-way Analysis of Variance (ANOVA) was conducted to test the hypothesis and to compare the corporate cultures of the four organizations.

Results

In its most basic form, organizational culture can be defined as the shared values and beliefs that enable members to understand their roles and the norms of the organization. The present study is based on the perception of employees towards their beliefs and assumptions regarding the organizational practices within their respective organizations. These organizational practices are observed and evaluated by the employees on thirteen dimensions. By assessing the organizations on these dimensions, the composite picture of their culture will be depicted.

Table 1: Comparison of Corporate Culture of
Four Companies – One-Way Analysis of Variance (ANOVA) (Sample size (N)=500)

Dimensions of Corporate Culture	Organization A (N=251)		Organization B (N=70)		Organization C (N=119)		Organization D (N=60)		Significant Pairs (*)	F-value
	Mean	SD	Mean	SD	Mean	SD	Mean	SD		
Collaboration	3.18	.67	2.59	.24	3.17	.63	3.53	.77	B v/s C A v/s B B v/s C C v/s D A v/s D	25.86**
Uncertainty Avoidance	3.58	.69	3.54	.42	3.66	.76	3.79	.76	A v/s D	1.94
Growth-Oriented	3.12	.74	2.27	.41	2.93	.68	3.00	.84	B v/s C A v/s B B v/s D A v/s C C v/s D	28.98**
Expressive	3.15	.82	2.73	.36	3.26	.59	3.30	.91	A v/s B B v/s C B v/s D	9.29**
Autonomy	3.13	.55	2.59	.41	3.00	.47	3.29	.56	B v/s C A v/s B B v/s D	24.70*
Experimentation	3.45	.87	3.66	.50	3.40	.80	3.37	.90	B v/s C	1.86
Contextualism	3.12	.44	3.14	.33	3.15	.49	3.16	.50	No two groups are significantly different at the .050 level	.242
Openness	3.08	.58	2.80	36	2.93	.46	3.18	.62	A v/s B A v/s C B v/s D C v/s D	7.71**
Confrontation	3.32	.64	3.16	.39	3.14	.60	3.47	.68	B v/s C B v/s D	3.18*
Power Distance	3.53	1.05	3.54	.67	3.59	1.04	3.88	.99	A v/s D	2.13
Trust	2.31	1.02	2.39	.57	2.68	1.07	2.50	1.4	A v/s C	3.93**
Group Norms	3.27	.75	3.19	.37	3.68	.65	3.63	.73	B v/s D B v/s C A v/s D A v/s C	13.85**
Importance given to Merit	3.25	.69	3.36	.43	3.21	.58	3.25	.66	No two groups are significantly different at the .050 level	.82

significant at .05 level
**significant at .01 level*

To test the hypothesis, certain statistical tools can be applied. When the means of more than two groups are to be compared, one-way analysis of variance (ANOVA) is the appropriate statistical tool. This is a technique to determine if statistically significant differences in means occur between two or more groups or not (Zikmund, William G., 2009). Hence, ANOVA was used to test the above stated hypothesis. The test statistic for ANOVA is the F ratio or the F-value.

Collaboration

Collaboration means giving help to, and asking for help from others. It means working together as individuals and in groups to solve problems and develop team spirit. The outcome of collaboration includes timely help, team work, sharing of experiences, improved communication and improved resource sharing. The indication could be productivity reports, more meetings, the involvement of staff in more joint decisions, better resource utilization and higher quality of decisions in meetings (Pareek, U., 2005). From Table 1, it can be observed that there was a significant difference among organization A, B, C and D (F-value = 25.86) on the dimension of collaboration. The significant pairs that emerged were organization A & D, A & B, B & C, B & D and C & D. This denotes that on the dimension of collaboration, there were significant difference between A & D, A & B, B & C, B & D and C & D. Thus, there were significant differences in the corporate culture of these pairs with respect to collaboration dimension of culture. Organization D scores the highest mean (3.53), whereas organization B has the lowest mean score (2.59) on this dimension. The mean score was approximately similar for organization A (3.18) and C (3.17). The contributing factors for high mean score for this dimension may be attributed to the favourable environment and better opportunities for decision making provided in organization D in comparison to other organizations.

Uncertainty Avoidance

Uncertainty avoidance is the extent to which people are ready to tolerate ambiguity or take risk. This aspect was first studied by the name of 'ambiguity tolerance'

by Adorno et al. (1950). It has been used by Hofstede (1980), who calls it 'uncertainty avoidance'. The dimension uncertainty avoidance, when compared among the four organizations did not show significant difference among the four organizations. This portrays that all the four organizations had quite a similar approach with respect to avoiding risk. The reason for less variation on this dimension may be attributed to the factor that the companies operating in media industry have to be sure about the reliability of a piece of information before printing it for public, therefore they all do not take the risk to present unreliable information to the public.

Growth-Oriented

The growth oriented or expanding cultures emphasize creation of organizations to consolidate and sustain gains and achievements in the culture. There were significant differences (F-value = 28.98) between organization A & C, A & B, B & C, B & D and C & D on the dimension of growth-orientaion indicating variations among the four organization cultures.

Expressive

In the expressive cultures, learning from other sources is highly valued. There is an emphasis on verbal expression and aesthetics as well as there is high verbal activity (talking, debating etc.). (Pareek. Udai, 2005). As it can be seen from Table 1 that there were significant differences (F-value=9.29) between organization A & B, B & C and B & D with regard to dimension of expression. On this dimension, organization D scored a higher mean of 3.30 than the mean score of other organizations. This denotes that in comparison to other organizations, employees are given more freedom to express their ideas and views in organization D. Hence there is high verbal activity in organization D than the other organizations. Whereas, organization B had scored the minimum mean 2.73 on this dimension which indicates that freedom to express was less in organization B in comparison to other organizations.

Autonomy

McCall defines autonomy as "the ability to exercise control over important aspects of life" (2001).

Autonomy is using and giving freedom to plan and act in one's own sphere. There is a significant difference between organization B & C, A & B and B & D on autonomy dimension, of corporate culture. When comparison was drawn the F-value was found to be 24.70. Organization D showed the highest mean 3.29 as compared to organization A, B, and C that showed mean value of 3.13, 2.59 and 3.00 respectively. This lead to the conclusion that freedom to plan and act in one's own work sphere (autonomy) was provided more to employees in organization D in comparison to autonomy provided in organization A, B and C.

Experimentation

Experimentation means using and encouraging innovative approaches to solve problems; using feedback for improving, taking a fresh look at things and encouraging creativity. According to the results given in Table 1, here were no significant variations in the experimentation dimension of corporate culture. The only significant pair that had emerged was organization B and C. The reasons for less variation may be that the key to success in print media industry is to frequently come up with innovative ideas, concepts and offer something new and different to the public. Hence, none of the organization is far behind in experimenting with new ideas and concepts as this is considered an essential requirement to compete for media companies. Earlier researches (Kundu, 2009) have disclosed that when the organizational culture encourages innovation, creativity and new ideas then the process of Institution Building becomes more dynamic.

Contextualism

In a high-context culture, the meaning of events, phenomena and behaviour are interpreted in the context in which they occur. One type of behaviour may be right in one context and not in another. The one-way analysis of variance (ANOVA) results in reveals that no two organizations were significantly different at 0.05 level for the dimension contextualism of corporate culture. This means that there were very minor variations in the mean score of all the four organizations or we can say that the mean score of each organization was nearly similar to the mean score

of other organizations. The reason for minor variations in this dimension may be attributed to the practice of acting according to the current situation or as per the context (contextualism) by each organization.

Openness

Openness can be defined as a spontaneous expression of feelings and thoughts, and the sharing of these without defensiveness. Openness may be in both directions, i.e., receiving and giving. Both these may relate to ideas (including suggestions), feedback (including criticism) and feelings. The comparison of openness aspect of corporate culture depicts that organization A & B, A & C, B & D, C and D showed a significant difference with 7.71 F- value. Openness means receiving without reservation and taking steps to encourage more feedback and suggestions from colleagues, customers and others. In other words, we can say giving ideas, information, feedback etc without any hesitation. Higher mean value i.e., 3.18 of organization D indicates that the environment was more open in it than that the other organizations which showed a 3.08 mean in organization A, 2.80 in B and 2.93 in organization C.

Confrontation

Confrontation can be defined as facing rather than shying away from problems. It also implies deeper analysis of interpersonal problems. Organization B & C and B & D were significantly different from each other on the dimension of confrontation and the F-value was 3.18. When compared with each other, organization D depicted a higher mean score 3.47 than others. This signifies that employees in organization D were more involved in taking up challenges and problems in effective manner rather than ignoring or postponing them.

Power Distance

Hofstede (1980) defined power distance as the extent to which members of a society accept that power in institutions and organizations is distributed unequally. The one-way analysis of variance (ANOVA) in Table 1 did not show major significant variations in the power distance dimension of corporate culture. The only significant pair that had emerged was organization A

and D. The reasons for less variation may be that distribution of power within employees may be quite similar in all the four organizations because all the four companies are operating in media industry and usually the companies in this industry have similar hierarchical levels where power and authority is distributed according to the designations in the organizations.

Trust

Caldwell et al. (2003) defined trust as "the relinquishing of one's personal choice or power in the expectant hope that another party will honor the elements of the social contract between the parties". It is reflected in maintaining the confidentiality of information shared by others and not in misusing it. There was significant variation between organization A and C on the dimension of trust among employees. The organization C had scored the highest on this dimension with a mean of 2.68. This clearly reflects that there was high level of trust among employees in organization C.

Group Norms

Groups develop common expectations called norms to reinforce the behaviour of people and prevent dysfunctional behaviours. On the group norms dimension, there exists significant difference between organization B & D, B & C, A & D and A & C. The F-value for group norms was 13.85. Organization C scored the highest mean 3.68 on this dimension which clearly specifies that employees generally adhered to group norms on most occasions.

Importance given to Merit

Importance given to merit is that characteristic of an organization which inculcates the confidence in every member of an organization that if they perform as they are being asked, they will achieve the rewards and recognition for their performance. The results did not show significant difference in 'importance given to merit' dimension of corporate culture between any two organizations. The reasons for less variation may be because each organization is aware about the importance that should be given to merit on job. If the efforts and talent of employees is recognized and rewarded by the organization then it leads to high level of motivation among employees. All the four organizations acknowledge this fact and therefore they give appropriate importance to the merit of employees.

Discussion

The results corroborate the null hypothesis for only five dimensions: uncertainty avoidance, experimentation, contextualism, power distance and importance given to merit. There are significant variations in the perceptions of employees with respect to the other eight dimensions: collaboration, growth-oriented, expressive, autonomy, openness, confrontation, trust and group norms. Thus, the hypothesis stands partially validated. The results further portrayed that Organization D had scored highest mean value on nine dimensions of corporate culture which are: collaboration, uncertainty avoidance, growth-oriented, expressive, autonomy, contextualism, openness, confrontation and power distance. Organization A and C were depicting the highest mean scores only for growth-oriented and group norms dimension respectively. However, organization B had scored the lowest mean value on seven dimensions of corporate culture, these were: collaboration, uncertainty avoidance, growth-oriented, expressive, autonomy, openness and group norms. The results can be supported by the fact that Organization D was considered to be more popular and reliable in comparison to organization B.

On the basis of the findings and results, it is recommended that the top management should encourage the employees to bring forward their grievances in open; frequent meetings can be organized for discussing problem areas; employees should be given more freedom to express their viewpoints and take decisions related to their work area. All this would automatically lead to the growth and expansion of the organization as well as it will also help in inculcating trust and ethical conduct among its employees. High trust within a company helps to minimize risks and decrease operating costs whereas low trust, on the contrary, prevents organizations from utilizing available human capital, developing large business networks and structures that can produce

economies of scale, synergy effect and guarantee sustainable development. Both work ethics and trust are social phenomena that result from interactions and interrelations among members of a given profession and organization, which occur during the socialization process. Hence, print media organizations should provide ample opportunities for interactions and socialization to their employees as this would lead to enhancement in interpersonal trust between them which will further lead to an increase in their ethical conduct and compliance.

Conclusion

It was seen that Indian Print Media Organizations are heterogeneous and as such exhibit differences in their corporate culture. The media companies that are lacking in certain cultural dimensions such as expressive, openness, trust, importance to merit etc should look for means and ways for enhancing these measures in their culture so that the print media organizations can promote ethical behavior amongst their employees who will reveal a true picture of the current issues for public. For that reason, media companies should emphasize on such cultural values, beliefs and norms that encourage right behaviour which will reinforce the practice of honesty and fairness amongst its personnel. The organizational culture is considered to be one of the most important influences on employee's behavior in an organization.

In recent years, a number of research studies have attempted to link various attributes of organizational cultures to ethical behavior. Wines William A. & Hamilton III J.B. (2009) have defined that ethical meltdown can be avoided by making significant culture change within the organization. Treviño, Weaver, Gibson, & Toffler (1999) found that cultural factors (leadership and reward systems that support ethical conduct, fair treatment of employees, ethics incorporated in daily organizational decision-making, and a focus on employees) all contributed to positive ethics-related attitudes and behaviors. An important component of the ethical culture was the reward system that supports ethical or unethical conduct (Treviño et al., 1999). The print media organizations can guide the conduct of its employees by embedding ethical values in its dominant culture by forming ethics committee and introducing ethics hotline. These measures would help media practitioners in dealing with ethical dilemmas and coming up with more rational and ethical decisions that may have a long lasting positive effect on their organizations as well as on the society. Further research should be carried out in order to integrate cultural and ethical practices with overall strategies and objectives of the Media organizations. Future research can also look how corporate culture and work ethics can affect the organizational effectiveness and business performance.

References

1. Achilles Armenakis And Jeffrey Wigand (2010), "Stakeholder Actions and Their Impact on the Organizational Cultures of Two Tobacco Companies", *Business and Society Review,* 115 (2), 147–171.

2. Adorno, T.W. and E. Frenkel-Brunswick (1983). "*The Authoritarian Personality"*, (Abridged Edition), Norton, New York.

3. Caldwell, C. and S. Clapham (2003), "Organizational Trustworthiness: An International Perspective", *Journal of Business Ethics*, 47(4), 349–364.

4. Gupta, R.K. (2002), Prospects of Effective Teamwork in India: Some Cautionary Conjectures from a Cross-Cultural Perspective (Mimmeograph).

5. Hofstede, G. (1980), "Culture's Consequences: International Differences in Work-related Values", *Beverly Hills: Sage.*

6. Hofstede, G. (1991), "*Cultures and Organizations: Software of the Mind"*, Berkshire: McGraw-Hill Book Company.

7. House, R. J. and M. Javidan (2004). '*Overview of Globe*', in R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman and V. Gupta (eds.), "*Culture, Leadership, and Organizations, The GLOBE Study of 62 Societies*", (Sage Publications, Thousand Oaks, CA), 9–48.

8. Kundu, Kaushik (2009), "*Influence of Organizational Culture on the Institution Building Process of an Organization*," Curie, 2(4), 48-57.

9. McCall, J. J. (2001), "Employee Voice in Corporate Governance: A Defense of Strong Participation Rights", *Business Ethics Quarterly,* 11, 195–213.

10. Nunnally, J.C. (1978). "*Psychometric Theory*", New York: McGraw Hill.

11. O'Reilly, C. (2008). "Corporations, Culture and Commitment: Motivation and Social Control in Organizations", *California Review Management,* 50(2), 85-101.

12. Pareek. Udai, 2005, "*Training Instruments in HRD and OD*," Tata McGraw-Hill Publishing Company Ltd:New Delhi, 2nd Edition.

13. Pirjol, Florentina & Maxim, Raluca Georgiana (2012) Annals of the University of Oradea, Economic Science Series; 2012, 21(2), 371-376.

14. Schein, Edgar H. (1997). *Organizational Culture and Leadership*, 2nd ed., San Francisco, CA: Jossey Bass.

15. Steven L McShane, Mary AnnVon Glinow, Radha R Sharma, (2006). *Organizational Behavior*, 3rd Edition, Tata McGraw Hill Publishing Co. Ltd.

16. Trevino, L.K. (1986). "Ethical Decision Making in Organizations: A Person Situation Interactionist Model", *Academy of Management Review*, 11(3), 601-617.

17. Trevino, L.K and Youngblood, S.A (1990). "Bad Apples in Bad Barrels: A Casual Analysis of Ethical Decision Making Behaviour", *Journal of Applied Psychology,* 75 (4), 447-476.

18. Treviño, L. K.,Weaver, G. R., Gibson, D. G., & Toffler, B. L. (1999). "Managing ethics and Legal Compliance: What Hurts and What Works". *California Management Review,* 41, 131-151.

19. Wines William A. & J.B. Hamilton III (2009), "On Changing Cultures by Injecting New Ideologies: The Power of Stories", *Journal of Business Ethics*, 89, 443-447.

20. Zikmund, William G. (2009), Business Research Method, Cengage Learning India Pvt Ltd.

21. India.gov.in, accessed on 22-3-2010 at 2:30 PM.

Comparative Analysis of IDS and Techniques in Mobile Ad-hoc Networks

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Abstract

Intrusion Detection System is a type of security management system for computers and networks. An Intrusion Detection System gathers and analyzes information from various areas within a computer or a network to identify possible security breaks, which include both intrusions (attacks from outside the organization) and misuse (attacks from within the organization).It sometimes uses vulnerabilities assessment (known as scanning), which is a technology developed to assess the security of a computer system or network. The process through which Intrusion Detection is achieved is called Intrusion Detection System. An IDS keeps the information or record of activities taking place in the system to determine and find if there is any activity that is quite different from usual activities that are taking place in the system or any activity that is violating the security rules. In this paper we are doing comparison of Distributive IDS, Cooperative IDS, Hierarchical IDS, Zone Based IDS, Agent Based Anomaly IDS, Local IDS, and Standalone IDS. We are also comparing Intrusion Detection Techniques including Anomaly, Misuse and Specification.

Keywords: NBIDS, HBIDS, Intrusion, MANET, Attacks.

Introduction

Any attempt to compromise the integrity, confidentiality and availability of information and resources. There is no such system that is totally secure. If we have the ability to detect the attack, once it comes into the network, we can stop it from doing any damage to the system or any data. Here is where intrusion detection system comes in.

Intrusion Detection System

❖ Intrusion: The act of wrongfully entering upon, seizing, or taking possession of the property of another. (Dhangar, Kulhare & Khan, 2013)

❖ Detection: The act of discovering or determining the presence, existence or fact of.

❖ Intrusion Detection: The act of discovering or determining the presence, existence or fact of .the wrongfully entering upon, seizing, or taking possession of the property of another.

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Intrusion Detection can be defined as a process of monitoring activities in a system, where system can be a standalone computer or any network system. The process through which Intrusion Detection is achieved is called Intrusion Detection System. An IDS keeps track on all activities taking place in the system to determine and find if there is any activity that is quite different from usual activities that are taking place in the system or any activity that is violating the security rules. Once an IDS determines such unusual activity or an activity that is known to be an attack, it than generates an alarm to alert the security administrator. IDS can also give a proper response to the malicious activity. Although there are several intrusion detection techniques for wired networks, but they are not suitable for wireless ad hoc networks

Characteristics of a Good Intrusion Detection System

• Continuous autonomous execution

• Fault tolerance

• Minimal Overhead

• Not easily deceived

Intrusion Detection System in MANET

An intrusion detection system is a defense system that detects unusual activities in a network and then tries to prevent such activities that may compromise system security. Intrusion Detection system achieve detection by continuously monitoring the network for unusual activity. Prevention part in IDS may include issuing alerts, taking direct preventive measures such as blocking the suspected connection. Intrusion Detection System is a process of identifying and responding to malicious activity targeting at computing and networking resources.

IDS Tools are capable of identifying insider originating from inside the network and external attacks. Intrusion Detection System comes when an intrusion has already occurred. That is why Intrusion Detection System are called second line of defense.

Limitation of MANET routing protocol, nodes in MANETs assume that all nodes cooperate with each other to send data. Due to this assumption attacker gets an opportunity to achieve significant impact on network with just one or two compromised nodes.IDS act as the second layer in MANETs.

Classification of Intrusion Detection System

Monitor, detect and respond to any unauthorized activity are the characteristics of Intrusion Detection System.

Base on Data Monitoring: Intrusion detection can be classified based on monitoring data as either:

1. Host Based Intrusion Detection System (HIDS)
2. Network Based Intrusion Detection System(NIDS)

Host Based Intrusion Detection System (HIDS):

It operates on single workstation. It monitors traffic on its host machine by utilizing the resources of its host to detect attacks.

Network Based Intrusion Detection System (NIDS):

It operates as stand-alone devices in a network. It monitors traffic on the network to detect attacks such as denial of service.

Based on the Network Infrastructure

MANET can be configured as flat or multilayered. An efficient IDS architecture for the MANET depends on the network infrastructure itself. There are six main architectures on network:-

Standalone IDS
Distributive and Collaborative IDS
Hierarchical IDS
Mobile Agent for intrusion detection
Local IDS
Zone based IDS

Table 1: Difference between NBIDS and HBIDS

Network Based Intrusion Detection System	Host Based Intrusion Detection System
Resides on the computer or application connected to a part of organization network and monitors network traffic on that segment looking for on-going or successful attacks.	Resides on particular computer or server known as host and monitors activity that occurs on that system looking for any malicious programme running.
NIDS uses monitoring port, when placed next to a networking device like hub, switch. The port views all the traffic passing through the device.	Capable of monitoring system configuration databases such as windows registers, and stored configuration files like .ini, .cfg, and .dat files.
Works on the principle of signature matching .i.e. comparing attack patterns to known signatures in their database.	Work on the principle of configuration and change management. An alert is generated when file attributes change, new files created, or existing files deleted.
NIDS are suitable for medium to large scale organization due to their volume of data and resources. So many smaller companies hesitant in deploying IDS.	Most HIDS has common architectures that is most host systems work as host agents reporting to a central console.

Standalone IDS

In this architecture intrusion detection system runs on each node to identify intrusions independently [3]. Each node takes its own decision based on the information it has collected by itself. There is no interaction among the nodes present in the network and no data is exchanged between them. Though nodes are in same network they don't know anything about each other. It is suitable in a network where not all nodes are capable of running intrusion detection system. It is more suitable for flat networks than for multilayered networks infrastructure. Because of its limitation that each node maintains only its own information and does not know anything about other nodes in the network, they might not be able to detect all intrusions. Therefore this architecture is not chosen in most of the IDS for MANETS.

Distributive and Collaborative IDS

In this architecture there is a rule that every node has to participate in intrusion detection and response by using IDS agent running on them. The IDS agent is responsible for detecting and collecting local events and data to identify possible intrusions and responding them individually. In this architecture neighboring IDS agents cooperatively participate in finding intrusions globally.

Hierarchical IDS

It is an extended version of distributed and collaborative IDS architecture. This architecture is used where network is divided into clusters therefore it uses multi layered network. It consists of cluster heads that act as control points which are similar to switches, routers, or gateway in wired network.

Mobile Agent for IDS

It uses mobile agents to perform specific tasks on a node. It allows distribution of intrusion detection tasks. Because it has the ability to move around the large network therefore each mobile agent is assigned one specific task to perform and then one or more mobile agents are distributed into each node in the network. This is how intrusion detection task is distributed. It helps to reduce the consumption of power which is hard to find in mobile ad hoc network.

Zone Based Intrusion Detection System

ZBIDS is a distributed IDS, in which two levels of hierarchical structure is defined. It simultaneously collects node-tracing data and network traffic information to construct anomaly-based IDS. ZBIDS can detect not only the simple intrusion without sequence characters by a pre-classifier but also with the special sequence characters by a Markov-chain-based classifier.

Comparative Analysis of IDS

Distributed IDS introduced by R.Nakkeeran consider only local mobility issues; it is Anomaly Based Intrusion Detection System, it uses anomaly based technique to find misbehaving nodes and attacks. It handles attacks like Distributed Denial of Service. Architecture of Distributed IDS is modular and distributed. It uses Mobile Agent Based Algorithm to deal with attacks. Cooperative IDS introduced by Y.Haung is also anomaly based intrusion detection system i.e. it uses anomaly based method and consider only local mobility issues. It deals with DDOS (distributed denial of service) Attack. It uses cluster based distributed algorithm and it consist of hierarchical architecture. Zone Based IDS introduced by B.Sun, K.Wu, and H.W Pooch causes detection and response latency even when there is enough evidence on local nodes. It uses Aggregation algorithm. Architecture of Zone Based IDS is Distributed and Collaborative. It is an anomaly based intrusion detection system; it uses anomaly techniques to identify attacks and to find misbehaving nodes. Agent Based IDS introduced by Rosa Cano is a Signature Based Intrusion Detection System i.e. it uses signature based technique or misuse technique to identify malicious nodes and attacks. It fails to address security issues. Layout of Zone Based IDS is distributed, Hierarchical multi-agent form. It uses Agent Based cooperative and distributive algorithm to deal with attacks. LIDS (local intrusion detection system) instigated by L.Portnoy uses both misuse and anomaly ID method to find misbehaving nodes. It cannot identify the attacker efficiently. It uses Density Based Algorithm and its architecture is distributed and collaborative.

Topic	Author	Architecture	ID Method	Issues	Algorithm	Attacks
1) Distributed IDS	R.Nakkeeran	Modular and Distributed	Anomaly Based	Consider only local mobility	Mobile Agent Based(independently & cooperatively)	Distributed Denial Of Service
2) Cooperative IDS	Y.Haung	Hierarchical	Anomaly Based	Consider only local mobility	Cluster Based distributed scheme	Distributed Denial Of Service
3) Zone Based IDS	B.Sun, K.wu & H.W Pooch	Distributed & Collaborative	Anomaly Based	Cause detection and response latency even when there is enough evidence on local nodes	Aggregation Algorithm	Routing Disruption Attack
4) Agent Based Anomaly Detection	Rosa Cano	Distributed & Hierarchical multi-agent	Signature Based	It fails to address security issues	Agent Based Cooperative and Distributive	Sql Injection Attack
5) Local IDS	L Portnoy	Distributed & Collaborative	Misuse, Anomaly Based	Cannot identify the attacker efficiently	Density Based Algorithms	Denial Of Service, Penetration Attack
6) Hierarchical IDS	Hou Young, Fieng Zheng	Hierarchical	Anomaly	sensor node selfishness	Quantum Clustering Algorithm, Potential Function Algorithm	Node Replication Attack
7) Standalone IDS	Manoj Rameshchandra Thakur	Standalone	Anomaly	No communication between nodes therefore no alert information is passed	Standalone Algorithm	Novel Attacks

Intrusion Detection Techniques

There are three types of Intrusion Detection Techniques:

  Anomaly Detection
  Misuse Detection
 Specification-Based Detection

Anomaly Detection

In anomaly detection system a baseline or normal activity is created. Any activity in the system if deviate from the baseline or normal activity than that activity is treated as an intrusion. Anomalies also known as outliers, exceptions are patterns in data that do not conform to a well-defined concept of normal behavior of a system. (Karthikeyan & Rana, 2010)

A simple example showing anomalies O_1, O_2, O_3 that differ from normal behavior N_1 and N_2.

Anomaly detection technique is designed to uncover the patterns whose behaviour is different from the normal and that deviates from it. Then that pattern is marked as possible intrusion. Anomaly Detection Technique can be categorized into:

• Static
• Dynamic
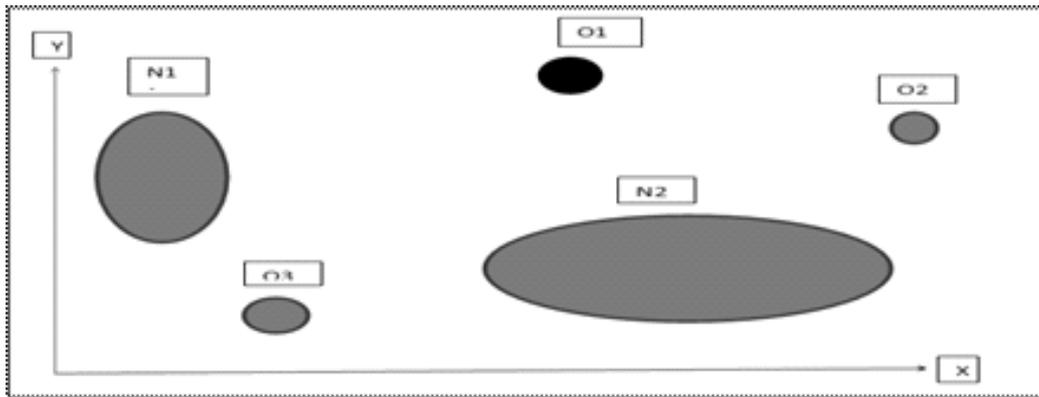
Fig. 1: Example of Anomaly

Static Anomaly Detector: A portion of the monitored system remains constant or static. The static portion of the system consist of two parts

*   The system code
*   The portion of system data that remains constant

Static portion of the system can be a set of strings (such as files) that if deviates from its original form, either an error has occurred or an intruder has altered the static portion of the system. Static anomaly detectors are used to check the data integrity.

Dynamic Anomaly Detector: In this system behavior is defined as a sequence of distinct events. The system may depend on parameters that are set during initialization to reflect the uncertain behavior. Initial behavior of system is assumed to be normal.

In anomaly based intrusion detection every node in the ad hoc network participates in intrusion detection and response to it. Every node is responsible for finding signs of intrusion locally and independently by observing the activities of user and system and the communication activities within the radio range.

Procedure for Anomaly Detection:

*   Select or partion the audit data so that the normal data set has low chaos.
*   Perform suitable data transformation
*   Compute the classifier
*   Testing of data is done by classifier
*   Use alarms to produce intrusion reports.

The major requirements of anomaly based intrusion detection model are FPR(false positive rate), and high TPR (true positive rate). Parameters used for these requirements are :

*   True Positive
*   True Negative
*   False Positive
*   False Negative

True Positive (TP): This occurs when IDS generates true alerts on a detected malicious traffic. TP is total malicious activity detected.

True Negative (TN): This occurs when no malicious activity occurs in the network and no alarm is generated by IDS.

False Positive (FP): This occurs when an IDS wrongly raises a false alarm over a authorized activity in the network.

False Negative (FN): This occurs when IDS fails to detect the malicious activity in the network.

False Positive Rate (FPR): This shows the proportion of exceptions which were not intrusions but then also alarm was generated for them. FPR is obtained using the following formula;

FPR=FP/FP+TN

True Positive Rate (TPR): This shows how good IDS is in detection intrusions in the network. It is also known as Detection Rate. Obtained as:

TPR=TP/TP+FN

The best IDS is one that have FPR less than 1% and TPR .
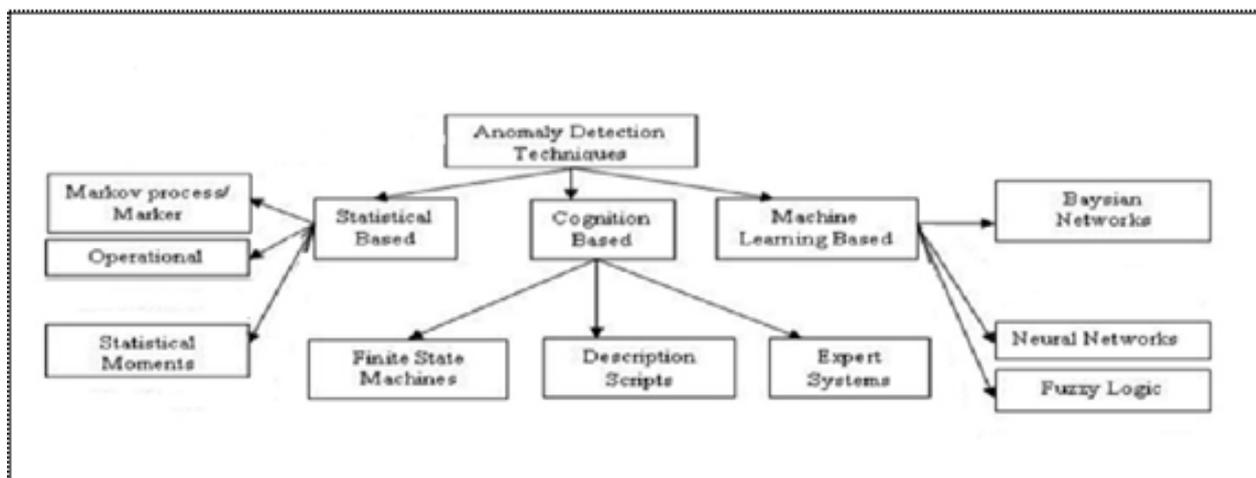
Fig. 2: Classification of Anomaly Based Intrusion Detection

Classification of Anomaly Based Intrusion Detection:

Statistical Anomaly Based Intrusion Detection: A normal TCP traffics follow three way handshake process for connection setup, data transfer phase, and then completes the connection drop down. In the absence of attacks different types of TCP packets are balanced. Statistical anomaly based IDS captures this behavior and differentiates between the long term and short term observations in a protected environment to avoid false alarms to be generated while normal traffic changes.

Operational Model: The number of events that occur over a period of time determines the alarm to be raised if less than 'm' or more than 'n' events occur. For example executable files size is restricted in some organization about 4mb. The difficulty in this sub model is determining 'm' and 'n'.

Markov Process/ Marker Model: In this model intrusion detection is done by investigating the system at fixed intervals and keeping track of its state. Probability of each state at a given time interval say Is .When an event occurs there is a change in the state of the system and its behavior is considered anomaly if the probability of occurrence of that state is low.

Statistical Moment: Any co-relation is said to be moment. If the event that falls outside the set interval above or below the moment is said to be anomalous. There are major two advantages over operational

model. First prior knowledge is not required for determining the normal activity in order to set limits. Second determining the intervals depends on observed user data as it varies from user to user. In this model higher weight is given to recent activities.

Cognition Based Detection Technique: Also known as **Knowledge Based or Expert Based.** It is used to classify audit data based on set of rules. It involves three steps.

1) Different attributes and classes are identified from training data

2) Set of classification rules

3) Parameters and Procedures are derived

Finite State Machine: It models attacks as a network of states and transitions (matching events). A state contains information of the past, i.e. any changes made in the input are noted and based on it transition take place. An action is a description of an activity that is to be performed at given moment. Several actions are performed like entry action, exit action, and transition action.

Every observed event that represent attack scenario is applied to the finite state machine. Any machine that reaches its final state indicates an attack.

Description Scripts: In this scripting languages which can describe signature of attacks on computer and network are given by the intrusion detection community. These scripting languages are capable of
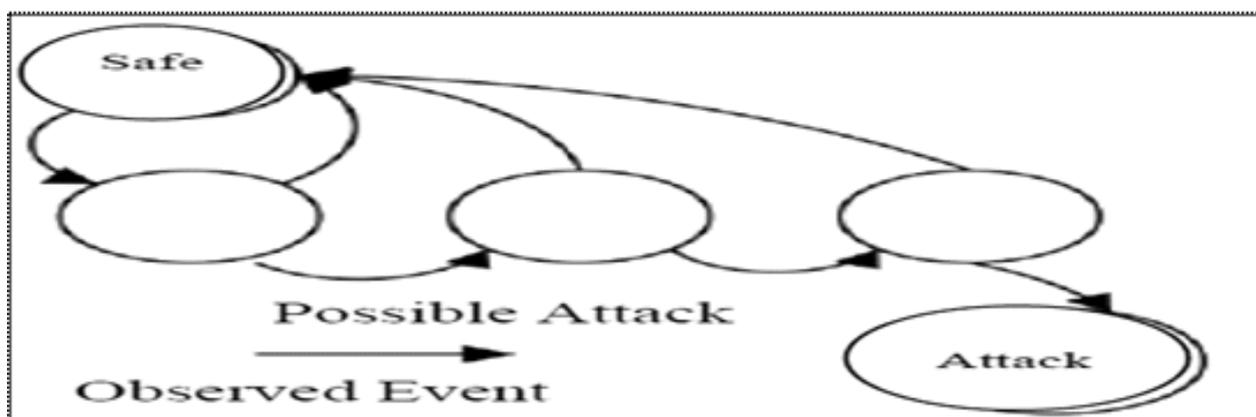
Fig. 3: Finite State Machine

identifying the sequences of specific activities that point out attacks.

Adapt System: In this system human expertise is used for problem solving. It solves uncertainties by consulting one or more human experts. They are efficient in certain problem domain and are also considered as a class of artificial intelligence (AI) problems. Adept Systems are trained based on extensive knowledge of patterns associated with known attacks provided by human experts.

Machine Learning Based Detection Techniques: It is used to find outliers in data set. It uses small subsets to find unknown attributes of test points. It allows patterns to be analyzed and categorized based on implicit or explicit model. The major drawback of this technique is their resource expensive nature.

Bayesian Networks: It is a probabilistic model. It helps in solving the problem that requires the prediction of the outcome of the system consisting of high number of interrelated variables. It goes through the training period in which it learns the behavior of the model after which it is able to predict its outcome. Successful applications of Bayesian networks include for example email classification for spam detection (Yang et al., 2006), failure detection in industrial production lines (Masruroh & Poh, 2007), reconstruction of trafûc accidents (Davis &Pei, 2003) (Davis, 2006).

Neural Networks: The goal for using neural networks for intrusion detection it to be able to generalize from incomplete data and to classify whether the data is normal or intrusive. It consists of collection of processing elements that are highly interconnected. In this we are given a set of inputs and a set of desired output. The transformation from input to output is done by the weights associated with the processing elements which are interconnected. By modifying these interconnections, the network is able to get desired output. Its ability of high tolerance for learning by example makes neural networks flexible and powerful in intrusion detection system.

It can easily represent linear and non-linear relationships between input data and output data. Even if the data is incomplete neural networks are able to correctly find the different data classes taken from the network other sources.

Fuzzy Logic: It is difficult to predict normal and intrusive activities in networked computer as boundaries are not well defined. This prediction process may generate false alarms in anomaly based intrusion detection systems. It reduces the false alarm rate in while determining intrusive activities. It can detect both misuse and anomaly attacks. It consists of fuzzy rules that can be applied to determine normal and abnormal behavior in computer networks. The main problem with this process is to make good fuzzy classifiers to detect intrusions.

Misuse Detection

In this system Legal or Illegal behavior is defined and then the observed behavior is compared accordingly in. If the behavior of the activity does not matches with the normal activity behavior than that activity is

treated as an intrusion. It is able to detect attacks based on predefined signatures or patterns, a set of events that match a predefined pattern. Signature based detection technique are effective in detecting attacks without too many false alarms , but at the same time this technique is unable to detect common attacks whose signatures are unknown.

In this technique we know signatures of attacks and some or all nodes in the system execute intrusion detection logic; such nodes are said to enact as intrusion detection subsystem.

The objective or goal of any intruder in any network is to deliver malicious packets at the end point and harm the destination point. The intrusion detection system tries to find out occurrence of such packets while the transmission taking place between source node and destination node to take corrective actions. Routing protocols will have an effect on the intrusion detection capabilities in network. In ad hoc network with many nodes there may be repetitious paths between a given source node and destination nodes. The routing protocols might switch packets while they are being transferred from source node to destination node. Because of this it may become difficult even to detect those attacks whose signature is known. Therefore this technique is inefficient and is not possible in many cases where resource constraints are applied.

Rule Based Languages: This is the most widely used approach in misuse detection. The patterns of known attacks are specified as rule sets, and a forward-chaining expert system is usually used to look for signs of intrusions. Here we discuss two rule-based languages, rule-based sequence evaluation language (RUSSEL) (Mounji, Charlier, Zampunieris, &Habris, 1995) and production-based expert system tool set (P-BEST) (Lindqvist&Porras, 1999). Other rule-based languages exist, but they are all similar in the sense that they all specify known attack patterns as event patterns.

RUSSEL

RUSSEL is the language used in the advanced security audit trail analysis on UNIX (ASAX) project (Mounji, Charlier, Zampunieris, & Habris, 1995). It is a language specifically tailored to the problem of searching arbitrary patterns of records in sequential files. The language provides common control structures, such as conditional, repetitive, and compound actions. Primitive actions include assignment, external routine call, and rule triggering. A RUSSEL program simply consists of a set of rule declarations that are made of a rule name, a list of formal parameters and local variables, and an action part. RUSSEL also supports modules sharing global variables and exported rule declarations.

When intrusion detection is being enforced, the system analyzes the audit records one by one. For each audit record, the system executes all the active rules. The execution of an active rule may trigger (activate) new rules, raise alarms, write report messages, or alter global variables, for example. A rule can be triggered to be active for the current or the next record. In general, a rule is active for the current record because a prefix of a particular sequence of audit records has been detected. When all the rules active for the current record have been executed, the next record is read and the rules triggered for it in the previous step are executed in turn. User-defined and built-in C-routines can be called from a rule body.

RUSSEL is quite flexible in describing sequential event patterns and corresponding actions. The ability to work with user-defined C-routines gives the users the power to describe almost anything that can be specified in a programming language. The disadvantage is that it is a low-level language. Specifying an attack pattern is similar to writing a program, although it provides a general condition trigger framework and is declarative in nature. The feature that rules can share global variables introduces the possibility of bugs along with the convenience of sharing information among different rules.

P-BEST

P-BEST was developed for the multiplexed information and computing service (Multics) intrusion detection and alerting system(MIDAS) and later employed by the intrusion detection expert system (IDES), NIDES, and the event monitoring enabling responses to anomalous live disturbances

(EMERALD) (Lindquist Y Porras, 1999). The P-BEST toolset consists of a rule translator, a library of runtime routines, and a set of garbage collection routines. Rules and facts in P-BEST are written in production rule specification Language. The rule translator is then used to translate the specification into an expert system program in C language, which can then be compiled into either a stand-alone, self-contained executable program or a set of library routines that can be linked to a larger software framework. The P-BEST language is quite small and intuitive. In P-BEST, the user specifies the structure of a fact (e.g., an audit record) through a template definition referred to as a pattern type. For example, an event consisting of four field sæevent_type (an integer), return code (an integer), username (a string), and hostname (a string) can be defined as ptype [event event type: int, return code: int, username: string, hostname: string].Thus, P-BEST does not depend on the structure of the input data. One important advantage of P-BEST is that it is a language pre-processor (i.e., it generates a precompiled expert system) and can extend its ability by invoking external C functions. However, it shares a similar problem with RUSSEL: It is a low-level language. Specification of attack patterns in P-BEST is time consuming. When many related rules are included in a system, correctness of the rules is difficult to check due to the interaction of these rules.

Specification-Based Detection

A set of constraints are defined in this system that describes the correct operation of the program or protocol and then monitors the program with respect to the defined constraints. This technique provides the capability of detecting previously unknown attacks.

Comparative Analysis between Anomaly, Misuse and Specification

Cost of Anomaly based ids is comparatively less than Misuse based ids where as cost of Specification ids are much higher than both. Anomaly based technique identifies attacks based on behavior, Misuse based technique identifies attack if that attack is already identified before by matching the attacks and Specification based technique defines the

Table 4: Comparison of ID Techniques

Anomaly IDS	Misuse IDS	Specification IDS
recognize a typical behavior	recognize known attacks	Describes the desirable behavior of the system
Cost is less	Costly than anomaly	Expensive
Define a set of metrics for the system	Define a set of attack *signatures*	Define a set of specifications
Build a statistical model for those metrics during "normal" operation	Detect actions that match a signature	Detect specifications that does not match with the specified system's specification
Detect when metrics differ significantly from normal	Add new signatures often	Sequence of operations executed outside of the system's specifications is considered to be a security violation
Examples: MIDA(Modular Interactive Data Acquisition)	Examples: Cyber Cop, GRIDS(Global Resource Information Database), Stalker, Tripwire	Examples: SHIM(System Health and Intrusion Monitoring)

specifications for the system and if anything goes out of that specification than that is considered as attack.

Conclusion

Only intrusion detection techniques are not sufficient for securing wireless network but there is also need of good Intrusion Detection System. In this paper we have analysed various IDS and their techniques. According to the nature of mobile ad hoc networks, almost all of the intrusion detection systems (IDSs) uses anomaly based technique to identify malicious nodes and attacks.

References

1. Dhangar Kiran, Kulhare Deepak and Khan Arif (2013), "Intrusion Detection System (A Layered Based Approach for Finding Attacks)." *International Journal of Advance Research in Computer Science and Software Engineering,* 3(5).

2. Karthikeyan K.R, A.Indra (2010). "Intrusion Detection Tools and Techniques - A Survey". *International Journal of Computer Theory and Engineering,* 2(6), 901-906.

3. Tamilarasan S, Aramudan, (2011)."A Performance and Analysis of Misbehaving Node in Manet Using Intrusion Detection System". *IJCSNS International Journal of Computer Science and Technology,* 11(5), 258-264.

4. Yang, Zhen, et al. (2006) "An Approach to Spam Detection by Naive Bayes Ensemble Based on Decision Induction", Intelligent Systems Design and Applications, in Proc. of Sixth International Conference, 861-866.

5. Masruroh N. A. and Poh K. L. (2007) "A Bayesian Network Approach to Job-shop Rescheduling," *International Journal of Computational Science* 1(2), 162-178.

6. Davis, Pei Jianping (2006). "Speed as a Risk Factor in Serious Run-off-road Crashes: Bayesian Case-Control Analysis with Case Speed Uncertainty", *Journal of Transportation and Statistics,* 9(1), 17-28.

7. Ning, Peng, and Jajodia Sushil. (2003). "Intrusion Detection Techniques." The Internet Encyclopedia.

8. Mounji, Charlier, Zampunieris, & Habris, "Distributed Audit Trail Analysis" In D.Baleson and R.Shrey (Eds), Proceedings of ISOC'95 Symposium on Network and Distributed System Security, IEEE computer Society, 102-112.

9. Lindqvist and Porras Y. "Detecting Computer and Network Misuse Through the Production Based Expert System Tools", Proceeding of the IEEE 1999 Symposium on Security and Policy, 146-161.

Indian Mergers and Acquisitions: Environmental Analysis in Current Competitive Business Environment

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Abstract

Since the advent of globalization and new economic policies where in government has become liberal in terms of economic activities, this leads to privatization, commercialization, modernization and paving way for rational and optimal use of resources. In order to meet the above the companies have adopted economic appraisal, financial appraisal, project appraisal, leads to merger and acquisitions. Merger is the combination of two companies into a larger company, commonly voluntary and involves stock swap and cash payment to the target. Acquisition is the buying of one company by another, usually a smaller company by a larger one.

The trends of mergers and acquisitions in India have changed over the year since economic reforms 1991 inspired by liberalization, privatization and globalization. Favourable government policies, buoyancy in economy, dynamic attitude of Indian entrepreneurs like achieving synergies, to get good market share, cross selling, economies of scale, resource transferring and reducing tax liability are key factors behind the changing trends of mergers and acquisitions. Acquisitions of foreign companies by the Indian businesses have been the latest trend in the Indian corporate sector. With the increasing numbers of Indian companies opting for mergers and acquisitions that generates efficiency, productivity, cost saving, etc. India is now one of the leading nations in the world in terms of mergers and acquisitions.

Different sectors like telecom, finance, FMCG, construction material, automobile industry and steel industry have resorted to mergers and acquisitions in recent times.

The paper will examines the emerging trends of various companies based on published data. The paper would also reveal trends, progress, successful implementation, reasons of failure and legal framework relating to mergers and acquisitions.

Keywords: Mergers, Acquisitions, Takeovers, Global Competitiveness, Types, Trend and Strategies, Motives and Legal Framework.

Introduction

The dawn of globalization and new economic policies leads to privatization, commercialization, and modernization. The government has become liberal in terms of economic activities, this and paving way for rational and optimal use of resources. To meet the above mentioned goals the companies have adopted economic appraisal, financial appraisal, project appraisal, leads to merger and acquisitions.

The trends of mergers and acquisitions in India have changed over the year since economic reforms 1991.

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The key factors behind the changing trends of mergers and acquisitions are favourable government policies, buoyancy in economy, dynamic attitude of Indian entrepreneurs like achieving synergies, to get good market share, cross selling, economies of scale, resource transferring and reducing tax liability. The latest trend in the Indian corporate sector is that Indian businesses are acquiring foreign companies. With the increasing numbers of Indian companies opting for mergers and acquisitions that generates efficiency, productivity, cost saving, etc. India is now one of the leading nations in the world in terms of mergers and acquisitions.

The process of Mergers and Acquisitions has gained substantial importance in today's corporate world. The increased competition in the global market has promoted the companies to go for mergers and acquisitions as an important strategic choice. These

are used as tools for business expansion and restructuring. Enterprises always have innate desire to acquire monopoly position or substantial market power, even for a brief period. On the more positive side, mergers and acquisitions may be critical to the healthy expansion of business firms as they evolve through successive stages of growth and developments. Both internal and external growth may be complementary in the long – range evolution of firms. Successful entry into new product markets and into new geographical markets by a firm may require mergers and acquisitions at some stage in the firm's development. Successful competition in international markets may depend upon capabilities obtained in a timely and efficient fashion through mergers and acquisitions. One reason why merger activity is concentrated in the business of high business activity may be that firms are not motivated to make large investment outlays when business prospectuses are not favourable. Only when future benefits accruing to a business endeavor exceeds its costs is the action warranted. When such favourable business prospectus are joined with changes in competitive conditions directly motivating a new business strategy, mergers and acquisitions activities will be stimulated.

India is witnessing merger and acquisition in almost every field viz. telecom, FMCG finance, automobile and metal industries.

Conceptual Framework
Mergers and Acquisitions

The expression mergers and acquisitions indicates the corporate policy of handling the purchasing and selling and merging of different entities that can financially support the developing entity to expand rapidly without forming another industrial entity.

Definition of Merger

Merger is the combination of two companies into a larger company. Such actions are commonly voluntary and involve stock swap and cash payment to the target.

It is commonly seen that very few mergers have been successful in appending to the share worth of the acquiring firm. Instead, they endorse monopolistic attitude by trimming down the prices, taxes, etc. which can work against the public interests.

Definition of Acquisition

Acquisition usually refers to a purchase of a smaller firm by a larger one. An acquisition may be friendly or hostile. Generally, acquisition refers to the buyout of a smaller business identity by a bigger one, but sometimes even a smaller business identity can takeover the administration control of a bigger and well established firm, usually referred to as a reverse takeover.

Difference between Merger and Acquisition

Though the two words mergers and acquisitions are often spoken in the same breath and are also used in such a way as if they are synonymous, however, there are certain differences between mergers and acquisitions.

Causes of Mergers and Acquisitions

There are a number of reasons that mergers and acquisitions occur. These issues generally relate to

Merger	Acquisition
The case when two companies (often of same size) decide to move forward as a single new company instead of operating business separately.	The case when one company takes over another and establishes itself as the new owner of the business.
The stocks of both the companies are surrendered, while new stocks are issued afresh.	The buyer company "swallows" the business of the target company, which ceases to exist.
For example, Glaxo Wellcome and SmithKline Beehcam ceased to exist and merged to become a new company, known as Glaxo SmithKline.	Dr. Reddy's Labs acquired Betapharm through an agreement amounting $597 million.

business concerns such as competition, efficiency, marketing, product, resource, and tax issues. Let us begin our exploration of why corporate combinations occur.

1. Economies of Scale: -This generally refers to a method in which the average cost per unit is decreased through increased production, since fixed costs are shared over an increased number of goods. In a layman's language, more the products, more is the bargaining power.

2. Increased Revenue /Increased Market Share: - This motive assumes that the company will be absorbing the major competitor and thus increase its power by capturing increased market share to set prices.

3. Cross Selling: - When one manufacturer acquires and sells complimentary products is referred as cross selling. Eg: a bank buying a stock broker could then sell its banking products to the stock brokers customers, while the broker can sign up the bank' customers for brokerage account.

4. Corporate Synergy: - Better use of complimentary resources. It may take the form of revenue enhancement (to generate more revenue than its two predecessor standalone companies would be able to generate) and cost savings (to reduce or eliminate expenses associated with running a business).

5. Taxes:- A profitable can buy a loss maker to use the target's tax right off i.e. wherein a sick company is bought by giants.

6. Geographical or Other Diversification:- This is designed to smooth the earning results of a company, which over the long term smoothens the stock price of the company giving conservative investors more confidence in investing in the company. However, this does not always deliver value to shareholders.

7. Resource Transfer:- Resources are unevenly distributed across firms and interaction of target and acquiring firm resources can create value through either overcoming information asymmetry or by combining scarce resources. Eg: laying off employees, reducing taxes etc.

8. Improved Market Reach and Industry Visibility:- A merger may expand two companies' marketing and distribution, giving them new sales opportunities. A merger can also improve a company's standing in the investment community.

Impact of Mergers and Acquisitions

Mergers and acquisitions bring a number of varying changes within the organization. The size of the organizations, its stocks, shares and even the ownership also change.

Impacts on Employees: Mergers and acquisitions may have great economic impact on the employees of the organization. There could always be the possibility of layoffs after any merger or acquisition. Besides, those who are working would also see some changes in the corporate culture leading to emotional and physical problems.

Impact on Management: Due to corporate culture clash the percentage of job loss may be higher in the management level than the general employees.
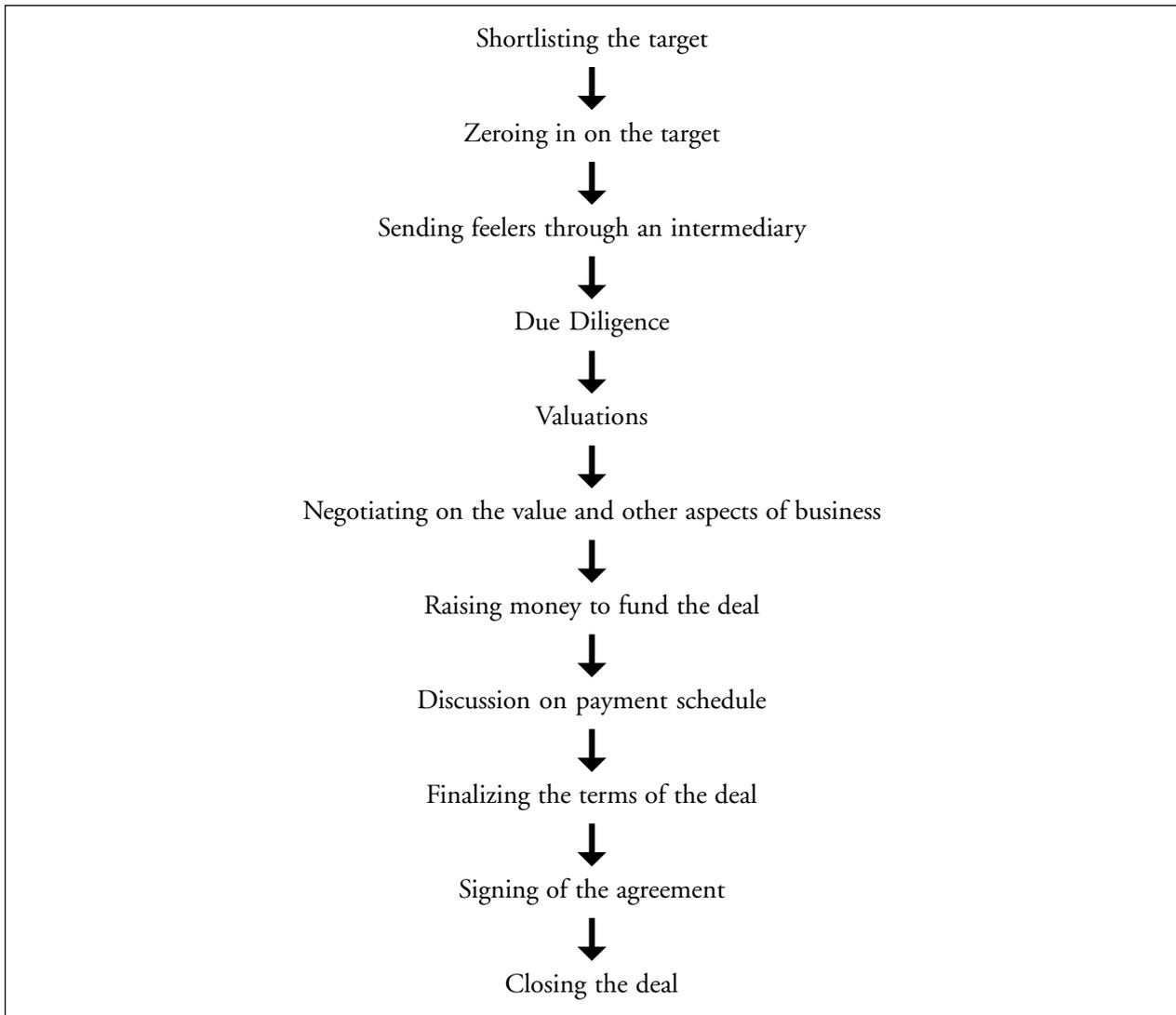
Impact on Shareholders: Impact of mergers and acquisitions also include some economic impact on the shareholders. If it is a purchase, the shareholders of the acquired company get highly benefited from the acquisition as the acquiring company pays a hefty amount for the acquisition. On the other hand, the shareholders of the acquiring company suffer some losses after the acquisition due to the acquisition premium and augmented debt load.

Impact on Competition: Mergers and acquisitions have different impact as far as market competitions are concerned. For example, the competition in the financial services industry is relatively constant. On the other hand, change of powers can also be observed among the market players.

Objectives

The broad objective of this paper is to understand recent trends of Indian Mergers and Acquisitions in current Competitive Business Environment

The other objective includes the study of progress of mergers & acquisitions, identifying the reasons behind the failure and the hurdles faced due to legal framework in the current scenario.

Shortlisting the target

↓

Zeroing in on the target

↓

Sending feelers through an intermediary

↓

Due Diligence

↓

Valuations

↓

Negotiating on the value and other aspects of business

↓

Raising money to fund the deal

↓

Discussion on payment schedule

↓

Finalizing the terms of the deal

↓

Signing of the agreement

↓

Closing the deal

Fig. 1: Merger & Acquisition Deal Process

Methodology

The study is based on secondary (published) data. The data from various published sources has been collected to get the insight for the study.

Mergers and Acquisitions and India

Until up to a couple of years back, the news that Indian companies having acquired American-European entities was very rare. However, this scenario has taken a sudden U turn. Nowadays, news of Indian Companies acquiring foreign businesses is more common than other way round.

The Indian IT and ITES companies already have a strong presence in foreign markets; however, other sectors are also now growing rapidly. The increasing engagement of the Indian companies in the world markets, and particularly in the US, is not only an indication of the maturity reached by Indian Industry but also the extent of their participation in the overall globalization process.

If you calculate top 10 deals it self account for nearly US $ 21,500 million. This is more than double the amount involved in US companies' acquisition of Indian counterparts.

Table 1: Ten Acquisitions Made by Indian Companies Worldwide

Acquirer Company	Target Company	Country Targeted	Deal value ($ m)	Industry
Tata Steel	Corus Group plc	UK	12,000	Steel
Hindalco	Novelis	Canada	5,982	Steel
Videocon	Daewoo Electronics Corp.	Korea	729	Electronics
Dr. Reddy's Labs	Betapharm	Germany	597	Pharmaceutical
Suzlon Energy	Hansen Group	Belgium	565	Energy
HPCL	Kenya Petroleum Refinery Ltd.	Kenya	500	Oil and Gas
Ranbaxy Labs	Terapia SA	Romania	324	Pharmaceutical
Tata Steel	Natsteel	Singapore	293	Steel
Videocon	Thomson SA	France	290	Electronics
VSNL	Teleglobe	Canada	239	Telecom

Source: http://ibef.org
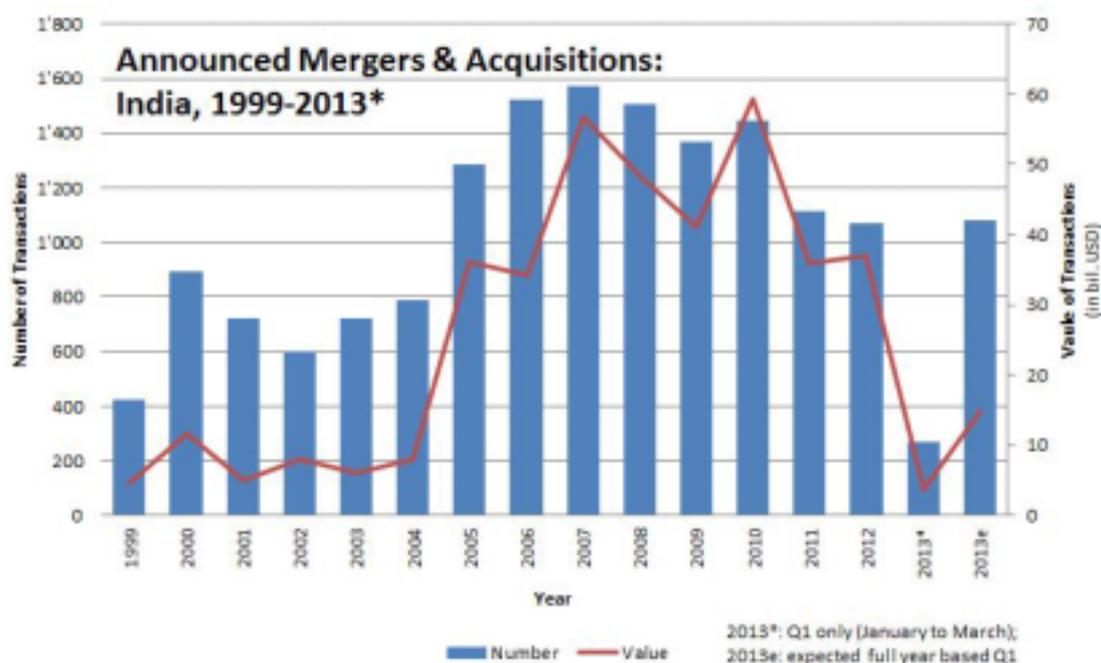
Fig. 2: Indian Outbound Deals Since 2000
Source: http://ibef.org

Indian outbound deals, which were valued at US$ 12 billion in 2000-01, increased to US$ 32 billion in 2005, and further crossed US$ 52 billion-mark in 2007. In fact, 2007 will be remembered in India's corporate history as a year when Indian companies covered a lot of new ground. They went shopping across the globe and acquired a number of strategically significant companies. This comprised 60 per cent of the total mergers and acquisitions activity in India in 2007. And almost 99 per cent of acquisitions were made with cash payments.

Merger and acquisition activity in the country in the first month of 2013 as deals worth nearly $15 billion

(about Rs. 91,000crores) were announced amid improved signs of liquidity.

According to the monthly deal report of VCEdge, a financial research provider, the mergers and acquisitions deal value during January 2013 stood at $2.8 billion, a whopping 126% rise over the same period last year.

In terms of deal count there was also an upward trend, as there were around 53 deals in the first month of the year, as compared to 32 deals witnessed during a year-ago period, the report added.

Domestic deals were in fervour during January 2013, as there were as many as 29 domestic deals worth $2,303 million as compared to 14 transactions worth $589 million in January 2009.

Meanwhile, the number of outbound deals more than doubled from 6 in January 2009 to 13 in January 2013. Besides, the average deals size also grew to $111.30 million in the first month of 2013 from $84.28 million, the report said.

A sector wise analysis shows that telecom, logistics and banking, finance and insurance were the most targeted sectors for investments with deals worth $2,180 million, $164 million and $117 million respectively.

The largest deal was GTL Infrastructure's acquisition of the telecom tower assets of Aircel Ltd for Rs. 400 crores through a Special Purpose Vehicle. The deal makes GTL Infra the world's largest independent telecom tower firm and will give the company an additional 17,500 telecom towers taking its total portfolio to 32,500.Besides, the GTL-Aircel deal, some of the other major mergers and acquisitions deals include — Telenor's third and penultimate round of investment of $326 million in Unitech Wireless Ltd for 11.1% stake and SHV Energy which acquired Chennai-based Caltex Gas India for $109 million from Chevron Corp.

The top 5 mergers and acquisitions deals accounted for more than 85% of the total mergers and acquisitions deal in January 2013. In January 2009, top 5 deals accounted for more than 98% of total value for the month.

Amongst BRIC Nations, India Second Most Targeted Country for Mergers & Acquisitions

After a subdued 2009, the mergers and acquisitions deals seem to be picking up steam in 2013. India had great 2007 and 2008 when it came to Mergers & Acquisitions, however, 2009 recession saw drastic fall in cross border mergers and acquisitions deals.

According to report published by Dealogic, India has emerged as the second most targeted nation among the BRIC region, after China. India has already mopped up mergers and acquisitions deals worth $2.8 billion so far this year alone.

While the India-targeted mergers and acquisitions deals so far in 2013 grew by 43 per cent from $1.98 billion in the year-ago period, China targeted volume rose 88 per cent to $8.3 billion.

So far in 2013, the BRIC targeted mergers and acquisitions volume has reached $12.7 billion, up 42 per cent compared with 2009 year-to-date (YTD). The BRIC mergers and acquisitions volume accounts for 10 per cent of global mergers and acquisitions volume in 2013 YTD. The top five BRIC deals in 2013 YTD involve Chinese and Indian targets and account for 47 per cent of the total BRIC volume.

2010 was the Year of Acquisitions for India

2010 has already started with a bang, with news of mergers and acquisitions deals coming out thick and fast. In just 45-days of 2010 India Inc has announced deals worth $14 billion, while in the whole of year 2009, India Inc. made deals worth a modest $11.9 billion. Even the Deallogic survey in January pointed that India is the second most targeted country when it came to cross border Mergers & Acquisitions. Mergers and acquisitions values gathered momentum and registered a sharp increase in March, primarily in the wake of Bharti Airtel's acquisition of Zain Africa. A total of 86 deals were registered during the month, surpassed the number struck in both 2009 (67) and 2008 (33).

The total value of deals touched $13.83 billion, which was higher than $2.57 billion and $4.83 billion registered in corresponding month of 2009 and 2008 respectively. The value of outbound deals was pegged

at $12.3 billion, significantly higher than the value registered in March 2008 and 2009.

Total value of domestic deals in March was $544 million (42 deals) as against $1.9 billion (12 deals) and $217 million (13 deals) clocked during corresponding period in 2009 and 2008 respectively.

Besides Bharti Airtel, the other top deals included Fortis Healthcare's acquisition of Parkway Holdings for $685 million, and Essar Minerals buying Trinity Coal Corporation at $600 million.

While private equity investments have grown over the same period during the previous year, investors are still taking a cautious investment approach as compared to 2008 and earlier.

There was also considerable activity in raising capital through public issues, with five initial public offerings listed during the month, raising $281 million.

We will see lot of mergers and acquisitions activity this year in the TMT (Technology, Media & Telecom) sector.

This situation will help Indian companies to go shopping abroad and find cheaper deals.

Mergers and Acquisitions Laws in India

Most of the mergers and acquisitions have been successful in elevating the functional competence of companies but on the flip side this activity can lead to formation of monopolistic power. The anti-competitive results are accomplished either by synchronized effects or by one-sided effects.

Many countries have propagated Mergers and Acquisitions Laws to control the operations of the trade units within.

Laws Governing Mergers and Acquisitions in India

Mergers and Acquisitions in India are governed by the Indian Companies Act, 1956, under Sections 391 to 394. Although mergers and acquisitions may be instigated through mutual agreements between the two firms, the procedure remains chiefly court driven. The approval of the High Court is highly desirable for the commencement of any such process and the proposal

for any merger or acquisition should be sanctioned by a 3/4th of the shareholders or creditors present at the General Board Meetings of the concerned firm.

Indian antagonism law permits the utmost time period of 210 days for the companies for going ahead with the process of merger or acquisition. The allotted time period is clearly different from the minimum obligatory stay period for claimants. According to the law, the obligatory time frame for claimants can either be 210 days commencing from the filing of the notice or acknowledgment of the Commission's order.

The entry limits for companies: The entry limits are allocated in context of asset worth or in context of the company's annual incomes. The entry limits in India are higher than the European Union and are twofold as compared to the United Kingdom.

The Indian mergers and acquisitions laws also permit the combination of any Indian firm with its international counterparts, providing the cross-border firm has its set up in India.

There have been recent modifications in the Competition Act, 2002. It has replaced the voluntary announcement system with a mandatory one. Out of 106 nations which have formulated competition laws, only 9 are acclaimed with a voluntary announcement system. Voluntary announcement systems are often correlated with business ambiguities and if the companies are identified for practicing monopoly after merging, the law strictly order them opt for de-merging of the business identity.

Reasons of Mergers Failure in India

Statistics show that roughly half of acquisitions are not successful. Mergers and acquisitions fail quite often and fail to create value or wealth for shareholders of the acquirers. Some of the important reasons for failures of mergers are:

1. Excessive Premium: In a competitive bidding situation, a company may tend to pay more. Highest bidder often overestimates value out of ignorance. When the acquirer fails to achieve the synergies required compensating the price, the mergers and acquisitions fails.

2. Size Issues: Many acquisitions fail either because of 'acquisition indigestion' through buying too big targets or failed to give the smaller acquisitions the time and attention it required.

3. Diversification: Unrelated diversification has been associated with lower financial performance, lower capital productivity and a higher degree of variance in performance for a variety of reasons including a lack of industry or geographic knowledge, a lack of focus as well as perceived inability to gain meaningful synergies. Unrelated acquisitions, which may appear to be very promising, may turn out to be big disappointment in reality.

4. Poor Cultural Fits: Cultural fit between an acquirer and a target is one of the most neglected areas of analysis prior to the closing of a deal. It is useful to know the target management behavior with respect to dimensions such as centralized versus decentralized decision making, speed in decision making, time horizon for decisions, level of team work, management of conflict, risk orientation, openness to change, etc.

5. Poor Organization Fit: Organizational fit is described as "the match between administrative practices, cultural practices and personnel characteristics of the target and acquirer". Mismatch of organization fit leads to failure of mergers.

6. Poor Strategic Fit: Many a time, lack of strategic fit between two merging companies especially lack of synergies results in merger failure.

7. Striving for Bigness: There is a strong tendency among managers whose compensation is significantly influenced by size to build big empires. Size maximizing firms may engage in activities, which have negative net present value.

8. Faulty Evaluation: At times acquirers do not carry out the detailed diligence of the target company. They make a wrong assessment of the benefits from the acquisition and land up paying a higher price.

9. Failure to Set the Pace for Integration: The important task in the merger is to integrate the target with acquiring company in every respect. All functions such as marketing, commercial; finance, production, design and personnel should be put in place. Delay in integration leads to delay in product shipment, development and slow down in the company's road map.

10. Incomplete and Inadequate Due Diligence: Lack of due diligence is lack of detailed analysis of all important features like finance, management, capability, physical assets as well as intangible assets results in failure.

11. Ego Clash: Ego clash between the top management and subsequently lack of coordination may lead to collapse of company after merger. Manufacturing plants can be integrated easily, human beings cannot. Merger of equals may also create ego clash.

12. Failure of Top Management to Follow-Up: After signing the mergers and acquisitions agreement the top management should not sit back and let things happen. First 100 days after the takeover determine the speed with which the process of tackling the problems can be achieved.

13. Lack of Proper Communication: Lack of proper communication after the announcement of mergers and acquisitions will create lot of uncertainties Failure to manage communication results in inaccurate perceptions, lost trust in management, morale and productivity problems, safety problems, poor customer service, and defection of key people and customers. It may lead to the loss of the support of key stakeholders at a time when that support is needed the most.

Conclusion

It is very tempting for a business leader to venture for merger or acquisition of other company. But is must be understood that it is a very complex task. Hence any such move must be planned & executed with great care.

Pitfalls of mergers and acquisitions challenge today's leaders to a new standard of managing change. The strategy is clear - accelerate, concentrate, adapt, and in the case of international mergers and acquisitions, consider cultural differences.

The Asian overall mergers and acquisitions market shows 3878 deals worth US $ 198.60 billion as on July 14, 2008. In the Asian market India is in the 3rd

place after China and Hong-Kong with 487 merger and acquisition deals worth $ 22.69 billion.

In conclusion we can say that the acquisition deals are good but we have to think about nation's prestige and the national economy. One size doesn't fit all. Many companies find that the best way to get ahead is to expand ownership boundaries through mergers and acquisitions. For others, separating the public ownership of a subsidiary or business segment offers more advantages. At least in theory, mergers create synergies and economies of scale, expanding operations and cutting costs. Investors can take comfort in the idea that a merger will deliver enhanced market power. By contrast, de-merged companies often enjoy improved operating performance thanks to redesigned management incentives. Additional capital can fund growth organically or through acquisition. Meanwhile, investors benefit from the improved information flow from de-merged companies.

Mergers and acquisitions come in all shapes and sizes, and investors need to consider the complex issues involved in Mergers and acquisitions. The most beneficial form of equity structure involves a complete analysis of the costs and benefits associated with the deals.

References

1. Banerjee Gargi (Oct, 2005), "How Much Value is Created by M&A Deals in India?" Business World, 40.

2. Ghosh P.K. (2006), "Strategic Planning and Management", Tenth Edition, Sultan Chand & Sons., Delhi, 248-250.

3. Machhi Hetal (Oct, 2005), "Merger and Acquisition," *The Management Accountant,* 767-770.

4. Pawaslar, Vardhana (2001), "Effects of Mergers on Corporate Performance in India," *Vikalpa,* 26(1), 19-32.

5. Weston Fred J., Chung & Hoag (2000), "Mergers, Restructuring and Corporate Control", Fifth Edition, Prentice-Hall of India Private Limited, New Delhi, 1-15.

6. Business India (2005), "Biggest Deal?" Business India, 162-163.

7. Maitra Dilip (1996), "Mega Money Mergers," Business Today, 82-93.

8. Rupali Mukherjee (2013), "M&As Gather Pace, Value Shoots up in March", TNN, The Times of India.

9. www.competition-commission-india.nic.in, accessed on 9th April 2013 on 9:45 pm.

10. www.companylawonline.com, accessed on 8th April 2013 on 7:55 pm.

11. www.economywatch.com, accessed on 20th March 2013 on 11:42 am.

12. http://ibef.org, accessed on 8th April 2013 on 7:47 pm.

13. www.indianmba.com, accessed on 8th April 2013 on 10:47 am.

14. http://www.livemint.com/2013/02/08163322/MampA-activity-in-India-more.html, accessed on 10th April, 2013, 2:53 pm.

15. http://trak.in/tags/business/2007/08/16/indian-mergers-acquisitions-changing-indian-business, accessed on 10th April 2013 on 12:35 pm.

16. www.wikipedia.org/wiki/mergers_and_acquisitions, accessed on 8th April 2013 on 10:47 am.