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Dear Reader,

On behalf of the Department of Management & Studies, Tirpude College of Social Work, the Editorial Board and the Editorial Team of APOTHEOSIS, I would like to wish all authors, patrons and readers of our journals a very happy and prosperous New Year. Hope in 2013, we publish more diverse, path-breaking researches and articles which discuss innovative management practices and methods.

Now, thanks to our online presence, APOTHEOSIS enjoys a pan India reach and a discernible subscriber and readership base. The integral idea for making our journal digital was to increase accessibility which in turn improves not only readership but also knowledge dissemination and citation. Moreover, we have received many original and insightful research papers. In this issue the topics of researches are varied – 'Merger of GTB with OBC – A Case Study', 'Emerging Strategic Role for HRM', 'Analysis of Customer Attitude towards E-Shopping with special reference to Allahabad', 'Jump Diffusion Process on Acquiring Company Share Prices – A Study on Offshore Acquisitions made by Indian IT Companies', etc.

The aim of this journal is to provide a platform for researchers, practitioners, academicians and professionals from diverse domains of management to share innovative research achievements and practical experiences to stimulate scholarly debate in the development of management science and decision making.

It will be our consistent effort to increase impact and the overall quality of our journal. In times to come, we want to attract more and higher- quality submissions. In the spirit of continuous improvement, constructive inputs and critical reviews are welcome.

Thanks & Regards,

Dr. Sanjay Kavishwar

CONTENTS

Jump Diffusion Process on Acquiring Company Share Prices – A Study On Offshore Acquisitions made by Indian IT Companies

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Abstract

This research explored the intensity of price jumps created by the micro level factors on the market price of the IT companies' share price during the announcement of the off-shore acquisition. Cross-border acquisitions made by seven Indian IT companies that are listed in NSE during the period between 2007 and 2010 were studied. The research measures the width of jump effects in terms of 'days' rather than intra-day volatility. The research revealed that the derivative market stake holders can establish a bullish trend on individual IT companies' securities at a premium of 20% (max) and IT stock index derivatives at a premium of 5% (max) for one month during the time of announcing the acquisition results by IT companies. The cross-border acquisition made by Indian IT companies resulted with a marginal increase of its share price in capital market in short term. The continuous acquisition announced by the Indian IT companies (e.g. TCS) established a long-term bullish trend rather than 'jump'. The off-shore acquisitions synergies of Indian IT companies not only increased the global customer spread but also created a bullish trend capital market.

Key Words: IT (Information Technology) companies, CNX IT index, NSE (National Stock Exchange of India)

Introduction

The process driven acquisition of Indian IT companies decreased the erosion of its assets and increased the global customer base. Major portion of the IT companies revenues were from its offshore subsidiaries. For example, 70% revenue of Mphasis is from its off-shore subsidiary company operations (Business Standard, 2011). NASSCOM estimates that the Indian IT and ITES companies' revenue would be $225 billion by 2020 (The Economic Times, 2011). Indian IT companies export grew up by 18% in the year 2010-11 (NASSCOM, 2011). United States of America's Federal agency estimates that

the US transaction outsourcing from India is growing at a CAGR of 3.5% (Decision Point Int, 2011). There is a competition among Indian IT companies to acquire offshore companies. The nonlinear growth initiatives taken by the IT companies also enable these companies to go for cross-border acquisitions. Acquisition is essential for IT firms to strengthen the supply-side of the global IT outsourcing marketplace and to have the strategic positioning among the IT suppliers (Wendy, 2000). Bjorvatn's research found that the corporate synergies created by the IT companies' mergers leads to increase in book value, increase in market returns

and decrease the systematic risk. The economic integration reduces the 'business stealing effect' in cross-border acquisition (Bjorvatn, 2004). Indian IT companies acquisition leverage the market capitalization by 40% and increase the market spread of the acquiring company within one year of acquisition. However, Vardhana's research (2001) on corporate performance affirmed that there are no significant differences in the financial characteristics of the two firms involved in merger (Pawaskar, 2001).

The merger and acquisitions also created positive impact in Asian Stock exchanges (Cheung, 2009). There is an anticipated short term effect on the stock price during acquisition. Short term jumps are seen in the share prices while a company announces the results of its acquisition deals. The jump diffusion process in the share prices in capital market arises out of the positive information symmetry created by the acquiring company. The stock price usually follows a jump-diffusion process which may exhibit time-varying volatilities (Duan, 2007). The investor prefers financial derivatives either in the individual stock derivatives or stock index options by limiting the time factor during the acquisition periods. The spin off effect created by these jumps during the acquisition periods decides about the strike price and future contract period. High-frequency data are crucial to disentangling frequent small jumps from infrequent large jumps. During the

trading sessions, jumps are frequent but small in magnitude. After the markets are closed, infrequent large jumps occur (Duan, 2007). The present research studies intensity of the jump effect occurred to the market price of the IT companies' share price during the announcement of the acquisition. The research measures the width of jump effects in terms of 'days' rather than intra-day volatility.

Literature Review

The positive information symmetry created by the firm causes a small jump in share price. It also creates variations in the index. Evidence for jumps is unique when a return is "large" relative to the standard deviation of all returns in that portfolio. A single pure-jump process can match some empirical features of high frequency index returns. Jump variation seems to be less than 8% of total variation for the S&P 500 and jumps were found on less than 20% of trading days for the S&P 500. (Huang, 2005), In cross-border mergers and acquisitions, maximum-likelihood estimation of a mixed jump-diffusion process reveals that exchange rates exhibit systematic discontinuities, even after allowing for conditional heteroskedasticity in the diffusion process (Jorion, 1988). Past researches found that the return to the bidding firm's stock was close to zero (Burner. R, 2003,Jensen, 1983) and there was an impact in share price (Oxera, 2006). The jump diffusion process created by the mergers and acquisition differentiate

between the impact of informed trading and unanticipated public announcements (Kiymaz, 2008). The market price of the acquiring firm is substantially influenced by the financial advisors of the merger in cross-border acquisitions (Jagtiani, 2003). According to Muller (2003), the long gestation period in acquisition creates bearish trend in the acquiring company's share price. Moshfique's research exposed that the acquiring firm's securities do not gain significant abnormal market returns in the short-run jumps (Moshfique Uddin, 2009). Rikard's research discovered that the success of acquisitions is gauged by the synergy realization rather than market return (Rikard Larsson, 1999). Successful merger and acquisition deals attract green-field investment (Calderón, 2004). The present research examines the intensity of price jumps created by the micro-level factors and enables the investors to predict the derivative prices using econometric model.

Objective

The aim of the research is to explore the capital market synergies created by the acquiring company at the time of announcing the results of the off-shore acquisition deals. Since the capital market synergies are reflected in the 'jump effects' in acquiring company market price, we studied the intensity of jumps in price as well as in the respective index. The facilitating objectives are as follows.

- To find out bullish trend created by the acquisition deals.

- To find out the push strategy created by individual securities on respective index at the time of acquisition deals.
- To identify a prediction model of the prices during the pre and post acquisition periods.

The research enables the stake holders in derivative sector to fix the future price band for individual security as well as stock index during the time acquisition deals. The measurement of jump effects is the key indicator for the corporate sectors to find out the capital market synergies created by the acquisition deals in the preliminary stage of the acquisition process.

Methodology

Off-shore acquisitions made by seven Indian IT companies that are listed in NSE during the period between 2007 and 2010 were studied. Ninety days share price movements prior and after the date of announcement of acquisition by the acquiring companies were collected. To measure the breadth and depth of 'jumps' CNX IT Index has been used. In the first stage, the null hypothesis that new information creates abnormal returns in the stock prices as against market efficiency theory was tested. In the next stage, the intensity of jump effects was measured

The jump effects are measured based on the deviation between the regressed market price at the particular time period and the actual market price of share on the date of announcement of information

about the acquisition details. To estimate the value of market prices, we used quantile regression model that includes 'Least Absolute Deviations Estimator'. To find out the conditional variables to estimate the market price, goodness fit of CNX IT Index among the acquiring company share price has been established based on the co-integration tests. In the third stage, vector auto regressive model was used to predict the prices after the jump effect. The goodness of fit in that model was justified by AIC criterion. Table-1 shows the methodology adopted in three different stages.

Table 1: Input-Process-Output Chart

Stage	Step	Purpose	Input	Process	Output
I. Trend before the spread of Acquisition information	1.1	To find out the non-stability of market prices	90 days' Market price of the scrip before acquisition	Unit root test	Prices are non stationary
	1.2	To find out the co-integration between price and CNX Nifty IT index	90 days Market price of the scrip and CNX Nifty IT index before acquisition	Johansen co-integration test	Co-integration before acquisition
	1.3	To find out the conditional variables for estimation.	Price and index before acquisition	VECM modeling	Price depends on IT index
II. Measuring the intensity of Jump effect	2.1	To estimate the normal price movements	90 days' Market price of the scrip and CNX Nifty IT index before acquisition	Quantile Regression model with LAD.	R^2 values are higher than 0.70
	2.2	To measure the depth of jump effect	Estimated and actual value of price	Difference between actual and estimated values	Average jump effect is 1.6 times
	2.3	To measure the breath of jump effects	Price during the days of volatility	Number of days covered under the	15 days

				jumps	
III Estimating the prices during and after the spread of acquisition information.	3.1	To predict the trend of prices after the acquisition and to enable to fix derivative price bands.	90 days' Market price of the scrip and CNX Nifty IT index before and after acquisition	Vector Auto-regressive model	Best fit based on R^2 and AIC

Characteristics of Sample Acquisitions

Glodyne Technoserve acquired US based DecisionOne Corporation for $104 million on August 2010. Glodyne predicted that the acquisition would improve its market share in the global technology of IMS marketplace. After acquisition, they concentrated on establishing workstation, data center, storage service and networking service. It increases the number of clients in North America (Business Standard, 2010).

HCL Tech acquired UK-based SAP consulting company Axon for £440 million (Rs 3100 crores) on December 2008. HCL Tech is more aggressive on the inorganic front and even beat Infosys in a race to acquire Axon. This acquisition enables HCL to expand its business in Europe and increase its share in SAP market (Business Standard, 2008).

Fortify was merged with Mphasis Ltd for $15 million on April 2010. The acquisition expanded the Mphasis access to the talent pool of highly experienced professionals, increased the customer base and technical service level agreements (Current IT Market, 2010).

Prithvi Information Solutions purchased US-based Percentix Inc involving a cash payment of $3 million on May 2010. Primary reasons for the deal were to improve their value chain and bring expertise services to code business intelligence software. This tactic retains existing customer base. It expected that the acquisition will add $6.25 million revenue for the year 2010-2011 (Business Line, 2010).

Rolta India Ltd, the Mumbai-based IT solution, acquired One GIS Inc. of Atlanta, USA in April 2010. The strategic acquisition enabled Rolta's ability to provide innovative solutions to the utility, telecommunications and improve their services in mobile field force automation (Rolta, 2010).

Tata Consultancy services acquired SuperValu Captive Unit and Unisys on September 2010 for $100 million and £250 million respectively. This enables TCS to retain its market share in Europe. The engagement with SuperValu reinforces their leadership as the long-

term IT partner best equipped to help global corporations transform their businesses using the full services capabilities and domain knowledge (Mindfields, 2010).

Wipro acquired US-based Infocrossing, a \$234-million infrastructure service provider for \$600 million on August 2007. By this acquisition, Wipro hopes to boost profit margins as it gets access to larger contracts and sends more work back to low-cost India. Wipro paid more attention to embedded technologies and infrastructure-related segments (One India, 2007).

Analysis

i. Unit Root Test

To find out the stationarity of share price movements before the announcement of acquisition, unit root rest was performed. Ninety days share prices of the seven companies (in the sample) before the date of announcement of acquisition were collected from NSE. The standard Augmented Dickey-Fuller (ADF) test and Phillips-Perron (PP) tests were performed to assess the degree of integration of the prices. Augmented Dickey Fuller coefficient (Dickey, 1979) critical values were used for the unit root test. Lags lengths for the ADF unit root test are selected according to Akaike and Schwarz criteria. The bandwidths for the PP test are determined by the Newy-West criteria. The null hypothesis that '$\rho = 0$' is tested by ADF test. To test the unit root under PP regression test, null hypothesis that '$\alpha = 1$' was established. . Table-2 presents the ADF and PP test results.

Table 2: Stationarity test

Sr. No	Scrip	ADF - 't' Statistic		PP - 't' Statistic		Joint Confirmation of Unit Root at 5% level
		Lag Length	Test Value	Bandwidth	Test Value	
1	Glodyne Technoserve Ltd	1	-1.49	26	-1.323	Yes
2	HCL Ltd	1	-1.77	2	-1.85	Yes
3	Mphasis Ltd	0	-0.6	8	-5.1	Yes
4	Prithvi Info Solutions Ltd	0	-1.54	5	-1.55	Yes
5	Rolta India Ltd	0	-0.76	9	-0.493	Yes
6	Tata Consultancy Services Ltd	0	-2.039	2	-1.984	Yes
7	Wipro Ltd	1	-1.146	8	-1.187	Yes

The critical value of ADF and PP tests, at 5% level of significance is -2.86. All the variables used in the empirical analysis have a statistic that exceeds the critical value of the test at the 5% significance level. Both ADF and PP test

signifies that the log price series and contain a single unit root at 5% level of significance, implying fact that the log price series of the sample scrips are non-stationary before the declaration of acquisition information to stake holders.

ii. Co-integration Test

To estimate the market prices, we have to identify a conditional variable. The CNX IT Index is constructed based on the price volatility on the IT companies' share price movements. Hence, we set a null hypothesis that the CNX IT Index does not influence the IT companies' share prices before the date of announcement of acquisition. The hypothesis has been tested with the co-integration between the share price movements of the seven companies (in the sample) and the CNX IT Index on the respective dates. Ninety days share prices of the seven companies (in the sample) before and after the date of announcement of acquisition and CNX IT Index on the corresponding dates were collected from NSE.

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Johansen co-integration enables to estimate and test the equilibrium relationship among non-stationary series while abstracting from short-term deviations from equilibrium. Since all of the mentioned variables were of the same order of integration it was necessary to test for co-integration in the system before fixing regression equation. Under this test, regression is performed to generate residuals which may be thought of as equilibrium pricing errors. It enables to estimate and test the equilibrium relationship among non-stationary series while abstracting from short-term deviations from equilibrium. The critical values are reported in the table-3

Table 3 : Co-integration Test

Sr.No	Scrip	Period	Trace Statistic	Max-Eigen Statistic	Results
1	Glodyne Technoserve Ltd	Before Acquisition	27.74	23.42	Cointegration
		After Acquisition	14.16	12.33	No Cointegration
	HCL Ltd	Before Acquisition	25.19	23.83	Cointegration

2		After Acquisition	8.6	7.96	No Cointegration
3	Mphasis Ltd	Before Acquisition	24.33	21.35	Cointegration
		After Acquisition	9.39	6.52	No Cointegration
4	Prithvi Info Solutions Ltd	Before Acquisition	25.82	24.49	Cointegration
		After Acquisition	12.67	9.52	No Cointegration
5	Rolta India Ltd	Before Acquisition	28.15	26.53	Cointegration
		After Acquisition	9.72	8.49	No Cointegration
6	Tata Consultancy Services Ltd	Before Acquisition	28.79	27.76	Cointegration
		After Acquisition	5.93	5.93	No Cointegration
7	Wipro Ltd	Before Acquisition	20.56	20.22	Cointegration
		After Acquisition	5.48	3.19	No Cointegration

The critical value of trace statistic at 5% level of significance is 18.39. The critical value for Max-Eigen test is 17.14. There is co-integration between the prices prevailing in NSE and the CNX IT Index for all the scrips before announcement of acquisition. The null hypothesis that there is no co-integration between share price movements and CNX IT Index before the date of announcement of acquisition has been rejected. There is a strong relationship between share price movements and CNX IT Index. However, the null hypothesis has been accepted in the second case i.e., there is no co-integration between share price movements and CNX IT Index after the announcement of acquisition. Hence it may be concluded that regressive equation will stand good for estimating the market prices with the help of CNX IT Index before the announcement of acquisition.

iii. Price dependencies

To find out the possibility of estimating the prices with CNX IT Index, we identify the bi-directional estimating factors. We investigates the daily price discovery process by exploring the stochasting trend between Share price and CNX IT Index with the help of threshold vector error correction

model (TVECM). The collinearity variation between these markets is studied. A vector error correction model (VECM) can be used for forecasting in an unconstrained model and used for non-stationarity of different component series. If share price and CNX IT Index are co-integrated, then causality must exist in at least one direction. Threshold vector error correction model (TVECM) is used to identify the bidirectional causality.

$$\Delta Y_t = a_y z_{t-1} + \sum_{t=i}^{p} b_{yi}\,\Delta Y_{t-i} + \sum_{t=1}^{p} c_{yi}\,\Delta X_{t-i} + \varepsilon_{y,t}$$

… (1)

$$\Delta X_t = a_x z_{t-1} + \sum_{t=i}^{p} b_{xi}\,\Delta Y_{t-i} + \sum_{t=1}^{p} c_{xi}\,\Delta X_{t-i} + \varepsilon_{x,t}$$

…(2)

Where as ΔX_t, is the output series from market price and ΔY_t, is the output series from CNX IT Index. b_{yi} , c_{yi}, b_{xi} and c_{xi} represents the short-run coefficients. $\varepsilon_{y,t}$ and $\varepsilon_{x,t}$ are residuals. The speed of adjustment in long-run equilibrium due to market information is determined by the coefficients a_x and a_y. When these coefficients are high, adjustment is rapid. Table-4 displays the estimates of the adjustments coefficients obtained by TVECM using equation (1) and (2) and 'F' statistic value.

Table 4: TVECM Values

Sl.No	Scrip	Dependent: Market Prices		Dependent: NSE IT Index	
		VMC Co-efficient	F' Statistic Values	VMC Co-efficient	F' Statistic Values
1	Glodyne Technoserve Ltd	0.98	9.49	0.93	3.09
2	HCL Ltd	0.92	25.28	0.88	4.34
3	Mphasis Ltd	0.91	23.04	0.87	2.84
4	Prithvi Info Solutions Ltd	0.94	18.34	0.91	2.29
5	Rolta India Ltd	0.88	16.808	0.86	5.95
6	Tata Consultancy Services Ltd	0.97	19.34	0.92	7.82
7	Wipro Ltd	0.98	9.49	0.93	3.09

The error correction is significant in both equations, suggesting a bidirectional error correction. However, the error correction in the CNX IT Index equation (Dependent – Market price) is greater in absolute term than that of the market price equation. This indicates that if the co-integrated series is in disequilibrium in the short run, it is the index that makes greater adjustment in order to reestablish the equilibrium. Hence, it may be conclude that the index leads the market price discovery. The estimated values are tested with the 'F' statistic. The F-statistics is also significant. Hence there was a significant causality from index to market prices and a significant causality from market price to index.

Even though there is bidirectional causality, CNX IT Index is better predictors of the market prices of the securities. Hence it may be concluded that regressive equation will stand strong for estimating the market prices with the help of CNX IT Index before the announcement of the acquisition.

iv. Price Estimation Parameter

After establishing a strong price discovery mechanism through co-integration tests and VECM modeling, we estimate the market prices by 'quantile' regression model by incorporating 'Least Absolute Deviations estimator'. The results of the above stages show that the CNX IT Index leads to price discovery before the data of announcement of the acquisition. Hence, for the quantile regression model, CNX IT Index has been considered as conditional variable. The quantile regression method enables to find out the covariance influence the micro economic factors (Roger Koenker, 2001). Quantile regression provides estimates of the linear relationship between regressor variable 'x' (index) and a specified quantile of the dependent variable 'y' (market price). In quantile regression method, the 'Least Absolute Deviations (LAD) estimator' is used to fit the conditional median of the response variable.

Quantile regression permits a more complete description of the conditional distribution than conditional mean analysis alone, allowing us, for example, to describe how the median or perhaps the 10th or 95th percentile of the response variable are affected by regressor variables. Quantile regression applied to the tails or simply external quantile regression is of interest in numerous economic and financial applications. It can be employed to measure conditional value-at-risk, production-efficiency, adjustment bands in the (S,s) models and cost functions of most efficient bidders in auctions(Victor).

Under Quantile model Y is the market price of shares in $\mathbb{R}$, . W is a vector of the conditioning variables i.e. CNX IT Index. The conditional distribution of Y is given as $W = w, F_Y(\cdot|w)$. The τ-th conditional quantile function $F_Y^{-1}(\tau|w)$ is the inverse of $F_Y(\cdot|w)$ evaluated at probability index τ. Flexible functional form for the external conditional quantile function of Y is given with W:

$$F_Y^{-1}(\tau|X) := X'\beta(\tau), \quad (\forall \tau \in \mathcal{I} = (0, \eta), \exists \eta > 0),$$

Where $X = B(W)$ is a $d \times 1$ vector of approximating functions that may include power functions, splines, and other transformations of original variables W. Hedricks and Koenker (1992) and Newey (1997), described that the use of flexible functional forms can provide approximations of unknown economic events.

Given T observations $\{Y_t, X_t, t = 1, ..., T\}$, the quantile regression (QR) solves:

$$\hat{\beta}(\tau) \in \arg\min_{\beta \in \mathbb{R}^d} \sum_{t=1}^{T} \rho_\tau \left(Y_t - X_t'\beta\right),$$

Where

$$\rho_\tau(u) = (\tau - 1(u < 0))u.$$ The median $\tau = 1/2$ case of above equation was introduced by Laplace and the general quantile formulation by Koenker and Bassett (1978).

Viewing the sample regression quantiles as order statistics in the regression setting, we will refer to τT as the order or rank of (QR). The sequence of quantile index-sample size

pairs (τ_T, T) will be said to be an extreme order sequence, if $\tau_T \searrow 0$ and $\tau_T T \to k > 0,$ an intermediate order sequence, if $\tau_T \searrow 0$ and $\tau_T T \to \infty,$ and a central order sequence, if τ is fixed and $T \to \infty.$. Inferences are based on extreme-order sequences that provide non-normal approximations to the distribution of (QR) statistics. The normal price trend for the seven companies' scrips has been estimated based on the QR statistics. The results of the QR estimation parameters are mentioned in Table-5.

Table 5: QR statistics

Sl.No	Scrips	QR Co-efficient	R^2
1	Glodyne Technoserve Ltd	1.42	0.882
2	HCL Ltd	1.02	0.855
3	Mphasis Ltd	1.34	0.869
4	Prithvi Info Solutions Ltd	1.10	0.871
5	Rolta India Ltd	1.21	0.882
6	Tata Consultancy Services Ltd	1.13	0.892
7	Wipro Ltd	1.26	0.855

The R^2 values are greater than 0.70. Hence the forecast can be made based on the Quantile Regression method.

v. Intensity of Market Jumps

The jump effects are measured based on the following equation:

$$Mj = (Ap-Ep)/Ep$$

Where as , Mj is the market jumps of the scrips due to acqusition, Ap is the actual price of the scrips immediately after the announcement of acquisition and Ep is the estimated price based on QR statistics for the same period.

For the purpose of estimation, 30 working day's price and corresponding IT index prior to the date of acquisition (information) were considered. The width of the jump has been measured based on number of days between the date of increasing trend and

the date of stabilization. The spin-off days are the number of days between the date of actual jump at peak stage and

date of downfall after the jumps. Table -6 shows the intensity of the jump effects due to acquisition.

Table 6: Jump effects in Prices

Company Name	Estimated Price (QR estimation)	Actual Price	Jump Effect (in times)	Width of Jump (in days)	Spin Jump (in days)
Glodyne Technoserve Ltd	502.79	756	1.5	29	51
HCL Ltd	110.59	130.55	1.18	14	25
Mphasis Ltd	636.8	683.3	1.07	18	28
Prithvi Info Solutions Ltd	61.19	72.15	1.17	14	46
Rolta India Ltd	182	197.55	1.08	3	11
Tata Consultancy Services Ltd	895.35	961.6	1.07	9	31
Wipro Ltd	456.7	482.35	1.05	9	15

The highest jump of 1.5 times or 50% occurred for the Glodyne Technoserve Ltd's share price. The width of jumps and spin over effects are higher in case of Glodyne scrips. The acquisition was financed by both cash reserves and debt. The capital base has been also increased by issuing equity shares under private

equity funds. It may be one of the reasons for high 'jump' in share price.

The jumps effects caused by the Indian IT company's acquisitions created short jumps and it ranges from 3 to 29 days. However the spin of effect due to jumps last from 11 to 51 days in NSE. The effects of market price jumps in CNX IT index are depicted in table-7.

Table 7: Jump effects in index

Scrips	Estimated Index (based on LOS) on the corresponding date of acquisition period	Actual Index on the corresponding date of acquisition period	'Jump' in Index (in times)
Glodyne Technoserve Ltd	4845.35	5237.6	1.08
HCL Ltd	2714.4	3112.8	1.14
Mphasis Ltd	5245.9	5124.9	0.97
Prithvi Info Solutions Ltd	4858.6	5101.5	1.04
Rolta India Ltd	5249.1	5322.95	1.01
Tata Consultancy Services Ltd	5486.15	6143.4	1.11
Wipro Ltd	4403.2	4464	1.01

The contagion effect of acquisition is having impact on the CNX IT Index also. The index has been pushed up to 14% (maximum) because of the acquisition. During the year 2010, acquisition effect pushed the CNX IT index up to 11%.

vi. Forecasting the Jump Prices

To fix strike price (Derivative), the rational investors are forecasting the life of 'jumps' aroused due to acquisitions. There is no co-integration between CNX IT Index and market prices after the announcement of acquisition details. Hence the price discovery system based on the quantile regression method is ineffective. Therefore, Vector auto-regressive model is used for predicting the market price of the shares immediately after the jumps. James provided a new macro econometric frame work that held great promise: vector auto-regressions (VARs) (James H. Stock, 2001). A univariate auto-

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regression is a single-variable linear equation model in which the current value of a variable is explained by its own lagged values. A VAR is an n-variable linear, n-equation model in which each variable is in turn explained by its own lagged values, and current and past values of the remaining n_1 variables. This simple framework imparts a systematic way to capture the dynamics in multiple time series. This simple framework provides a systematic way to capture rich dynamics in multiple time series, and the statistical toolkit that came with VARs was easy to use and interpret. As Sims (1980) and others argued that the VAR provide a coherent and credible approach for forecasting during the short-term fluctuations. The goodness of fit of VAR is measured by R^2 and AIC. Table-8 shows the R^2 and AIC values of the regression equation established based on the vector auto-regressive modeling

.Table 8: Goodness of fit

Scrip	R^2	AIC
Glodyne Technoserve Ltd	0.87	6.89
HCL Ltd	0.87	7.72
Mphasis Ltd	0.62	8.64
Prithvi Info Solutions Ltd	0.73	4.67
Rolta India Ltd	0.72	5.55
Tata Consultancy Services Ltd	0.81	7.96
Wipro Ltd	0.71	4.67

The AIC values are less than 10, implies the fact that there is a goodness of fit. The R2 values are also higher than 0.71.

Hence it can be inferred that the vector auto-regressive model can be best fit for estimating the jump period's price.

Empirical Findings

The cross-border acquisition made by Indian IT companies resulted with a marginal increase of its share price in capital market in the short term. The jump effect varies from 5% to 50%. However on the average level, the acquisition results announced by the IT companies establish a 16% jump in their share prices. It was approximately 1.2 times of the prices prevailing before the announcement of the acquisition. The acquisition strategy result in a short jump in the prices that spread over for 13 days (on an average), and it spin for 29 days (on an average) in NSE. The jumps created by the acquisition established a bullish trend on CNX IT Index by 5%. (on an average). Since there is no co-integration between the share prices and IT index after the announcement of acquisition results, vector auto-regressive model can be used for predicting the short-term jumps. Based on the empirical findings, we concluded that the derivative market stake holders can establish a bullish trend on individual IT companies' securities at a premium of 20% (max) and CNX IT Index derivatives at a premium of 5% (max) for one month during the time of announcing the acquisition results by IT companies.

Conclusion

The synergies created due to the cross-border acquisition are not only an internal constraint but also an external constraint. The small jumps in share price created due to acquisition have an impact in short-term financial derivatives. During the acquisition period (jump time), information symmetry created by the acquiring firm decides the intensity of jumps. The stake-holders acceptance level of the future synergies created by the acquisitions will be reflected in depth and width of the jumps. The continuous acquisition announced by the Indian IT companies (e.g. TCS) established a long-term bullish trend rather than 'jump'. The off-shore acquisitions synergies of Indian IT companies not only increased the global customer spread but also created a bullish trend capital market. This in-turn enables them to procure funds for their expansion and temporarily withhold the risks in capital infusion. Hence, the measurement of jump effect on the share price movement is considered to be the best indicator of acquisition results in the early stages of post corporate re-structuring.

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Individual Investment Behaviour and its Dynamics of Retail Investors in Semi Urban Areas in Tamil Nadu – An Empirical Study

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Background to the Study:

Indian investor today have to endure a sluggish economy, the steep market declines prompted by deteriorating revenues, alarming reports of scandals ranging from illegal corporate accounting practices like that of Satyam to insider trading to make investment decisions. Stock market performance is not simply the result of intelligible characteristics but also due to the emotions that are still baffling to the analysts. Despite loads of information bombarding from all directions, it is not the cold calculations of financial wizards, or company's performance or widely accepted criterion of stock performance but the investor's irrational emotions like overconfidence, fear, risk aversion, etc., seem to decisively drive and dictate the fortunes of the market.

Dimensions of Investor Behaviour

The most fundamental change in investor behaviour in recent times is increased investor activism. However, there is a problem in defining investor activism. Merely taking the time to understand what's going on in the company and vote is a form of activism, as is any kind of proactive approach to company mismanagement. But much of the action is done behind closed doors. We define investor activism as the use of power by an investor either to influence the management processes of a given portfolio company or to evoke large-scale change in management processes across multiple companies through the symbolic targeting of one or more portfolio companies. All such actions can be described as the engagement process. Through these engagement processes activist investors attempt to affect the strategic direction and performance of portfolio companies.

Basic Review of Literature on Investor Behaviour:

Literature suggests that major research in the area of investors' behavior has been done by behavioral scientists such as Weber (1999), Shiller (2000) and Shefrin (2000). Shiller (2000) strongly advocated that stock market is governed by market information which directly affects behavior of the investors. Several studies have brought out the relationship between demographics such as gender, age and risk tolerance level of individuals. Of this, the relationship between age and risk tolerance level has attracted much attention.

Horvath and Zuckerman (1993) suggested that one's biological, demographic and

socioeconomic characteristics; together with his/her psychological makeup affects one's risk tolerance level. Malkiel (1996) suggested that an individual's risk tolerance is related to his/her household situation, lifecycle stage and subjective factors. Mittra (1995) discussed factors that were related to individuals risk tolerance, which included years until retirement, knowledge sophistication, income and net worth: Guiso, Jappelli and Terlizzese (1996), Bajtelsmit and VenDerhei (1997), Powell and Ansic (1997), Jianakoplos and Bernasek (1998), Hariharan, Chapman and Domain (2000), Hartog, Ferrer-I-Carbonell and Jonker (2002) concluded that males are more risk tolerant than females. Wallach and Kogan (1961) were perhaps the first to study the relationship between risk tolerance and age. Cohn, Lewellen et.al found risky asset action of the portfolio to be positively correlated with income and age and negatively correlated with marital status. Morin and Suarez found evidence of increasing risk aversion with age although the households appear to become less risk averse as their wealth increases.

Research Methodology:

The present study is descriptive in nature. **The study is titled as "Investment Behaviour of Investors in Cuddalore District, Tamilnadu"**. The primary objective of the study is to find out and analyze the investment patterns and the factors influencing investment decisions and the preferred investments and the motives behind in the selection of selected

investment avenues and to the investors' exposure to the modern investment avenues in the sample area. The study is centered in collecting and compiling the individual characteristics impact on the investment behaviour and patterns in the sample area. The study covers the entire district of Cuddalore includes the investors from primary sector, employees, businessmen, service sector. The parameters used to measure the investment behaviour are the level of awareness, investment preferences; factors influencing investment behaviour, investment climate, issues in selection of a particular investment avenue, motivating factors in the selection of investment avenue, market influence on the investment selection and Demographical parameters influence is also studied to understand the role of demographics in investment patterns and behaviour.

Objectives of the Study:

a.   To assess the factors influencing investment behavior of the investors in the sample area.

b.   To explore the relationship between the investment climate, motivating factors and investment behavior among the investors in the sample area.

SAMPLING DESIGN

The study is mainly based on primary data which was collected from the 394 investors selected from in through convenient sampling technique.   The sample

respondents were selected from the urban, semi urban and rural areas in Cuddalore district. In order to improve validity of the questionnaire, the equal sample representation is taken from the sample area covering all the directions of the district. On the other side, it is also ensured that the sample represents all the potential investment age groups, income levels, occupations, and risk tolerance levels of the investors. The sample size is fixed by considering the appropriate population size, investment potential of the respondents. The sample respondents are having at least one investment at the time of responding the questionnaire. This is taken into consideration to test the level of awareness on investment avenues and to weigh the degree of awareness on modern investment avenues. Conventional investments are common in nature, but the changing times made the investor's preference towards modern investment avenues due to flexibility, lesser tenure of maturity and attractive growth rate of returns. The sample area profile is presented below for the better understanding of the geographical and demographical nature of the Cuddalore district. This can help in drawing the logical understanding of the investor's level of awareness, investment behavior, factors influencing investment behavior, motivating factors for investments, investment climate and investment environment improvement in the sample area.

Pilot Study and Reliability Test
Initially a pilot study was conducted with 100 investors (50 from urban and 50 from semi-urban and rural area). The relevance of some questions was slightly modified for final version of questionnaire. The reliability coefficient of the questionnaire is computed using Corn Bach's Alpha and the value is 0.87, which shows that the instrument is reliable.

Limitations of the Study

The present study is conducted only in the state of Tamilnadu covering Cuddalore district, and the second line towns and townships in the district. The sample size is restricted to only 394. Approaching investment environment and avenues awareness connectivity, time and cost for the selected sample is yet another limitation.

DESCRIPTIVE ANALYSIS:

Percentage analysis is one of the statistical measures used to describe the characteristics of the sample or population in totality. Percentage analysis involves computing measures of variables selected of the study and its finding will give easy interpretation for the reader.

TABLE 4.2.1 FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF AGE GROUP

Age group	N	%
Below 30	112	28.4
31-40	168	42.6
41-50	87	22.1
Above 50	27	6.9
Total	394	100

Source: Primary data/Questionnaire.

CHART 4.2.1: SHOWING THE DISTRIBUTION OF SAMPLE ON THE BASIS OF AGE GROUP
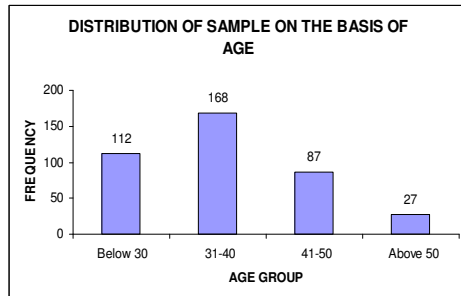
Age plays a major role in determining many aspects in an individual's life. The present study on investment patterns of the individual investors in the Cuddalore district, in the state of Tamil Nadu, reveals the age pattern of the sample as a potential group. The study reveals that 42.6 percent of the sample is belongs to 31-40 years age group and another 22.1 percent are belongs to 41-50 years age group. It accounts nearly one third of the sample is high level of income earning age and potential savings group. This indicates the savings potential and investment capacity of the sample area. It is always noted in many studies, the earnings potential and savings potential goes together with direct relationship. This has been observed in the present study along with the empirical evidences.

TABLE 4.2.2: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF GENDER

Gender	N	%
Male	315	79.9
Female	79	20.1
Total	394	100.0

Source: Primary data/Questionnaire.

CHART 4.2.2: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF GENDER
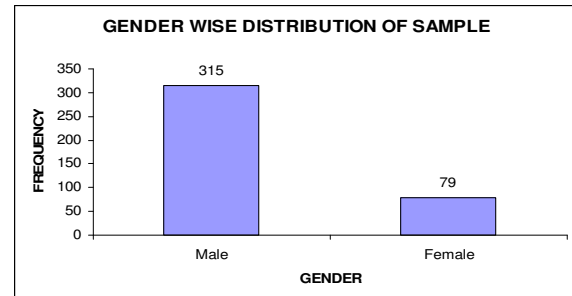
It is noted from the table 4.2.2 that, the sample consists 79.9 percent of male and the remaining 20.1 percent are female. The investment patterns of the men is different from the women in general, but the quantity of investment and the investment decisions and other related aspects of investment like awareness on investment avenues, information on availability and accessibility may be well known to men. This is due to exposure of men in public is better when compared to women. Women play many roles and responsibilities at home, and her exposure to general public and investment avenues and operating mechanism may be little less when compared to men. This has no way connected with the level of investments. In general investment decisions are taken in consultation with the family and majority of times the women decisions are dominated. In addition, the observation on investment preferences is that women prefer to invest in liquid, marketable and movable assets whereas men favour fixed and long term investment avenues having both short run and long run capital gains.

TABLE 4.2.3: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF EDUCATIONAL QUALIFICATION

Educational qualification	N	%
Matriculation	68	17.3
Graduate	153	38.8
Post graduate	130	33.0
Profession	43	10.9
Total	394	100.0

Source: Primary data/Questionnaire.

CHART 4.2.3: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF EDUCATIONAL QUALIFICATION
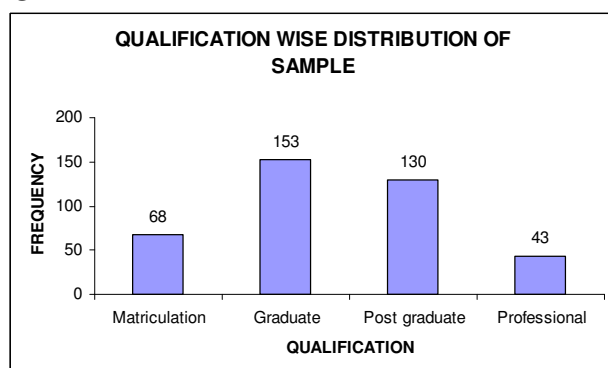
It is found from the table 4.2.3 that the sample consists of 38.8 percent graduates, 33 percent post graduates, 10.9 percent professionals and 17.3 percent matriculation category. It indicates that cent percent of the sample is educated and is favoured towards investments in the sample area. It indirectly indicates the literacy rate of the Cuddalore district and the investment awareness and investment patterns of the sample respondents and that the potential is high.

TABLE 4.2.4: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF OCCUPATION

Occupation	N	%
Service	94	23.9
Cultivation	54	13.7
Self-employed	161	40.9
Government	85	21.6
Total	394	100.0

Source: Primary data/Questionnaire.

CHART 4.2.4: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF OCCUPATION
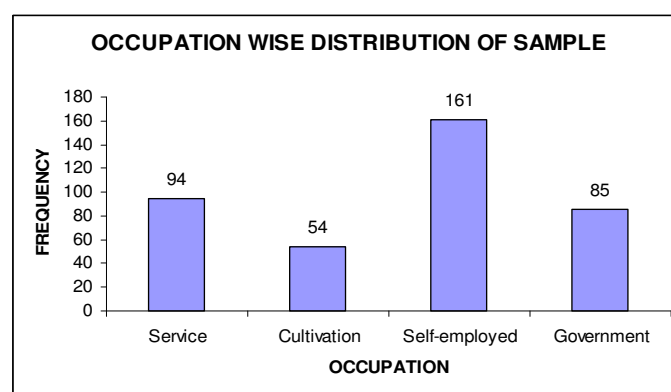
It is observed from the table 4.2.4 that 40.9 percent of the sample respondents are self employed, 21.6 percent are in government service, 23.6 percent in service industry and only 13.7 percent of the sample respondents are in cultivation. This indicated the regular flow of funds in the form of salary, business income and service charges to majority of the individuals in the sample area. It indicates the high level of savings potential. Individuals depending on the cultivation may not be having regular income, but the percentage is small and negligible.

TABLE 4.2.5: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF MONTHLY INCOME

Monthly Income in Rs.	N	%
Up to Rs.10,000	156	39.6
Rs.10,000-20,000	144	36.5
Rs.20,001-30,000	59	15.0
Above Rs.30,000	35	8.9
Total	394	100.0

Source: Primary data/Questionnaire.

CHART 4.2.5: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF MONTHLY INCOME
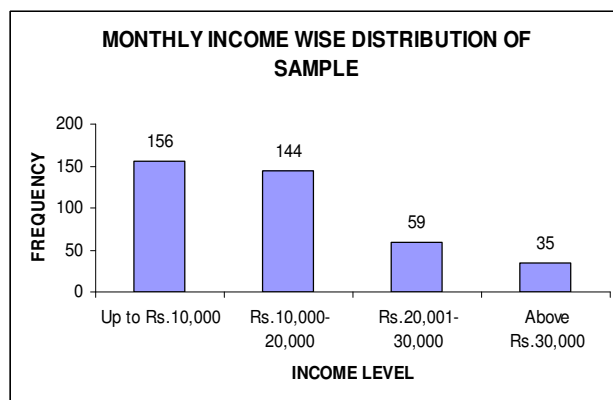


It is observed from that table 4.2.5, that 39.6 percent of the respondents are coming under the income level of Rs.10000 and less group among the sample. Another 36.5 percent comes under the income level of Rs.10000-Rs.20000 group. It indicates that 3/4th of the sample is coming under lower and upper lower income earnings group in the sample area. It also represents the savings potential and investment behaviour of the sample. At the higher end 8.9 percent of the sample represents the high income level with the range of above Rs.30000 income per month. In general, the level of income shows a positive relationship with the level of savings.

However in the recent past, due to increased level of awareness on the future contingencies and the precautionary motive among the individuals make the above said hypothesis null. It is observed that, savings potential, savings pattern and the level of savings is uniform among the individuals belongs to different level of income groups. It is inferred that the level of income is not a factor determining the level of savings, it is the individual's plan for future and the level of awareness on future contingencies influences the level of savings. It holds well in the sample area.

TABLE 4.2.6: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF MARITAL STATUS

Marital status	N	%
Married	292	74.1
Unmarried	102	25.9
Total	394	100.0

Source: Primary data/Questionnaire.

CHART 4.2.6: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF MARITAL STATUS
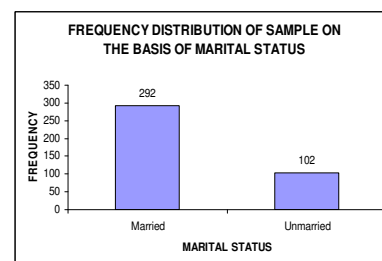
It is noted from the table 4.2.6 that the 74.1 percent of the sample respondents are married and the remaining 25.9 percent are unmarried among the sample respondents. The marital status is a social status for recognition in the society and also brings revolutionary changes in the life style and

spending and investment patterns of an individual. The need for money and the value of savings can be better understood by being a responsible house hold than the bachelor. In addition, the planning for future contingencies is an idea conceived in a family. In addition the income from the spouse and the ideas and information related to investments and investment avenues pave better prospects to plan better on both savings and investments. Hence, it is inferred that marital status influences the investment behaviour of an individual.

TABLE 4.2.7: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF INVESTMENT OBJECTIVES

Investment objective	N	%
Regular income	207	52.5
Capital appreciation	55	14.0
Income & Growth	77	19.5
Tax planning	22	5.6
Commercial Value	14	3.6
Personal image	19	4.8
Total	394	100.0

Source: Primary data/Questionnaire.

CHART 4.2.7: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF INVESTMENT OBJECTIVES
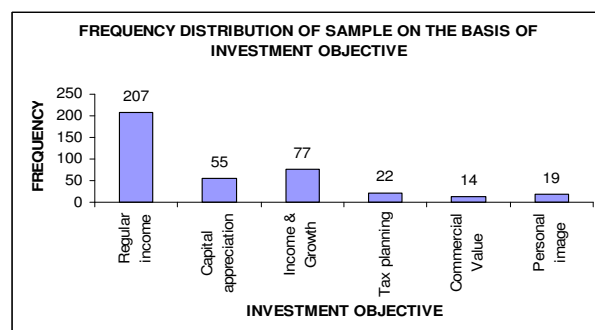

It is observed from table 4.2.9 that the primary objective of the investments elected by the investors in the sample area is regular income with 52.5 percent score, income and growth with 19.5 percent and capital appreciation with score of 14 percent among the survey. A notable feature here is the percentage of investors saving and investing with the objective to save taxes is only 5.6 percent among the sample. A meager percentage of the sample represented that savings and investments are made with the objective of commercial value and personal image. It indicates that regular income and capital growth is expected out of the investments. Such investment avenues potential will be high when compared to others among the sample.

TABLE 4.2.8: FACTORS OF INVESTMENT DECISIONS

Factors	N	%
Safety	196	49.7
Returns	107	27.2
Tax benefits	43	10.9
Capital appreciation	24	6.1
Liquidity	12	3.0
Free from fraud	8	2.0
Registration	2	.5
Secrecy	2	.5
Total	394	100.0

Source: Primary data/Questionnaire.

CHART 4.2.8: FREQUENCY DISTRIBUTION OF SAMPLE ON THE BASIS OF FACTORS CONSIDERED WHILE MAKING INVESTMENT DECISIONS

FACTORS CONSIDERED WHILE MAKING INVESTMENT DECISIONS
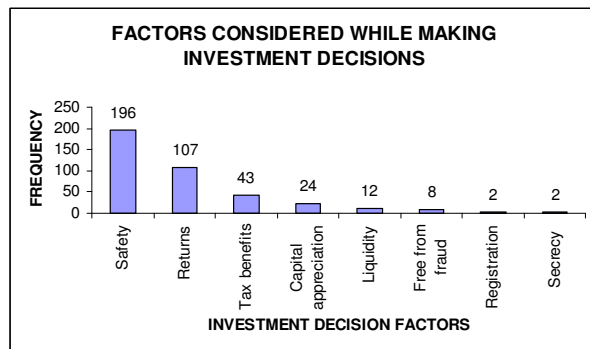
It is found from the table 4.2.19, that the factors considered while taking the investment decision are in the order of priority represented by the sample is safety with 49.7 percent, returns with 27.2 percent, tax benefits with 10.9 percent, capital appreciation with 6.1 percent, liquidity with 3 percent, free from fraud with 2 percent and registration and secrecy with 0.5 percent each among the sample respondents. This clearly conveys a message that the safety for the investment and returns on it are the prime decision factors in any one of the investments. It is clearly observed in the selection of investment avenues by the sample respondents as bank deposits.

Data Analysis Using Friedman Test:
Hypothesis-I:
Ho: There is no significant difference between the mean ranks and the levels of awareness on the investment avenues among the sample respondents.

Types of investments	Mean Rank	Chi-square	p-value
Bank deposits	**11.96**		
Chit funds	**9.47**		
Private finance	**8.24**		
Real estates	**8.68**		
Commercial halls	7.57		
Retail business	7.97		
Commission business	7.83		
Mutual funds	7.30	727.18	0.000**
Equity investments	7.57		
Debt investments	7.15		
Insurance	**9.07**		
Bullion market	7.01		
Derivatives market	6.32		
Online trading	7.17		
Commodities	6.69		

Note: ** indicates the rejection of hypothesis at 1% level of significance.

Since P value is less than 0.001, the null hypothesis, There is no significant difference between the mean ranks between the levels of awareness on the investment avenues among the sample respondents is rejected at 1% level of significance. Hence it is concluded that there is a significant difference between the mean ranks of the level of awareness on the investment avenues among the sample respondents. Based on the mean value high level of awareness is observed for the investment avenues like bank deposits with mean of 11.96, chit funds with mean of 9.47, private finance with mean of 8.24, real estates with mean of 8.68 and insurance with mean of 9.07 among the sample respondents.

An average level of awareness is observed on investments like commercial halls, retail business, commission business, mutual funds, equity investments, debt investments,

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bullion market, derivatives market, online trading and commodities market investments among the sample. The mean score range of these investments is observed at 7.97 to 6.32. This clearly indicates the potential for conventional and safe and well known investments in the sample area. Time has come to go for modern investments and to gain optimum returns with the minimum possible risk by hedging the risk and joining and participating in the new age investment avenues. Still the trust factor stands as a barrier to the investors along with the moderate level of awareness on the modus operandi of the investment avenues. A clear promotional strategy can help to come out of this situation and to set a new paradigm shift in the pattern of investments in the sample area

Hypothesis-II:
Ho: There is no significant difference between the mean ranks of factors influencing investment behavior of the investors in the sample area.

Factors Influencing Investment behaviour	Mean Rank	Chi square	p-value
Salary form my job and earnings is likely to grow significantly in the coming years	**13.35**		
I would choose my retire plan investments which give fixed yields and stability	**11.56**		
I believe investing in today's volatile stock markets is very risky	**10.46**		
Based on the return from my investment avenue I will change my investment preference	**10.07**		
Return from the investment will have an influence on the degree of	9.59		

risk I am willing to take			
I want and need to reduce overall level of debt in my personal portfolio	8.99	393.607	**0.000****
While making investment, i am willing to settle for a lower yield if the return guaranteed	8.91		
Investments should be free from financial frauds	9.00		
Government assurance on the repayment of principal and returns	9.60		
Free from anti social element activities like encroachments	9.61		
Diversified portfolios are preferred than the single and large investments	9.02		
Local investments are better when compare to other places	9.39		
Investing through and with known people is the preferred option	9.41		
Investing in the group investments is better when compare to others	9.21		
Legal aspects and litigations are the prime concerns in investment decisions	9.68		
Investing with gilt edged securities is better in long run	9.28		
Investments should be in a position to give financial protection to the family	**11.18**		
Simplified procedures should be there in investments	**10.38**		
Small investment options are more attractive than bigger ones	**11.32**		

Since P value is less than 0.001, the null hypothesis is valid. There is no significant difference between the mean ranks of factors influencing investment behavior of the investors in the sample area is rejected at 1% level of significance. Hence, it is concluded that there is a significant difference between the mean ranks of factors influencing investment behavior of the investors in the sample area. Based on the mean value the factors influencing the investment behaviour of investors in the sample area is broadly classified into three categories, namely most influencing factors with the mean score of above 10; moderately influencing factors with the mean score of 9.5 and above but below 10 and finally least influencing factors with the mean score of below 9.5 in the sample survey.

The most influencing factors of investment behaviour of the investors in the sample area are: Salary form my job and earnings is likely to grow significantly in the coming years with the mean score of 13.35; If I were to decide how to invest contributions in my retire plan, I would choose investments which give fixed yields and stability with the mean score of 11.56; I believe investing in today's volatile stock markets is very risky with the mean score of 10.46; Based on the return from my investment avenue I will change my investment preference with

the mean score of 10.07; Investments should be in a position to give financial protection to the family with the mean score of 11.18; Simplified procedures should be there in investments with the mean score of 10.38 and small investment options are more attractive than bigger ones with the mean score of 11.32 as observed in the sample survey.

Moderately influencing factors of investment behaviour of investors in the sample area are: Return from the investment will have an influence on the degree of risk I am willing to take with the mean score of 9.59; Legal aspects and litigations are the prime concerns in investment decisions irrespective of duration with the mean score of 9.68; Government assurance on the repayment of principal and returns with mean of 9.6; and Free from anti social element activities like encroachments with mean of 9.61 is observed in the sample survey.

The least influencing factors of investment behaviour of the investors in the sample area are: Investing with gilt edged securities is better in long run with mean of 9.28; Diversified portfolios are preferred than the single and large investments with the mean of 9.02; Local investments are better when compare to other places with the mean of 9.39; Investing through and with known people is the preferred option with the mean of 9.41; Investing in the group investments is better when compare to others with the mean of 9.21; I want and need to reduce overall level of debt in my personal portfolio with the mean of 8.99; While making investment, I am willing to settle for a lower yield if the return is guaranteed as opposed to higher yields that are less certain with the mean of 8.91 and Investments should be free from financial frauds with the mean of 9.0 is observed in the sample survey.

Hypothesis-III:

Ho: There is no significant difference between the mean ranks of motivating factors influencing the investment behaviour of the investors in the sample area.

Motivating factors for investments	Mean Rank	Chi square value	p-value
Creation of financial and investment awareness	**14.48**		
Introduction of financial inclusion	**12.20**		
Establishment of institution in rural areas	**11.01**		
Control on the transactions of investment companies	10.89	226.240	**0.000****

Introduction of technology in rural areas	10.75		
Government control on the financial markets	10.77		
Strict control on financial services	10.33		
Government participation in the process of financial inclusion	10.85		
Control on the entry of financial service providers	10.52		
Improving professionalism	10.37		
Imparting proper training and control the agents	10.49		
Standardization of products	10.68		
Standardization of charges and commissions	10.31		
Control on returns and risk levels	10.69		
Control on insider trading	10.63		
Financial regulation and reporting	11.23		
Speedy disposal of legal issues	11.26		
Promotional agency for financial inclusion	10.91		
Autonomous body to control financial frauds in rural areas	10.96		
Rural investment growth planning by the government	10.89		
Incentives for rural investments	10.78		

Since P value is less than 0.001, the null hypothesis, There is no significant difference between the mean ranks of motivating factors influencing the investment behaviour of the investors in the sample area is rejected at 1% level of significance. Hence, it is concluded that, there is a significant difference between the mean ranks of motivating factors influencing the investment behaviour of the investors in the sample area.

Based on the mean value the motivating factors of investment behaviour of the investors in the sample area are classified in to two types. The factors having above 11.0 mean score are titled as Predominant factors and the factors having mean score below 11.0 as Attractive factors.

The factors loaded with mean score of 11.0 and above and titled as predominant factors are: Creation of financial and investment awareness with mean score of 14.48; Introduction of financial inclusion with mean score of 12.20, financial regulation and reporting with mean of 11.23; speedy disposal of legal issues with mean of 11.26 and Establishment of institution in rural

areas with mean score of 11.01 is observed in the sample survey.

Attractive factors with the mean score of below 11.0 are: Control on the investment transactions of investment companies with the mean score of 10.89;Introduction of technology in rural areas with the mean score of 10.75; Government control on the financial markets with the mean score of 10.77; Government participation in the process of financial inclusion with the mean score of 10.85; Control on the entry of financial service providers with the mean score of 10.52; Standardization of products with the mean score of 10.68; Control on
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returns and risk levels with the mean score of 10.69; Control on insider trading with the mean score of 10.63; Promotional agency for financial inclusion with the mean score of 10.91; Autonomous regulatory body to control financial frauds in rural areas with the mean score of 10.96; Rural investment growth planning by the government with the mean score of 10.89; Incentives for rural investments with the mean score of 1078; Standardization of charges and commissions with the mean score of 10.31; Improving professionalism with the mean score of 10.37 and Strict control on financial services with the mean score of 10.33, as observed in the   sample   survey

FACTOR ANALYSIS:

In order to find out the dimensions of investment behaviour in the sample, Principal Component Analysis with Varimax rotation is used. In this part of the analysis, the scholar is trying to group the items into factors determining investment behaviour of the investors in the sample area The sample adequacy for the factor analysis is found by using Kaiser Mayer Olkin sample adequacy test and the result is found adequate at 0.869 i.e. (86.9%). Each of the items is measured with Lickert's scale on the level of agreement and grouped by using the Principal component analysis. Five factors are emerged in the analysis; the results along with the loading are presented below

Table showing the items influencing the investment behaviour of the investors in the sample area with the calculated mean, SD and Initial extraction values of factor analysis

Factors influencing Investor behaviour			Initial
	Mean	SD	Extract
Salary form my job and earnings is likely to grow significantly in the coming years	4.10	.883	.604
I would choose my retire plan investments which give fixed yields and stability	3.79	.795	.691
I believe investing in today's volatile stock markets is very risky	3.62	.909	.549
Based on the return from my investment avenue I will change my	3.52	.997	.539

investment preference			
Return from the investment will have an influence on the degree of risk I am willing to take	3.44	1.095	.577
I want and need to reduce overall level of debt in my personal portfolio	3.32	1.104	.700
While making investment, i am willing to settle for a lower yield if the returns are guaranteed	3.31	1.054	.626
Investments should be free from financial frauds	3.30	1.101	.658
Government assurance on the repayment of principal and returns	3.44	1.111	.604
Free from anti social element activities like encroachments	3.42	1.075	.643
Diversified portfolios are preferred than the single and large investments	3.34	1.058	.513
Local investments are better when compared to other places	3.40	1.041	.552
Investing through and with known people is the preferred option	3.40	1.071	.615
Investing in the group investments is better when compare to others	3.38	1.076	.510
Legal aspects and litigations are the prime concerns in investment decisions	3.43	1.092	.550
Investing with gilt edged securities is better in long run	3.34	1.085	.514
Investments should be in a position to give financial protection to the family	3.70	1.020	.536
Simplified procedures should be there in investments	3.56	1.010	.739
Small investment options are more attractive than bigger ones	3.73	.963	.606

Table showing the items loaded as groups along with the designated factor names

Item.No	Items	Factor loading	Name of the factor
Q22.18	Simplified procedures should be there in investments	.822	Operational factors
Q22.19	Small investment options are more attractive than bigger ones	.734	
Q22.17	Investments should be in a position to give financial protection to the family	.607	
Q22.16	Investing with gilt edged securities is better in the long run	.586	
Q22.10	Free from anti social element activities like encroachments	.786	Safety Factors
Q22.9	Government assurance on the repayment of principal and returns	.753	
Q22.8	Investments should be free from financial frauds	.585	
Q22.11	Diversified portfolios are preferred than the single and large investments	.574	
Q22.6	I want and need to reduce overall level of debt in my personal portfolio	.796	Risk factors
Q22.7	While making investment, i am willing to settle for a lower yield if the return guaranteed as opposed to higher yields that are less certain	.746	
Q22.5	Return from the investment will have an influence on the degree of risk I am willing to take	.566	
Q22.4	Based on the return from my investment avenue I will change my investment preference	.475	
Q22.13	Investing through and with known people is the preferred option	.702	Trust factors
Q22.14	Investing in the group investments is better when compare to others	.618	
Q22.15	Legal aspects and litigations are the prime concerns in investment decisions	.553	
Q22.12	Local investments are better when compare to other places	.501	
Q22.1	salary form my job and earnings is likely to grow significantly in the coming years	.772	Contingency factors
Q22.2	If I were to decide how to invest contributions in my retire plan, I would choose investments which give fixed yields and stability	.757	
Q22.3	I believe investing in today's volatile stock markets is very risky	.678	

Based on the analysis and loadings, the items were grouped in to five factors. Each factor explains a different dimension of an investor, which influences the investment behaviour in the sample area. The factors are Operational factors, safety factors, risk factors, trust factors and contingency factors. Operational factors is discussing the variables related to modus operandi of an investment, safety factors are focused on explaining the investment safety and returns guarantee and assurance in the future, risk factors explaining the risk associated with the each type of investment and the probability of future risks, trust factors explains the need for trust and proximity of the guarantors in the investment process and their ability to give protection from risks, and finally contingency factors covers the future aspects related to risk of an investments. The grouping is done exactly as per the nature of the items and one can say the results are highly reliable in explaining the variables determining the investment behaviour of investors.

SUGGESTIONS:

* It is a matter of creating awareness on the modern financial products, modus operandi, how these are better than conventional investments, safety part, regulatory information, risk protection mechanism and rights and duties of an investor in the light of financial reforms inculcated by the financial regulatory bodies , which can help in creating a massive improvement in the level of awareness among the investors. The mode of publicity should be word of mouth and printed format, small screen can help us creating agenda for the plan of action.

Another factor is investment objective found as follows: It is noted from the table 4.2.15, that the primary objective to go for investments by the investors in the sample represented as for buying a house by 34.8 percent, children's education purpose by 34 percent, children's wedding purpose by 10.9 percent, to provide financial protection to the family by 12.7 percent of the sample.

Hence, investment behaviour can be modified if the factors considered by an investor in decision making along with the preferred investment tenure, risk bearing capacity and investment objective suitability with the type of products launching in the market. It is necessary to do the market study, the investor's requirements and expectations relating to investments and designing products and services accordingly can help in improving the positive behaviour among the investors in the sample area.

* Investment climate generally depends on the size of the market, existence of public and private investment companies, nature of competition, number of investment companies. Period of existence, the type of investment products offered, the tenure of the investments, average returns, flexibility in the products etc. Investment climate is associated with the competition and demand for the money. Another observation is commercial activities size and the occupational patterns will determine the investment climate of a particular geographical area. Private investments are

high in the commercial areas, where business entities dominate the investment firms by paying attractive rates of interest on private financing. The risk factor is compensated with personal guarantees and muscle power mechanism.

Investment institutions regulation and control is necessary to improve the investment climate and safety factor to the individual investments in the sample area. It is observed in the sample survey that hassle free investment avenues needs to be designed and launched by the investment companies. The items grouped and designated as **Hassle free motivators** are: Social and financial security to the family with the loading score of 0.733; Freedom from legal hassles with the loading score of 0.730; Items grouped and designated as **Risk mitigation motivators** are: Just to diversify current holding with the loading score of 0.770; Best investment options offered by the companies with the loading score of 0.740;. The items grouped and designated as **Safety motivators** are: No threat form fly by night activities with the loading score of 0.744; Low rate of interest rates on government securities with the loading score of 0.723; Fluctuating and low level of interest rates of bank deposits with the loading score of 0.555 and Flexibility in payment of total investment in installments with the loading score of 0.510 is recorded in the sample survey among the investors in Cuddalore district.

Suggestions for Technological Innovations

Technology is the key and vital for the success of any enterprise today. The need for technological set up is represented in the survey as a group of items designated as **Technological factors** includes, Increased cyber crimes and investment frauds with the score loading of 0.711; Insider trading with the score loading of 0.707; Beaurocracy behavior with the score loading of 0.678 and Lack of responsible investment behavior with the score loading of 0.250 in the sample survey. The existing set up needs to be upgraded and maintained in a proper manner from time to time.

Suggestions to Improve Customer Service Quality

It is noteworthy to have an observation and suggestion on the service quality of the financial services, especially investment avenues. In the sample survey The items grouped and designated as **Product factors** include Lack of control on risk and returns with the score loading of 0.790; No proper governance in financial investments with the score loading of 0.744; Lack of consistency with the score loading of 0.724 and Lack of awareness on technology with the score loading of 0.563 in the sample survey. The items grouped and designated as **Governance factors** include Improper structure of financial products market with the score loading of 0.688; Privatization leads to cut throat competition with the score loading of 0.665; Lack of rational market behavior with the score loading of 0.631; False promises on risks and returns with the score loading of 0.511; Poor growth

rates of financial services in rural with the score loading of 0.509; High level of hidden investment costs with the score loading of 0.153 and Market failures with the score loading of 0.107 in the sample survey. The items grouped and designated as **Convenience Factors** include Lack of availability with the score loading of 0.618; Low level of awareness with the score loading of 0.581 and Lack of standardization with the score loading of 0.540 in the sample survey.

CONCLUSION:

The researcher concludes his work by saying that if the regulatory body and the government are stringent, financial markets, institutions and financial products and services can flood in the market and collect funds for the developmental activities of an economy. Proper planning, organization and operating is need of the hour. Regulation should come first, markets, institutions and products can follow the route map given by the regulatory body. No second chance in interpreting in a different way is needed by evaluating and controlling the market environment and financial institutions business from time to time. Simple to stringent penalties and prosecution needs to be put in place to avoid delay in the decisions on malpractices and to show a way forward. All these can definitely put the investment behaviour of the investors of Cuddalore district in a well defined and progressive dimension and the investors of this country at large. Let's hope for the same to be happening at the earliest for the benefit of the investors in specific and the economy at large.

Buying Roles in Family Decision Making – A Study with Reference to Rural India towards Fast Moving Consumer Goods

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Abstract

Rural markets are gaining importance in the marketing planning exercise of all leading social marketers. This is not just because of 73 per cent of India's population still lives in rural areas, but because of the converging changes that are occurring. The Indian market has witnessed tremendous social changes and trends with women, being actively involved in the decision making process to a great extent. Women, whether they are working or housewives have emerged as a potent buyer in the market place. Although women may earn less than men, they are making 80 per cent of buying decisions in their homes. One can distinguish the several roles people might play in a buying decision. These are – Initiator, Influencer, Decider, Buyer and User. A company needs to identify these roles because they have implications for designing the product, determining messages, and allocating the promotional budget. Knowing the main participants and the roles they play helps the marketer fine-tune the marketing programme.

Key Words: Rural Market, Buying Roles, Decision-making, Rural India, Rural Family, Fast Moving Consumer Goods

INTRODUCTION

Rural markets are gaining importance in the marketing planning exercise of all the leading social marketers. This is not just because of 73 per cent of India's population still lives in rural areas, but because of the converging changes that are occurring here. Convergence of rural consumer behaviour is in the sense that – "there is not much difference between" (Agarwal, P.K. 2011). Rural consumers are behaving like urban consumers towards the urban lifestyle, fashion, taste, preferences, etc. Marketing planning exercise of all leading and social marketers is also converging according to the converging behaviour of the rural consumer.

In fact, Colgate's (the No.1 Toothpaste in India) strength stems more from its rural presence than urban. Incidentally, Colgate Toothpowder was specially conceived and made for India. The biggest brands in India belong to companies with a strong rural presence. Hindustan Unilever, ITC (a British American Tobacco subsidiary), and Colgate are among the strongest Fast Moving Consumer Good (FMCG) companies in India.

The rural India offers a tremendous market potential. A mere one per cent increase in India's rural income translates to a mind-boggling Rs 10,000 crore of buying power. Nearly two-thirds of all middle-income households in the country are in rural

India. And close to half of India's buying potential lies in its villages. Thus, for the country marketers, small and big, rural reach is on the rise and is fast becoming their most important route to growth. Realizing this, Corporate India is investing a sizeable chunk of its marketing budget to target the rural consumers.

BUYING DECISION MAKING PROCESS

The Indian market has witnessed, tremendous social changes and trends, with women, to a great extent, being actively involved in the decision making process. Women, whether they are working or housewives, in the age group 24-54 years have emerged as a potent for in the market place changing the way companies, design, position and sell their products. Although women may earn less than men, they are making 80 per cent of buying decisions in their homes (Suja R. Nair, 2011).

Men's shopping for clothes and cosmetics for women is a huge trend across the world and in India too many wives are now happy to let their spouses shop for them. Men have fine-tuned tastes, and often instinctively know what will look good on women. Though many men hate to shop, when it comes to buying women's things, they seem to have mastered the art of picking out the best. Sheetal Sharma, a fashion style expert says that "My husband is so aware of fashion trends that I am always taking fashion advice from him" (Karunakaran, K., 2010).

A well- known fashion guru has been shopping for his wife for 20 years now.

Another young professional, who loves the clothes her husband buys for her on his trips abroad. Besides clothes, he also shops for cosmetics, skin care products and shoes and his taste is impeccable. He just observes where most shoppers are heading towards and joins them. But not all women always like what their men buy for them. A few complaint that their men do not get the kind of perfumes they like and sometimes they go wrong in the clothes too (www.indiatimes.com).

Marketers have to go beyond the various influences on buyers and develop an understanding of how consumers actually make their buying decisions. Marketers must identify who makes the buying decision, the type of buying decision that is involved, and the steps in the buying process.

NEED OF THE STUDY

Knowledge about buyer behaviour is necessary for the development of effective marketing strategies. Members in a family influence the decision-making process in the purchase of different products, whether it is high-value or low-value items, which are used by several members in the family. Therefore, the real target for the marketer is not an individual member but the family as a whole.

One can distinguish the several roles people might play in a buying decision. These are – Initiator, Influencer, Decider, Buyer and User. The initiator is the person who first suggests or thinks of the idea of buying the particular product or services. An influencer is a person whose views and advice carry some weight in making the

final decision. The decider is a person who ultimately determines any part of, or the entire buying decision – whether to buy, how to buy or where to buy. The buyer is the person who makes the actual purchase. The user is the person or persons who consume or use the product or service.

A company needs to identify these roles because they have implications for designing the product, determining messages, and allocating the promotional budget. Knowing the main participants and the roles they play helps the marketer fine-tune the marketing programme. Consumer decision-making varies with the type of buying decision. There are great differences between buying a tube of toothpaste, a cricket bat, a personal computer and a new car. The more complex and expensive decision are likely to involve more buyer deliberation and more buying information. This motivated the researcher to know more about the buying decisions carried out in the rural family. Hence, this research is undertaken.

OBJECTIVE OF THE STUDY

The main objective of the study is to analyze the roles played by the rural consumers in their family in decision making towards buying Fast Moving Consumer Goods.

METHODOLOGY AND SAMPLING
 The primary data is the main source of the study. However, secondary data have also been used. The researcher administered a comprehensive interview schedule for collecting primary data with regard to rural consumers' buying decisions towards fast moving consumer goods. This interview schedule was carefully designed and duly pre-tested. Pilot study was also undertaken and necessary changes were incorporated before finalization.

The researcher has collected primary data from 300 sample respondents. These respondents were selected from two purely rural based taluks viz. Peraiyur and Vadipatti taluks of Madurai district. Samples of 150 rural consumers have been selected from each taluk to ensure equal representation. A non-probability convenience sampling was adopted. The respondents were contacted at their residence as per their convenience. Rapport was established by explaining them the objective of the study.

BUYING ROLES IN FAMILY DECISION MAKING

 An attempt has been made to know the buying roles of rural consumers towards Fast Moving Consumer Goods (FMCG). Five roles (as defined by Philip Kotler namely, the initiator, the influencer, the decider, the buyer and the user) by family members in the purchase of fast moving consumer goods were examined for the study.   The roles have been shown in the following Figure 1.

FIG. 1
Buying Roles in Decision Making Process

Need Recognition (Stage-I) →	Information Search (Stage-II) →	Evaluation of Alternatives (Stage-III) →	Purchase Decision (Stage-IV) →	Post-purchase Behaviour (Stage-V)
INITIATORS	INFLUENCERS		DECIDERS, BUYERS	USERS
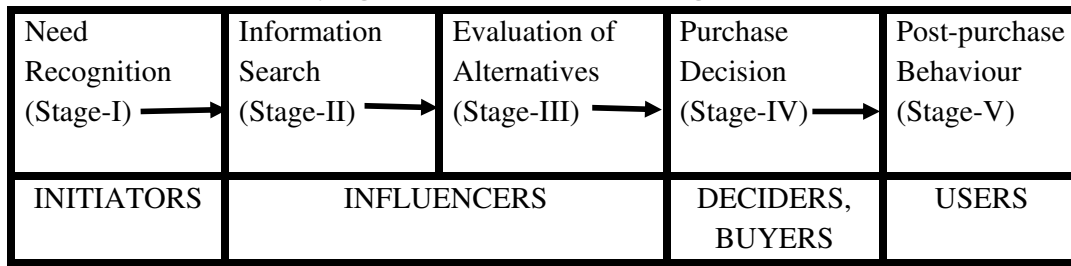
In the study the family members have been grouped as husband, wife and children including others. Others represent grandparents, etc. whose frequency is taken along with children for the purpose of this study. The analysis is carried out based on the overall 300 sample respondents. These roles have been analyzed with the help of percentile and chi-square analysis.

The Initiator

Any member of the family can express the need for consumer goods. Quite often, the product in question would not merely be for the initiator's personal use but for use by the entire family. The need for particular consumer goods in a family may remain latent till it is triggered by certain internal or external stimuli. Internally, some of the normal needs may rise to a threshold level and become a 'drive' when one or more of the members express the desire to buy the product and the thought is shared among different family members. Externally, various stimuli such as advertisement or word of mouth publicity can lead to the initiation process.

The nature of the fast moving consumer goods to be purchased and the personal characteristics (sex, age, level of education, income etc,) of the concerned family members govern the behaviour of the initiators. It is hence important to identify the initiators for different fast moving consumer goods. Table 1 reveals the initiator member and purchase of products.

TABLE – 1
Initiator-Member vis-à-vis Product Purchased

Product Purchased	Number of Initiator-Members			
	Husband	**Wife**	**Children and Others**	**Total**
Personal Care	13 (14.6)	44 (49.4)	32 (36.0)	89 (100.0)
Home Care	18 (23.7)	48 (63.1)	10 (13.2)	76 (100.0)
Oral Care	12 (15.4)	18 (23.1)	48 (61.5)	78 (100.0)
Food and Beverages	14 (15.4)	22 (24.2)	55 (60.4)	91 (100.0)
Total	57 (17.1)	132 (39.5)	145 (43.4)	334 (100.0)
Chi-square = 55.41 (Significant at 1% level)				

(Figures in parentheses represent percentages)

From Table 1 it was found that 334 family members had acted as initiators, with more than one member having acted as initiator in some families. Wife emerged as the single initiator-members for the personal care products (49.4%) and home care products (63.1%). They were also found to be important co-initiators in the purchase of food and beverages (24.2%) and oral care products (23.1%). But the children and others were the dominator for the oral care and food and beverage products. It accounted for 61.5 per cent and 60.4 per cent respectively. It is noted from the study that the 'husband' was dormant in their role as initiators.

A cross tabulation of the initiator-members vis-à-vis the product purchased was done in order to identify the relative important of the family members who initiated the purchase process for different fast moving consumer goods. The chi-square value (55.41) shows a significant difference in the product purchased and the member initiating the purchase of the product at one per cent level.

The Influencer

The influencer is a person whose views carry some weight in the decision. Broadly, family members acting as influencers express their views regarding the features available in a particular product and the brand to be selected.

Unlike the organizational buying process, in the case of a family, the influencers do not usually have expertise but assume their respective roles on the basis of the family dynamics. The role of an influencer spans across stages II and III (information search and evaluation of alternatives) of the decision-making process (Fig.1).

Once the decision to buy particular fast moving consumer goods is made and announced, family members may provide what information is available to them about the product, and may even be assigned to gather information. For collecting additional data, the influencers may use any of the four basic sources of information, viz. personal, commercial, public and experiential. The degree of acceptance of the information and the preferences of the influencers may, however, vary. Although there is a separate role for the 'decider', degree of consideration of the ideas and suggestions depends upon all the members who are acting as influencers. The person whom the influencers confide in assumes the role of the moderator. The same person may also instruct the members to collect the desired information. The influencer member and the product purchased is shown in Table 2

TABLE – 2
Influencer-Member vis-à-vis Product Purchased

Product Purchased	Number of Influencer-Members			
	Husband	**Wife**	**Children and Others**	**Total**
Personal Care	27 (28.1)	39 (40.6)	30 (31.3)	96 (100.0)
Home Care	15 (18.8)	42 (52.5)	23 (28.7)	80 (100.0)

Oral Care	23 (28.0)	24.(29.3)	35 (42.7)	82 (100.0)
Food and Beverages	29 (27.6)	32 (30.5)	44 (41.9)	105 (100.0)
Total	94 (25.9)	137 (37.7)	132 (36.4)	363 (100.0)
Chi-square = 13.64 (Significant at 1% level)				

(Figures in parentheses represent percentages)

It is evident from Table 2 that unlike in the case of initiators no fixed profile emerged in the case of influencers, who were 363 in number, thus more than one members in the 300 families acting as influencer. Wife plays a major role as influencer for personal care (40.6%) and home care products (52.5%). They act as co-influencer for food and beverage and oral care products. Children and others dominate as a major influencer for oral care (42.7%) and food and beverages (41.9%). Husband also played as influencer member to the more than 25 per cent in personal care, oral care and food and beverages.

A cross tabulation of the influencer–members vis-a-vis product purchased revealed that family members in the role of influencers changed with the product under consideration. Children and others had acted as influencers in the case of purchase of oral care and food and beverages. The wife had acted as a strong influencer in the purchase of personal care and home care products. The husband had been the influencer in the case of all the fast moving consumer goods with an almost uniform frequency except for home care products. The calculated chi-square value of 13.64 shows a significant at one per cent level.

The Decider

As the family progresses with the decision-making process, on the basis of the information collected in the previous stages, a member assumes the responsibility for finally deciding the characteristics of the product to be purchased and executing the decision with regard to the brand, the vendor, the timing and the payment method. Although various members of the family act as influencers offering their opinions and gathering information, it is finally the decider who shifts this information for his/her use. The role of a decider, corresponding to stage IV (purchase decision) of the decision-making process (Fig.1), is very important for the family, as the decision-maker is responsible for the trade-off with alternative products and is the final authority on the product to be purchased. Table 3 exhibits the facts of decider-member and the product purchased.

TABLE – 3
Decider-Member vis-à-vis the Product Purchased

| Product Purchased | Number of Decider-Members | | | |
	Husband	**Wife**	**Children and Others**	**Total**
Personal Care	62 (65.3)	14 (14.7)	19 (20.0)	95 (100.0)
Home Care	55 (61.1)	29 (32.2)	6 (6.7)	90 (100.0)

Oral Care	51 (63.7)	17 (21.3)	12 (15.0)	80 (10.0)
Food and Beverages	60 (58.3)	28 (27.2)	15 (14.5)	103 (100.0)
Total	228 (62.0)	88 (23.9)	52 (14.1)	368 (100.0)

Chi-square = 13.01 (Significant at 5% level)

(Figures in parentheses represent percentages)

From Table 3 it can be deduced that the decider in a family for the purchase of fast moving consumer goods is typically a male member. It is observed from the above table that the main deciding authority rested with one member, who was male in most cases. Overall it accounts for 62 per cent but product-wise, except food and beverages all other fast moving consumer goods have accounted for more than 61 per cent. Next to this, wife is also dominating some extent. It works out to 23.9 in overall. She plays the decider role in home care (32.2%) and food and beverages (27.2%) by considering the health of the family. This could mean that the wife in the Indian family looks up to the husband to make the final decision once she has expresses her need and given all the details of the product.

A cross tabulation of the decider-members vis-à-vis the product purchased revealed that in most of the products the husband was the decider except in the case of home care products, where a relatively larger number of wife-members (32.2%) have acted as deciders.

This indicates that a typical Indian family is male dominated especially when it comes to the final decision about the purchase of fast moving consumer goods. Although more female members are now working outside the home, the main breadwinner in Indian families is still a male member and for a high value as well as low value products the main financial contribution is likely to come from the male members. The computed chi-square value is 13.01. It is significant at five per cent level.

The Actual Buyer

In the context of the study, the term 'buyer' refers to the family member(s) who are physically involved in the process of purchasing a product. Traditionally, fast moving consumer goods are purchased at all times based on the necessity and there is no specific season for that. However, most of the companies give some offers for some products and the buyer will be more at the time. Similar sentiments also prevail in other parts of the country during offer periods. In view of these market characteristics and consumer behaviour, the responsibility of purchasing the product would be bestowed on the most important person in the household. Although this is a very advanced stage in the decision-making process when most things have been discussed and decided, the buyer is still exposed to the influence of the retailer. It is important to assess as to what extent the buyer is aware about the different aspects of the product to be purchased and how far the retailer is able to influence the purchase decision. Both these aspects have far-reaching implications for the marketer when he

balances the push and pull selling strategies.

The role of a buyer corresponds to stage IV (purchase decision) of the decision-making process. The product finally purchased by the buyer shall decide subsequent post-purchase behaviour. Table 4 shows the results of buyer member and the product purchased.

TABLE – 4

Buyer-Member vis-à-vis the Product Purchased

Product Purchased	Number of Buyer-Members			
	Husband	**Wife**	**Children and Others**	**Total**
Personal Care	50 (58.1)	25 (29.1)	11 (12.8)	86 (100.0)
Home Care	32 (42.7)	36 (48.0)	7 (9.3)	75 (100.0)
Oral Care	35 (47.9)	20 (27.4)	18 (24.7)	73 (100.0)
Food and Beverages	41 (44.1)	29 (31.2)	23 (24.7)	93 (100.0)
Total	158 (48.3)	110 (33.6)	59 (18.1)	327 (100.0)
Chi-square = 17.25 (Significant at 1% level)				

(Figures in parentheses represent percentages)

It is understood from Table 4 that the study revealed that a buyer in the case of purchase of fast moving consumer goods is more likely to be a male member (48.3%). Following this, wife dominates to the extent of 33.6 per cent as buyer-member. Children and others also play 18.1 per cent as buyer-member in the study.

The study sought to ascertain whether the members in the buyer's role changed with different products or the same pattern was applicable universally for all fast moving consumer goods. A cross tabulation of the buyer member vis-avis the product purchased (Table 4) reveals that although the husband is undoubtedly more prominent in the buyer's role (except for home care products), a relatively higher proportion of the wife-members have been the buyers in case of food and beverages (31.2%), personal care (29.1%) and oral care (27.4%). But the wife-member is the dominant buyer in the case of home care

products (48%). In the study, children and others also play the buyer role in oral care (24.7%) and food and beverages (24.7%). The computed chi-square value (17.25) shows a significant difference in the member playing the buyer's role with different products at one per cent level.

The Product User

Although almost all the members of a family are beneficiaries of the product, it is imperative to identify who actually qualifies as the end-user of the product, and how satisfied the user is with different ingredients of the product. Since so many members have influenced the purchase decision, it is possible that user satisfaction may vary on different counts. For instance, children may be the real users of food and beverages that has been purchased after the collective influence of various family members. The children may or may not be fully satisfied with the product, which is reflected in their post-

purchase behaviour. (The role of a user corresponds to stage V – post-purchase behaviour of the decision-making process). The users may or may not recommend the product to others on the basis of their satisfaction levels. This has serious implications for the marketer since word of mouth plays a very important role in the purchase of fast moving consumer goods. Table 5 illustrates the user-member and the product purchased.

TABLE – 5
User-Member vis-à-vis Product Purchased

| Product Purchased | Number of User-Member | | | |
	Husband	Wife	Children and Others	Total
Personal Care	33 (20.4)	59 (36.4)	70 (43.2)	162 (100.0)
Home Care	25 (26.9)	47 (50.5)	21 (22.6)	93 (100.0)
Oral Care	31 (19.4)	51 (31.9)	78 (48.7)	160 (100.0)
Food and Beverages	36 (20.2)	56 (31.5)	86 (48.3)	178 (100.0)
Total	125 (21.1)	213 (35.9)	255 (43.0)	593 (100.0)
Chi-square = 20.48 (Significant at 1% level)				

(Figures in parentheses represent percentages)

It is evident from Table 5 that there are 593 active users in the study. Among them, children and others accounts for 43 per cent following this wife (35.9%) and husband (21.1%) are the users of different fast moving consumer goods.

A cross tabulation of the actual user-members vis-à-vis the product categories revealed that different family members were active users for different products. Children and others turned out to be the maximum number of users of oral care (48.7%), food and beverages (48.3%) and personal care (43.2%). But, the wife emerged as the dominant user in case of the home care products (50.5%) following this husband accounts for 26.9 per cent. Husband has not dominated more in user-member category. This observation can help us classify these products as wife-dominated, husband-dominated, children – dominated and common-usage fast moving consumer goods. The chi-square test shows a significant difference in the product and the members who act as its users, at one per cent level.

FINDINGS OF THE STUDY

The major findings of the study are listed as below:
1. Husband is the decider-member for all the selected products in study unit.
2. The family member 'wife' is acting as initiator-member, influencer-member and user-member for personal care and home care products.
3. Children also dominate in buying roles in the case of oral care and food and beverage products.
4. A cross-tabulation of initiator-member, influencer-member, decider-member, and user-member

and the product purchased shows significant relationship at one per cent level whereas the decider-member and the product purchased showed significant relationship at five per cent level.

CONCLUSION

Families as consumers display certain homogeneous characteristics irrespective of who their members are. All the purchase decisions, whether for buying a product for personal consumptions or for common use, ranging from which brand to be purchased, in what quantity, how often, and from where to purchase, entail the playing of different roles by various family members. The precise role to be played by any member varies according to the dynamics of a particular family, its lifestyle, the personality of the individual member and his relationship with other members, as also the nature of the product bought. The marketer must, therefore, take the family into consideration while framing the marketing strategies.

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Exploring Possibilities of Public-Private Partnership (PPP) Through Institute- Industry Interaction (III) As A Natural Phenomenon

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Abstract

Technical institutes play very important role in society. They make students knowledgeable, workable and productive after rigorous efforts of teaching and training. Knowledge and training that they impart shall match requirements of contemporary system of production and services, and quality of that. For the purpose, institutes need to understand current requirements/ trends of industry so as to incorporate those elements in course/ curriculum. Without adequate interaction between the two, institutes keep on imparting basic theoretical knowledge only. The industry- institute interaction will enable to undertake research by industry personnel and students matching with requirements of industry. Through industrial internship has been a part of graduate/postgraduate management and technical program for long, lack of interest from both the sides mars its importance and makes it only a formality. Despite the fact that this internship provides opportunity to students, institutes and industry to come together to better understand each other and to work for benefits of each other. Unfortunately, Institute and Industry lack this fruitful interaction in real sense. If institute-industry start interacting in a better way by considering it a need to be or remain competitive and effective facing today's global challenges, they will have to establish smooth and effective interaction. The earlier this is done better will it be.

This research paper throws light upon several aspects of institute- industry interaction and tries to recognize opportunities and avenues open to all if they interact. It also tries to show why industry-institute interaction is critical now? The paper also explores the scope and possibilities for progression of a smooth industry- institute interaction (III) into public-private

Key Words: Academia, Industry, Public-Private Partnership, Institute- Industry Interaction.

INTRODUCTION

Today's world is different from the past. It is full of challenges and enormous opportunities simultaneously. Therefore, it is need of hour that at the level of higher education, students should be given more practical exposure along with required theoretical knowledge. Having taken their vocational, technical and/or management degrees/ diplomas viz. B. Tech, MBA, MCA, etc., most of the students join industry as specialists of their areas. Therefore, it becomes necessary for them to know the environment, working culture, duties and responsibilities associated with various posts of management and operation, latest happenings and trends in the industry while they are pursuing their professional courses.

Since, these technical/ management/ vocational courses are designed to cater needs of industry there should always be involvement of industrial expertise in designing the course curriculum. Adequate practical exposure should be made mandatory for every professional student.

This calls for both the bodies (institute and industry) to work hand in hand when it comes to getting educated, skilled and trained human resource and various other supports from academia. Thus, it is explicit that there must be a continuous interaction between institute and industry for benefits to all. Having recognized the importance of institute-industry interaction, most of technical and management institutes have set up their campuses near industry.

Historically, there has been a wide variety of interactions practiced among industries and institutes which includes problem solving, curriculum development, study visits, scholarships, apprenticeship training and incubation center. This interaction started in simple form and if it had been active and smooth then it should have gradually evolved to very close partnership overtime. However, the concept of public private partnership has not evolved so far. During the years of interaction, it has been seen that Industry has, by far, not been involved in taking sustainable financial, technical and operational risks in designing, financing, building and operating educational projects. Therefore, public-private partnership has been regarded as a natural progression of relationship from interaction where the private sector assumes substantial operational risks in designing and implementing educational projects.

REVIEW OF THE LITERATURE

Following is the latest chronological review of the literature regarding the subject:

The perennial and persistent cry of most of the industries in the Asia Pacific Region is that graduates having technical/ vocational education or training turned out by the system lack in the requisite skills, knowledge, attitudes or values to meet their needs. In effect, pre-mature competencies possessed by the new workforce are feared to affect productivity (Majumdar: 2008). Prof. Prem Vrat, Former Vice Chancellor, U.P. T. U., Lucknow and Former Director IIT Roorkee (2009) stated, "Academia-Industry Interaction debate has been taking place almost for past forty years in India and almost same points are raised and same resolutions are made and matter is buried in files till next debate on the same topic somewhere and issues repeated and same sentiments expressed. Even from an intuitive viewpoint, if we are debating same issues in a similar manner for past four decades, it implies, the issue is relevant and cannot be forgotten, yet it remains unresolved." Starting the discussion on enhancing academia-industry interactions R. Chidambaram (2011), principal scientific advisor to Indian government, said, "Industries, when they are globally competitive, like to interact with academia…Industry is good at delivery while academia is good at research and what is needed is innovation to bridge the two." According to Council of Scientific and Industrial Research (CSIR) Director General S.K. Bramachari (2011), the industry-institute should look at research projects that would bring down the cost and make the products accessible to poor.
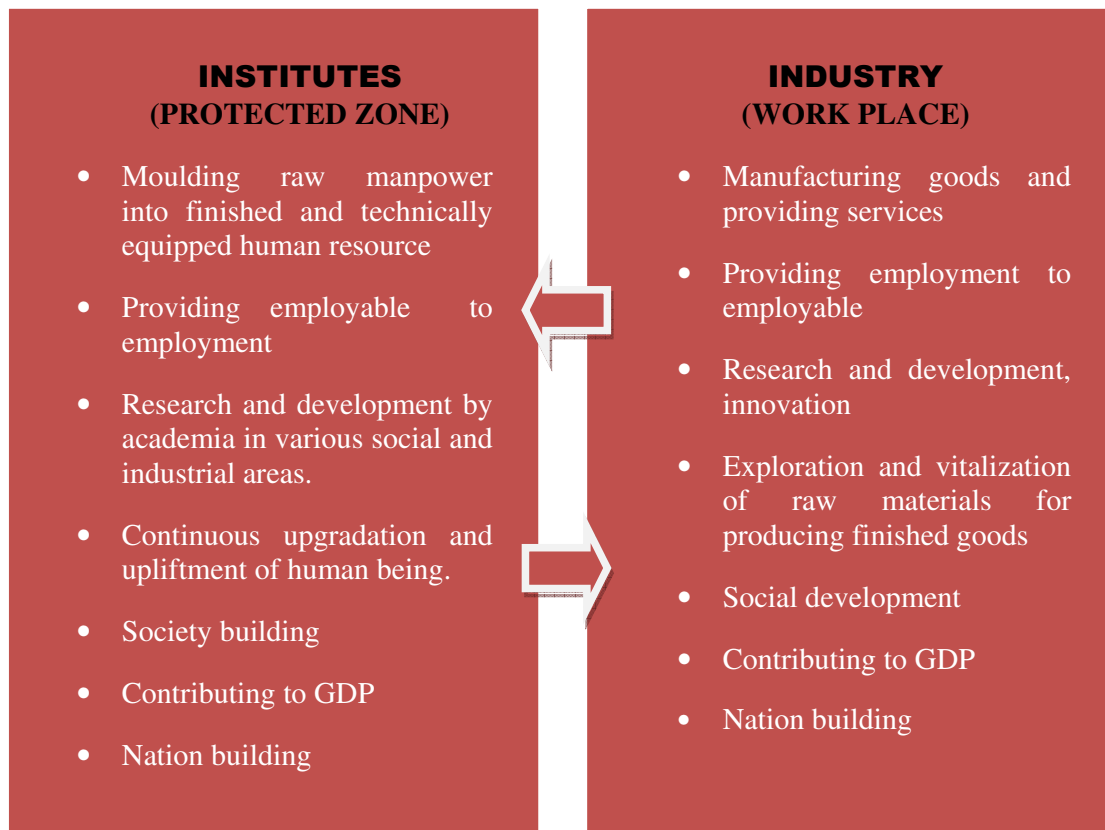
1. How Can 'Institute' and 'Industry' be Natural Allies?

Institute and Industry have activities going on in them. Institutes do the general development of students that will give them a wide range of opportunities and choices in/ after graduation while industries look for technicians and employees with specific skills who will fit directly into the system.

Due to this discrepancy, there is a need to create a platform where institutes and industry can share ideas and regularly interact. Forms of interaction can take place with the aim to understand and jointly plan pre-employment and in-service training.

If we look deeper to the specific environments in the institute and in the industry, it can be observed that institutes carry out their goals to facilitate learning, preserve a protected zone for students and nourish individual care to address the needs of the learners. The industry, on the other hand, work within the framework of industrial practices and norms with production, efficiency and profitability as the basic premise of day-to-day operations.

INSTITUTES
(PROTECTED ZONE)

- Moulding raw manpower into finished and technically equipped human resource
- Providing employable to employment
- Research and development by academia in various social and industrial areas.
- Continuous upgradation and upliftment of human being.
- Society building
- Contributing to GDP
- Nation building

INDUSTRY
(WORK PLACE)

- Manufacturing goods and providing services
- Providing employment to employable
- Research and development, innovation
- Exploration and vitalization of raw materials for producing finished goods
- Social development
- Contributing to GDP
- Nation building

Fig.1: Co-ordination and Common Goals between the two different Worlds: Institutes and Industry

The characteristics of the workplace as the supreme learning environment must be coordinated properly to ensure that there is a close correlation between the types of training that the workforce is being prepared for vis-à-vis the work environment, tasks and work systems. The institutions' objectives must meet the expectations that industries regard in the context of finding the best in the pool to help them achieve industry goals.

2. **Institute-Industry Interaction:** *A Critical Need in the Knowledge Economy*

On the basis of the role of institute and industry given above, it is quite clear that their roles are targeted at a common goal i.e. betterment of human life and nation building. Institutes provide knowledge and skills while industry provides them money and material things for utilizing their knowledge, skills and services. However, the complexities at the work place brought about by the rapid technological changes, paradigm shifts in education and training and the growing demand for skills training, call for harmonized efforts to reverse the acute skills shortage in many developing countries. III allows to explore endless possibilities in working in synergy and to derive a new focus to address socio-economic and technology-driven challenges.

One of the challenges in the present times is the rapid pace of technology which makes skills obsolete at greater pace before everyone else could learn from them. The excessive pace of technological

changes has emphasized the need to integrate technological knowledge and skills in education and training to expand life-long capabilities of a knowledge-based worker. It has been observed that the economic pace of technological change makes 50 percent (50%) of computer knowledge irrelevant within one year, technological knowledge in three years, specialized vocational knowledge in five years and higher education knowledge in 10 years.

Another serious challenge is the increasing complexities at work, which lead to the growing need to adapt to innovations in the market and adopt the technologies that provide utmost efficiency in machine operations. As a result, complex procedures are borne.

Since, institute and industry somehow work for each other so as to achieve more effectiveness and efficiency in their roles. This motive calls for a critical need of continuous interaction between institute and industry.

To be specific, following are the reasons both institute and Industry should stand together for:

i.   Institutes can provide industry better employees. In addition, they can conduct Employee Development Programmes (EDP) and refresher workshops for industry personnel.

ii. A productive interaction between institute and industry is needed for inclusive growth.

iii. For experience and knowledge sharing between the two.

iv. Professional institutes are resource center for industry because they provide knowledge, skills, expertise, training, R&D etc. to industry, so industry should provide mini projects, on the job projects, internship to students for mutual benefits.

Considering that people and institutions are not always interested in getting involved, partnerships through industry-institute interaction can only be achieved by finding out strategies to draw relevant stakeholders into systematic and reciprocal interaction to address such work place trends and technology emancipation.

3. **Why don't Institute and Industry have Enough Interaction?**

There are a number of reasons responsible for lack of interaction with both the parties.

3.1 Industry can't have enough interaction because

i. Industry persons are very busy to meet various deadlines of their own, so they can't spare their time for students.

ii. Lack of seriousness or indiscipline among students

iii. Casual approach of institutes and faculties in follow up of students projects

iv. Their project reports usually can't offer any new dimension

v. Industry thinks that having interaction with institutes is returnless and thankless

3.2 Institutions can't have enough interaction because of

i. Lack of good students, trained/experienced faculty members, quality education to meet requirements of industry

ii. Project works of students being considered a formality

iii. Faculty members are not encouraged/ benefited for having this interaction

iv. Lack of faculty development programme

4. **Institute-Industry Interaction: Objectives**

Close institute industry interaction is basically considered to improve the quality of technical and vocational education adequately to meet the needs of the institutes, industry and economy. Mutual benefit can be derived from the shared expertise and experiences between the industry and the institute. Following are the objectives of Institute-Industry interaction:

i. To provide quality education and industrial

exposure to students to meet needs of industry and economy.

ii. To make students familiar with work culture and industrial environment by integrating industrial internship with their curriculum.

iii. To design course curriculum to meet today's challenges of business and life.

iv. To organize training, development and refresher programmes for working personnel.

v. To organize guest lectures by experts from industry.

vi. To provide findings, analysis and recommendations of researches, consultancy services to industry either to solve industrial problems or to increase efficiency & productively.

5. Areas of Co-operation

To achieve excellence in their fields both, institute and industry should identify areas of co-operation and start working for. So far, the identified areas where institute and industry are supposed to co-operate are:

i. Joint seminars and gust lectures

ii. Faculty Development Programmes (FDP)

iii. Management Development Programmes (MDP)

iv. Case writing and Course Curriculum designing

v. Recruitment and Training of employees

vi. Industrial internship of students

vii. Financial support to institutes

viii. Inclusion of industry into Board of Studies and Governing Councils

ix. Development of society by jointly addressing burning social issues

x. Innovation by joint efforts

xi. Selection and induction of faculty members

xii. Setting up of Interaction Cell

xiii. Infrastructure development

6. Benefits to The Parties in the Interaction

Let us discuss benefits to the parties such as institute, industry, society/ nation one by one.

6.1 Benefits to the Institute:

i. Building good image and brand value

ii. Becoming most sought after institute or priority institute

iii. Including market concepts in education, research and development

iv. Promoting live project, internship programmes and industrial researches for students

v. Getting industry experts for guest lectures, and organizing joint seminars

vi. Getting funds for academic and applied research

vii. Getting industry experts in Board of Studies and Governing body.

viii. Getting financial and infrastructural support

ix. Getting better employment opportunities and placements to the students

x. Developing long term sustainable collaboration with prioritized industries

6.2 **Benefits to the Industry:**

i. Institutes, by implementing course curriculum designed with the help of industry, can cut the cost of training, time and various other inputs.

ii. Joint workshops and live projects prove advantageous to both

iii. Industry gets ready- to-work self motivated and fit-to-job employees

iv. By getting innovative ideas, global visibility, resolving business problems by consultancy from academia industry can go global and stay competitive

v. Academia acts as incubators to new business and bridges the gap between knowledge and application.

vi. Identifying priority institutes and collaborating with them on a long term basis for innovation

activities, R&D activities, and also allocating funds for these activities

vii. Smart brains at institutes can help industry in realizing the possibilities of innovation in products and process, and also can help in strategic decision making

viii. Industry can achieve corporate growth with the help of academia

6.3 **Benefits to the Society/ Nation:**

i. The interaction ultimately benefits the Society and Nation as

ii. It creates more employment leading economic growth

iii. It provides opportunity for inclusive development of Institute-Industry-Society

iv. It promotes feeling of belongingness, integrity and fraternity among all sections of society

v. It reduces crime rate and prevails better understanding, conducing atmosphere for all

vi. Catalytic Role of Government:

vii. Government also can play crucial role to encourage this synergy. Government's role may relate to

viii. Income tax exemptions and donations to institutes

ix.   Grants to institutes to conduct free refresher courses for MSMEs.

x.   Exemption of import duties on chemicals, lab instruments and furnishings etc.

xi.   Offer deemed university status to leading technology and management institutes

xii.   Provide incentives to industry for sponsor/ donations to seminars, workshops, conferences etc.

xiii.   Encourage professionals of industry to do research and earn doctorate

7. **From Interaction to Partnership: A Step Ahead**

To avoid any ambiguity or loose use of terminologies, this paper tries to define first the catch phrase 'Public-Private Partnership'. A PPP is a contract between a public sector, institution/ municipality and a private party, in which private party assumes substantial financial, technical and operational risks in the design, financing, building and operation of a project. To appreciate this, it is necessary to see the contexts within which public-private partnership works.

Public Private Partnership basically refers to contractual agreements formed between a public agency and private sector entity that allow for greater private sector participation in the delivery of projects and services.

While private sector participation has been widely observed in many parts of OECD, Europe and Latin America, such participation has not been very much visible in other provision of public services like education and training in these countries and the rest of the world. It is only recently that private sector participation to public education and training is being given significant thought as an approach to extend the benefits of PPPs.

Public-Private partnerships provide a new dimension in taking up industry-institute interaction where risks and benefits could be shared. Having the key principles of privatization evolved from the dynamic implementation of PPPs, the education and training sector is seen to benefit from the capital and management expertise of the private sector once concrete projects are contracted.

There is no clear understanding on what does and what does not constitute a PPP. However, the value of PPPs in providing service provision and facilitating investments are the key things being emphasized when we talk about PPPs. In addition, PPPs also stress on the meaningful transfer of risk from the government to the private sector.

In the context of exploring the applicability of the principles of PPP in technical and professional education sector, we can infer that the transfer of adequate risks from the government to the private sector sets this type of cooperation apart from the typical interaction or partnership that most industries would not be interested to take part in this particular sector. In India, a very successful example of PPP in technical and vocational education is Sikkim Manipal University (SMU)- a partnership between government of Sikkim and Manipal Group, which is being successfully run throughout the

country. Similarly, we can have a number of such partnerships in times to come in India.

8. Characteristics, Benefits and Contributions of PPP

The major characteristics of PPP emphasize its ability to transform the role of the government from being a sole provider of infrastructure to a supervisor of quality. In some cases of PPPs, private sector takes the responsibility of building and designing an asset, while the government finances and operates once a project is completed. Another approach is where both the public and private sectors equally share in the responsibility of designing, building, financing and operating a project, which can increase efficiency and is regarded as the best justification for PPPs.

The term PPP can be utilized in a wide variety of arrangements in technical and professional education and training. To be successful, any undertaking by public-private institutions within the agreed parameters of partnership must result in delivering more with less. This means high quality for lower cost than any traditional training would incur. Political commitment and good governance are required while fiscal transparency must be strong.

9. Future Avenues

Global challenges and cut-throat competition even in local markets force industry to think innovative invariably. For the purpose, industry may need many inputs from academia. On the other hand, with growing technology led entrepreneurship, fast changing industrial environment and requirements, academia may face lots of difficulties to keep pace with such fast changes and to match their students' strengths with industry's parameters without being in closer interaction with industry. In such a situation what may be needed more is a support system to ensure a focused involvement of both institute and industry.

In future, if the academia could tilt focus of basic research towards application as well, interaction with industry would get further thrust. As a first step towards this direction, academia can involve industry personnel in research initiatives through academic programmes with flexible formats. Simultaneously, challenges and compulsions of global market are bound to force industry to see new dimensions in their research and development efforts. This calls for a complete paradigm shift from a capital intensive trading setup to a technology led entrepreneurial one. Industry in collaboration with the academia could set up a research-consortium to encourage research driven technology development. Such interactions and collaborations, if continue successfully for a good enough time to understand each other, there creates a scope for partnerships for mutual benefits. There are plenty of examples of such PPPs in various areas in the country, but PPPs in higher education, technical and vocational training and education is an emerging area full of scope and opportunities.

For brighter future of the both, there is a need to be a close interaction in between with their full strengths and build up successful partnerships for the very benefit of all the parties concerned directly or indirectly. They should always keep

identifying new areas of interaction/ collaboration or partnerships for mutual benefits.

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Merger of GTB with OBC – A Case Study

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Abstract:

Mergers and Acquisitions (M&A) are integral part of market strategy in today's world. This practice is not restricted to a certain geographical parameter, nor is it a new development. It is a global phenomenon, with an estimated 4,000 deals taking place every year around the world. A banking merger is just the same as the merger of two companies except that it involves banks. M&A in the banking sector may be in the form of amalgamation, absorption, consolidation, acquisition or takeover. The Government of India has sanctioned the scheme for amalgamation of the Global Trust Bank Ltd. with the Oriental Bank of Commerce. GTB is that it epitomizes the new generation private bank that came with the financial liberalization of the 1990s. The amalgamation came into force on August 14, 2004. It was also a forced merger under the direction of Reserve Bank of India (RBI) and Government of India (GOI). This research paper finds impact of Merger on the Financials of OBC and GTB on the basis of selected variables and various financial ratios prior and after M&A.

Mergers and Acquisitions (M&A) activity has become a part and parcel of the corporate and professional life. An economy depends on banking system and banks are trustees of public money. The depositors therefore, have more stakes in the welfare of banks than the shareholders. The ultimate goals of a bank are to increase its market power, become more diversified, reduce the risk of entering a new business and redefine the competitive edge through acquiring different streams of businesses. Consolidation will provide banks with new capabilities, technologies and products, help to overcome entry barriers, ensure immediate entry into new markets and lower operating costs through consolidation of resources.

In the present study efforts have been made to analyze the effects of M&A on the Financials of the Global Trust Bank Ltd. and Oriental Bank of Commerce (OBC+GTB) before and after merger. For this purpose various variables namely, capital, deposits, investments, advances, interest earned, interest paid, total income, total expenditure and net profit have been identified. In the analysis of variables figures for four year prior to merger and figures of variables for four years after the merger have been taken. Figures prior to merger are the total of value of variables of both amalgamating bank (the bank which loses its identity) and amalgamated bank (the bank which continues its existence).

Brief Background

Oriental Bank of Commerce (OBC) began its journey on February 19, 1943 from Lahore. After partition, the bank shifted its headquarters to Amritsar, and again its Head Office was shifted to Delhi. The Oriental Bank of Commerce was nationalized on 15th April 1980, and paved its way to count amongst the strongest banks in India. The bank has been ranked 377th biggest bank in the world by The Bankers (June 2009), London. The Bank has presently 1409 Branches and 61 Extension counters and 856 ATMs across the Country. Oriental Bank of Commerce continues to have one of the highest business per employee amongst Public Sector Banks. With High Capital Adequacy Ratio, Oriental Bank of Commerce is known be a consistent profit-making bank. The bank headquarter is situated in New Delhi.

Global Trust Bank (GTB), the most striking feature of GTB is that it epitomizes the new generation private bank that came with the financial liberalization of the 1990s. Manmohan Singh (then, the Finance Minister of India) inaugurated operations of the Bank on October 30, 1994 in Hyderabad. GTB was promoted by former Vysya Bank Chairman Ramesh Gelli, a Padmashree awardee, and his associates. In addition to the 40 per cent contribution by the core promoters, the Bank had managed to rope in International Finance Corporation (IFC) and Asian Development Bank (ADB) as the other major shareholders of the Bank. GTB was the first bank to open for business after the RBI opened up the sector for private sector investment. The bank headquarter was situated in Secunderabad.

Global Trust Bank Ltd., (GTB) was placed under an Order of Moratorium on July 24, 2004 The option available with the Reserve Bank was to compulsory merger under section 45 of the Banking Regulation Act, 1949. The Government of India has sanctioned the scheme for amalgamation of the Global Trust Bank Ltd. with the Oriental Bank of Commerce. The amalgamation came into force on August 14, 2004. It was also a forced merger under the direction of Reserve Bank of India (RBI) and Government of India (GOI).

Main Reasons/ Motives of Merger:

1. Substantial losses, Capital Inadequacy and a high level of NPA was main reason of merger.
2. Ramesh Gelli's search for high returns took the new generation private bank to the stock market, where its involvement in the speculative activities associated with the Ketan Parekh scam and its high exposure soon resulted in substantial losses.
3. It was clear that unless some drastic measures were taken, the bank was heading for closure.
4. RBI merged sick bank with healthy bank to protect depositor's interests.

Table 1: Financials of the Global Trust Bank Ltd. and Oriental Bank of Commerce at the time of Merger (2003-04)

S.No.	Financial Indicators of Banks	Global Trust Bank Ltd. (Rs. in crore)	Oriental Bank of Commerce (Rs. in crore)
1.	Capital	00121.36	00192.54
2.	Deposits	06399.02	35673.50
3.	Investments	02118.42	16794.11
4.	Advances	02245.47	19680.76
5.	Total assets	07203.15	41006.55
6.	Net Profit	(-) 00812.39	00686.06

Source: Compiled from Balance Sheet of Respective Banks.

Objectives of the Study:

The objectives set for the study are:

1. To evaluate the effectiveness of M&A in the case of OBC+GTB on the basis of selected variables prior and after M&A.
2. To make a comparison of the performance of OBC+GTB prior and after the merger on the basis of various financial ratios.

Data Used: The present study is based on secondary data published by the Reserve Bank of India, Annual Report of Public Sector Banks, Trend and Progress of Banking in India, Study Reports of various Committees setup by Government of India etc. Data have also been collected from the websites of various government and non-government agencies.

Methods of Analysis: In the course of analysis, collected data have been analyzed by using different financial and statistical techniques. Financial technique includes ratio analysis and statistical techniques include predicted values of identified variables. For the processing of the data, Excel and SPSS-10 package in computer have been used at different places.

Hypothesis: The present work is essentially based on secondary sources; hence hypothesis is being tested by using published materials. For the purpose of study Null Hypothesis is that there is no difference in mean value of selected variables before merger and after merger and Alternate Hypothesis is that there is difference in mean value of selected variables before merger and after merger.
Let Mean value before merger be X1 and Mean value after merger be X2

Ho: X1 = X2 Null Hypothesis: There is no difference in mean value of selected variables before merger and after merger.

H1:X1≠X2 Alternate Hypothesis: There is difference in mean value of selected Variables before merger and after merger.

(A) Analysis of Predicted values: The predicted values of identified variables have been calculated by using regression equation $(y = a + bx)$ and presented in tables and charts. In the analysis of variables figures for four year prior to merger and figures of variables for four years after the merger have been taken. Figures prior to merger are the total of value of variables of both

amalgamating bank (the bank which loses its identity) and amalgamated bank (the bank which continues its existence).

In order to judge the effectiveness of mergers and acquisitions 10 variables namely, capital, deposits, investments, advances, interest earned, interest paid, total income, total expenditure, total assets and net profit have been identified.

(i) Capital: Capital represents the resources contributed by owners. The capital includes share capital and undistributed profits. The growth of capital indicates capacity of banks to attract deposits, lend to the business unit and to borrow from the public. One of the aims of merger is to increase the capital base of the banks. It is expected that the banks after merger would have sufficient capital base.

Table 2 shows actual capital and predicted value of OBC and GTB over the period of study. The difference of capital and its trend value is negative throughout study period except 2000 and 2001. The positive difference in 2000 is very large while the negative difference is very large in 2008. The actual capital is lower than predicted value before merger except in 2000 and 2001 whereas it is higher than predicted value after merger which reflects the effective operating efficiency during post merger period.

Table-2 Actual and Predicted Values of Capital of OBC and GTB (During 2000 to 2008)		
Year	Capital (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	313	296
2001	313	308
2002	313	321
2003	313	333
2004@	313	345
2005	313	358
2006	250	370
2007	250	383
2008	250	395

Source: Extracted and computed from the annual reports of RBI and IBA

Y*: Regression equation $(y = a + bx)$
@-: Year of Merger

Figure-1 shows the actual and predicted value of capital. The curve of actual total assets shows upward sloping trend. Further, there is significant difference between actual value and predicted value after 2005. The curve of actual capital is lower than the curve of trend through out study period.

Figure-1
Capital and its Predicted Values of OBC and GTB
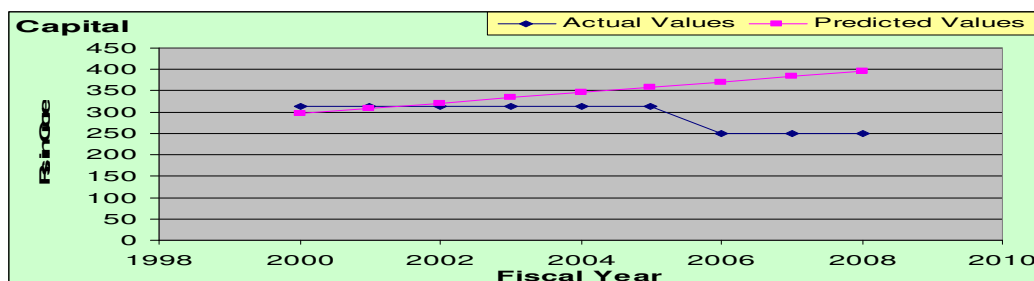
(ii) Deposits: The important element of conventional banking business is to accept deposits from the customers. One of the important sources of lending money is deposit. Without deposits the bank cannot provide the loan in different sectors. For the purpose the study the deposits refer to the bank balances in different accounts.

Table 3 portrays the actual value of deposits and its predicted value of OBC and GTB during study period. The difference of deposits and its trend value is negative in the year 2002, 2003 and 2004 while these are positive in the year 2000, 2001, 2005, 2006, 2007 and 2008. The positive difference in 2008 is very large while the negative difference is very large in 2003.

| Table-3 Actual and Predicted Values of Deposits of OBC and GTB (During 2000 to 2008)		
Year	Deposits (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	28294	27814
2001	32414	31518
2002	34931	35223
2003	36730	38927
2004@	42072	42631
2005	47850	46336
2006	50197	50040
2007	63995	53744
2008	77856	57449

**Source: Extracted and computed from the annual reports of RBI and IBA**
Y*: Regression equation $(y = a + bx)$
@-: Year of Merger

The deposits are lower than predicted value before merger except in 2000 and 2001 whereas it is higher than predicted value after merger except in 2004. With regard to the deposits the performance of the Oriental Bank of Commerce has found good during post merger period.

Figure 2 shows the actual and predicted value of deposits. The curve of actual deposits shows increasing trend. Further, there is no significant difference between actual value and predicted value till 2006. The curve of actual deposits is higher than the curve of trend value in 2000, 2001, 2005, 2006, 2007 and 2008.

Figure-2
Deposits and its Predicted Values of OBC and GTB
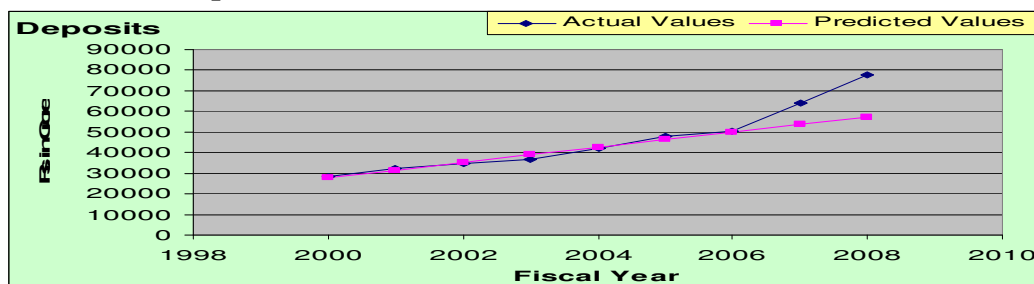
(iii) Investments: Investment refers to the investment of funds in the different areas such as government securities, subsidiary companies, mutual funds and others which are shown in the assets side of balance sheet of banks. The main purpose of such investment is either to earn a return or/ and to control another company. The investment helps to increase the total revenue and profit of the banking industry.

Table-4 demonstrates actual value of investments and its predicted value of OBC and GTB during the period under review. The difference of investments and its trend value is negative in the year 2000 and 2006 while these are positive in the year 2001 to 2005 and 2007, 2008. The positive difference in 2008 is very large while the negative difference is very large in 2006.

Table-4 Actual and Predicted Values of Investments of OBC and GTB (During 2000 to 2008)		
Year	Investments (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	14485	15484
2001	16163	15971
2002	16624	16458
2003	17279	16945
2004@	18912	17433
2005	18342	17920
2006	16818	18407
2007	19808	18894
2008	23950	19382

Source: Extracted and computed from the annual reports of RBI and IBA

Y*: Regression equation $(y = a + bx)$
@-: Year of Merger

[62]

The actual value of investments is higher than predicted value before merger except in 2000 and it is higher than predicted value after merger except in 2006. However, it has been found that the performance of Oriental Bank of Commerce with regard to the investments has been improved during post merger period.

Figure-3 shows the actual and predicted value of investments. The curve of actual investments shows increasing trend except in 2006. The curve of actual investments is higher than the curve of trend value in 2001 to 2005 and 2007, 2008.

Figure-3
Investment and its Predicted Values of OBC and GTB
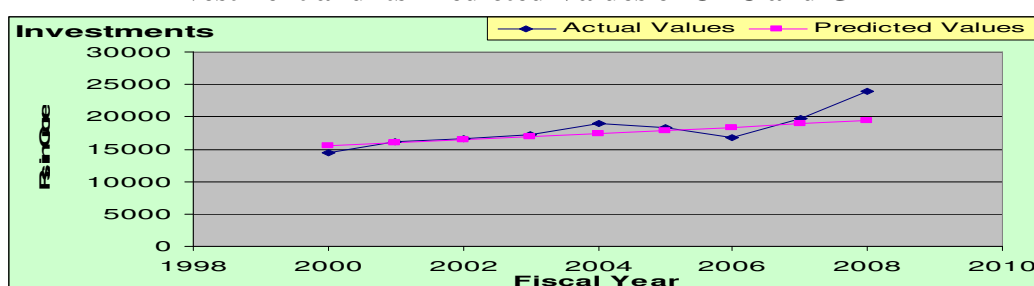
(iv) Advances: Advances is the another important aspect of conventional banking operations. In this study total advances include term advances, short term advances, advances to assisted company, advances to priority sector, advances in public sector etc. Table 5 presents the actual value of advances and its predicted value of OBC and GTB over a period of study. The difference of advances and its trend value is negative in the year 2002, 2003, 2004 and 2005 while these are positive in the year 2000, 2001 and 2006, 2007, 2008. The positive difference in 2008 is very large while the negative difference is very large in 2004. The actual advances are higher than predicted value after merger except in 2005. The result shows that the performance of the Oriental Bank of Commerce has increased significantly during post merger period.

	Table-5 Actual and Predicted Values of Advances of OBC and GTB (During 2000 to 2008)	
Year	Advances (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	12536	11226
2001	15176	14372
2002	17190	17519
2003	18953	20665
2004@	21926	23812
2005	25299	26958
2006	33577	30105
2007	44138	33251
2008	54565	36398

**Source: Extracted and computed from the annual reports of RBI and IBA**

Y*: Regression equation (y = a + bx)
@-: Year of Merger

Figure-4 shows the actual and predicted value of advances. The curve of actual total assets shows upward trend. Further, there is

no significant difference between actual value and predicted value till 2005. The curve of actual advances is higher than the curve of trend value in 2000, 2001 and 2006 to 2008.

Figure-4
Advances and its Predicted Values of OBC and GTB
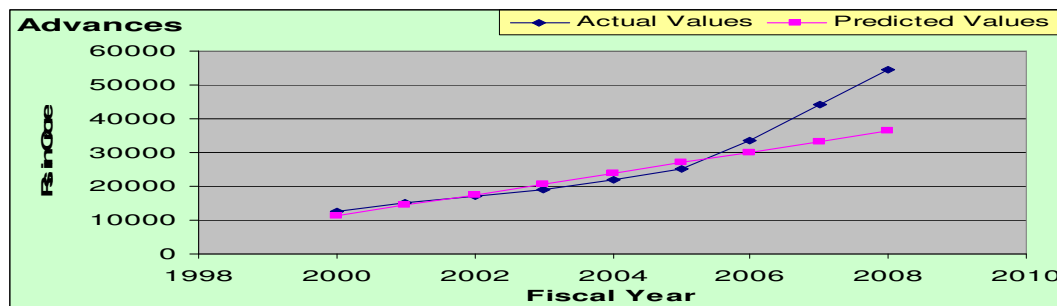
(v) Interest Earned: One of the main sources of income of banking industry is the interest earned. The interest income should be increased after merger. Table 6 illustrates the actual value of interest income and its predicted value of OBC and GTB during the period under review. The difference of interest income and its trend value is negative in the year 2000, 2004 and 2005 while these are positive in the year 2001, 2002, 2003, 2006, 2007 and 2008. The positive difference in 2008 is very large while the negative difference is very large in 2005. The result shows that the good operating efficiency of Oriental Bank of Commerce during after merger in comparison to before merger.

        Figure 5 shows the actual and predicted value of interest income. The curve of actual total income shows an increasing trend. It increases sharply after 2005. The curve of actual interest income is

higher than the curve of trend value in 2001, 2002, 2003, 2006, 2007 and 2008.

Table-6 Actual and Predicted Values of Interest Income of OBC and GTB (During 2000 to 2008)		
Year	Interest Income (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	3104	3376
2001	3656	3475
2002	3764	3574
2003	3834	3673
2004@	3654	3771
2005	3572	3870
2006	4119	3969
2007	5164	4068
2008	6838	4166

Source: Extracted and computed from the annual reports of RBI and IBA
Y*: Regression equation (y = a + bx)
@-: Year of Merger

Figure-5.50
Interest Earned and its Predicted Values of OBC and GTB
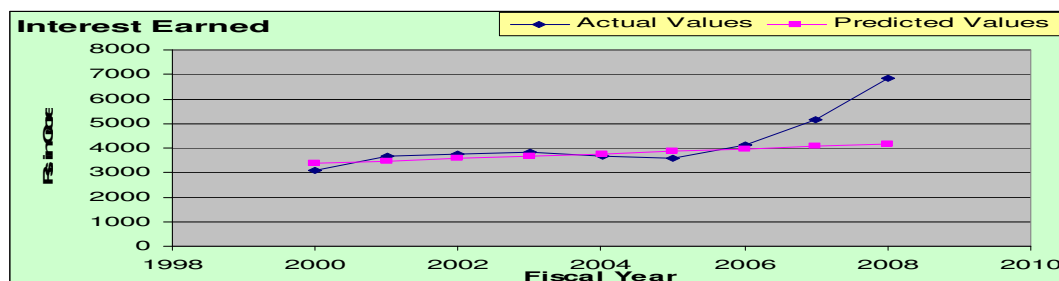
 (vi) Interest Expenditure: Interest provided to customer in different saving and fixed deposits accounts and interest of debt capital is the interest expenditure. The interest expenditure can be minimized by increasing the operating efficiency. The operating efficiency can be increased by merger and acquisition.

Table-7 exhibits the actual value of interest expenditure and predicted value of OBC and GTB over the period of study. The difference of interest expenditure and its trend value is negative in the year 2003 to 2007 while these are positive in the year 2000, 2001, 2002, and 2008. The positive difference in 2008 is very large while the negative difference is very large in 2005. The actual interest expenditure is lower than predicted value after merger except in 2008 whereas it is higher than predicted value before merger except in 2003. The result shows that the good performance of the Oriental Bank of Commerce after merger except 2008.

Table-7 Actual and Predicted Values of Interest Expenditure of OBC and GTB (During 2000 to 2008)		
Year	Interest Expenditure (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	2252	1982
2001	2665	2200
2002	2704	2418
2003	2607	2637
2004@	2279	2855
2005	2048	3073
2006	2514	3292
2007	3473	3510
2008	5156	3728

Source: Extracted and computed from the annual reports of RBI and IBA

Y*: Regression equation ($y = a + bx$)
@-: Year of Merger

Figure-6 shows the actual and predicted value of interest expenditure. The curve of actual interest paid shows a fluctuating trend. It increases slightly till 2002 and it starts to decline up to 2005 after that it

begins to rise. The curve of actual interest expenditure is higher than the curve of trend value in 2001, 2002, 2003 and 2006.

Figure-6
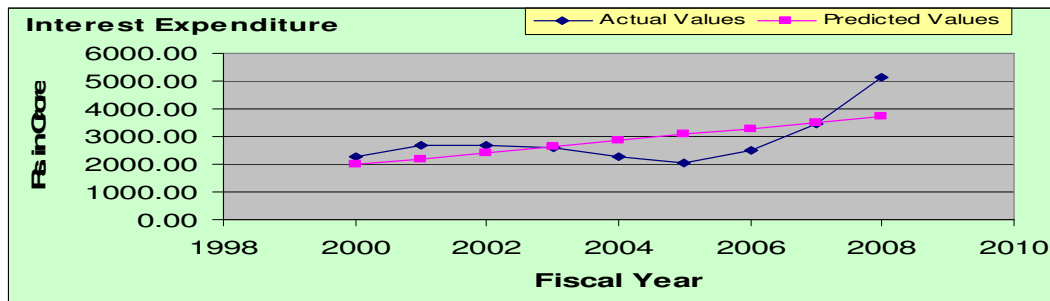**Interest Paid and its Predicted Values of OBC and GTB**

(vii) Total Income: The revenue earned from the different sources is total income. In the case of banking industry interest income is the main income. However, for the purpose of this study, total income refers to interest received, dividend received, security transactions, exchange transaction, commission and brokerage etc. it is expected that the total income will be increased after the merger and acquisition.

Table-8 delineates the actual value of total income and predicted value of OBC and GTB during the study period. The difference of total income and its trend value is negative in the year 2000 and 2005 while these are positive in the year 2001, 2002, 2003, 2004, 2006, 2007 and 2008. The positive difference in 2008 is very large while the negative difference is very large in 2005. The actual total income is higher than predicted value through out the study period except in 2000 and 2005.

Table-8 Actual and Predicted Values of Total Income of OBC and GTB (During 2000 to 2008)		
Year	Total Income (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	3558	3918
2001	4088	4039
2002	4467	4160
2003	4566	4281
2004@	4537	4402
2005	4077	4523
2006	4672	4644
2007	5768	4765
2008	7454	4886

Source: Extracted and computed from the annual reports of RBI and IBA

Y*: Regression equation (y = a + bx)

@-: Year of Merger

With regard to the total income, effective performance of the Oriental Bank of Commerce has observed during post merger period.

Figure-7 shows the actual and predicted value of total income. The curve of actual total income shows a fluctuating trend. It increases slightly till 2004 and it decreases

in 2005 after that it begins to rise sharply. The curve of actual total income is higher than the curve of trend value in 2001, 2002, 2003, 2004, 2006, 2007 and 2008.

Figure-7

Total Income and its Predicted Values of OBC and GTB
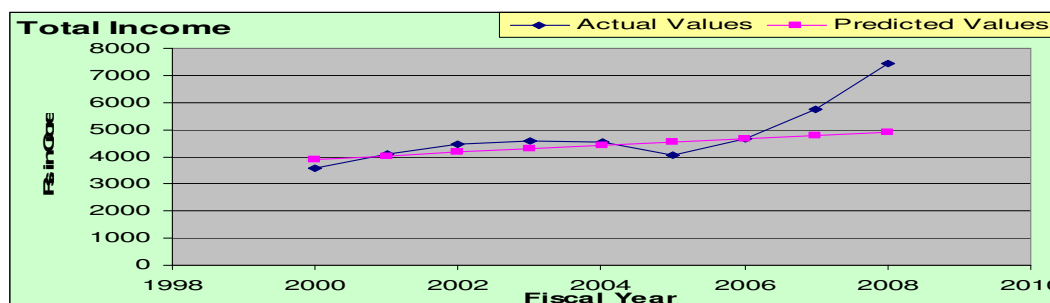
(viii) Total Expenditure: The expense incurred to operate the bank is the total expenditure. The total expenditure should be controlled to increase the profitability. By increasing the operating efficiency the total expenditure can be reduced. It is possible by M&A.

Table-9 displays the actual value of total expenditure and its predicted value of OBC and GTB during the study period. The difference of total expenditure and its trend value is negative in the year 2000, 2004 and 2005 while there are positive in the year 2001, 2002, 2003, 2006, 2007 and 2008. The positive difference in 2008 is very large while the negative difference is very large in 2000. The total expenditure is higher than predicted value after merger except in 2005. It has found that the poor performance of the Oriental Bank of Commerce regarding the total expenditure during after merger.

	Table-9 Actual and Predicted Values of Total Expenditure of OBC and GTB (During 2000 to 2008)	
Year	Total Expenditure (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	2804	3118
2001	3353	3142
2002	3402	3167
2003	3367	3191
2004@	3083	3216
2005	3105	3240
2006	3868	3265
2007	4941	3289
2008	6613	3314

Source: Extracted and computed from the annual reports of RBI and IBA

Y*: Regression equation $(y = a + bx)$

@-: Year of Merger

Figure-8 shows the actual and predicted value of total expenditure. The curve of actual total expenditure shows a fluctuating trend. It increases till 2002 and it starts to decline up to 2005 after that it begins to rise

sharply. The curve of actual value is higher than the curve of trend value in 2001, 2002, 2003, 2006, 2007 and 2008.

Figure-8

Total Expenditure and its Predicted Values of OBC and GTB
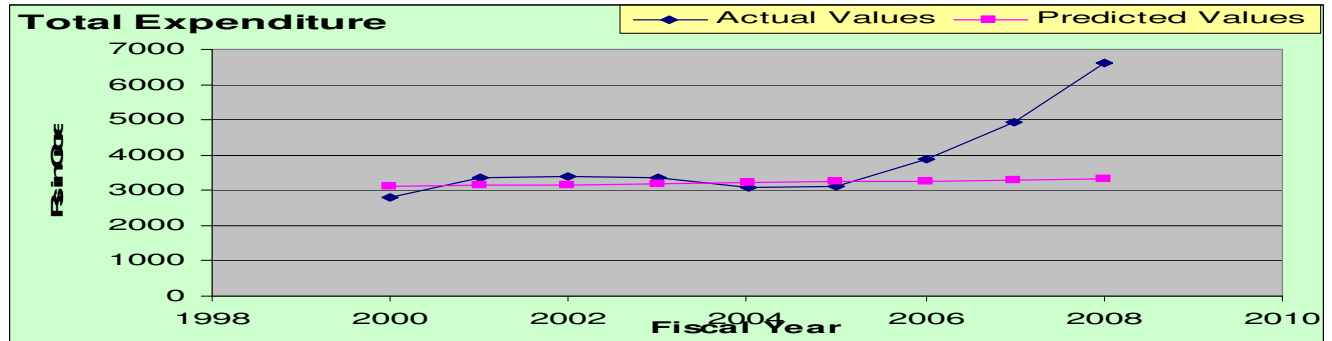
(ix) Total Assets: Assets represent economic resources that are the valuable possessions owned by a firm. Assets are mainly used to generate earnings. The total assets refer to net fixed assets and current assets. One aim of business strategy namely, merger and acquisition is, the maximization of total assets of merged banks i.e., firms' ability to produce large volume of sales revenue. It is expected that the bank units after merger would function efficiently.

Table-10 depicts the actual value of total assets and predicted value of OBC and GTB over the period under study. The difference of total assets and its trend value is negative in the year 2002, 2003 and 2004 while these are positive in the year 2000, 2001, 2005, 2006, 2007 and 2008. The positive difference in 2008 is very large while the negative difference is very large in 2003. The actual value of total assets is lower than predicted value before merger except in 2000 and 2001 whereas it is higher than predicted value after merger. The result shows that the good performance of the Oriental Bank of Commerce during post merger period with regard to total assets.

Table-10

Actual and Predicted Values of Total assets of OBC and GTB

(During 2000 to 2008)

Year	Total assets (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	32072	31121
2001	36544	35560
2002	39570	39998
2003	41653	44437
2004@	48209	48876
2005	54069	53314
2006	58937	57753
2007	73936	62191
2008	90705	66630

**Source: Extracted and computed from the annual reports of RBI and IBA**

Y*: Regression equation (y = a + bx)

@-: Year of Merger

Figure-9 shows the actual and predicted value of total assets. The curve of actual total assets shows increasing trend. Further, there is no significant difference between actual values and predicted values till 2006. The curve of actual value is higher than the

curve of trend value in 2000, 2001, 2005, 2006, 2007 and 2008.

Figure-9

Total Assets and its Predicted Values of OBC and GTB
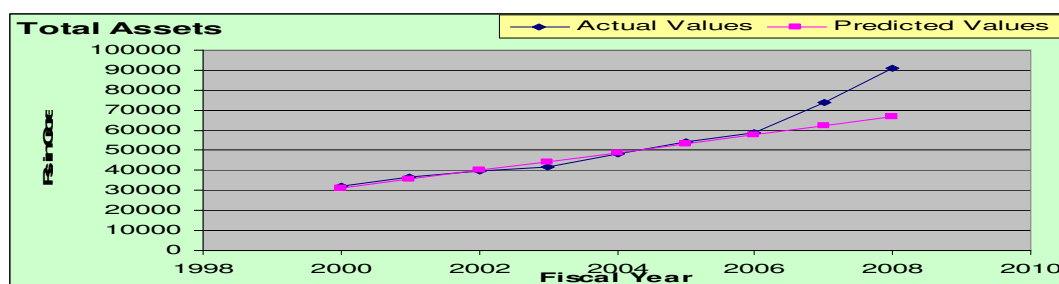
(x) Net Profit: The profit is an indicator of the efficiency with which the business operations are carried out by corporate sector. The poor operational performance may result in poor sales leading to poor profits. The merger intends to boost profits through elimination of overlapping activities and to ensure savings through economies of scale. The amount of profit may be increased through reduction in overheads, optimum utilization of facilities, raising funds at lower cost and expansion of business.

Table-11 discloses the actual value of net profit and its predicted value of OBC and GTB during the period under review. The difference of profit and its trend value is negative in the year 2001, 2002, 2003, 2004 and 2006 while these are positive in the year 2000, 2005, 2007 and 2008. The positive difference in 2005 is very large while the negative difference is very large in 2004. The actual net profit is lower than predicted value before merger except in 2000 whereas it is higher than predicted value after merger except in 2006. It has found that the good performance of the Oriental Bank of Commerce after merger.

	Table-11	
	Actual and Predicted Values of Net Profit of	
	OBC and GTB (During 2000 to 2008)	
Year	Net Profit (Rs. in Crore)	Y* Predicted Values (Rs. in Crore)
2000	387	301
2001	283	360
2002	360	419
2003	184	477
2004@	(-)126	536
2005	726	594
2006	557	653
2007	826	711
2008	840	770

Source: Extracted and computed from the annual reports of RBI and IBA
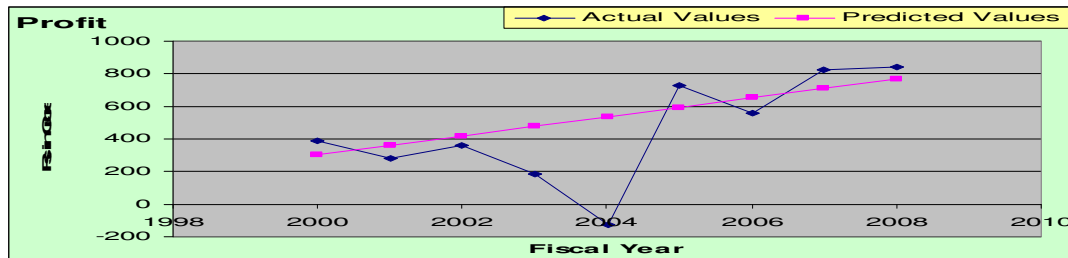
Y*: Regression equation $(y = a + bx)$
@-: Year of Merger

Figure-10 shows the actual and predicted value of net profit. The curve of actual net profit shows a fluctuating trend. It declined sharply in the year 2004. The curve of actual net profit is higher than the curve of trend value in 2000, 2004, 2005, 2007 and 2008.

Figure-10
Net Profit and its Predicted Values of OBC and GTB

(B) Ratio Analysis: Ratio analysis is regarded as one of the best tools in analyzing and comparing the time series accounting data of different firms. That is why; it has been used in the present study. All efforts are towards judging whether merger of banks have been fruitful or not and benefit of synergies has been obtained or not. Data for four years prior to merger is the total of value of both amalgamating bank and amalgamated bank. The ratios that have been employed in this study are: i) Deposits to Total Assets Ratio, ii) Deposits to Investment Ratio, iii) Total Income to Total Assets Ratio, iv) Total Income to Total Capital Ratio, v) Interest Income to Interest Expenditure Ratio, vi) Profit to Total Assets Ratio, vii) Profit to Total Capital Ratio, viii) Advances to Deposits Ratio, ix) Advances to Total Assets Ratio and x) Total Income to Total Expenditure Ratio.

1. **Deposits to Total Assets Ratio:** Table-12 shows deposits to total assets ratio of OBC and GTB during the period under the review. The Table reveals that the average value of deposits to total assets ratio is 88%. The deposits to total assets ratio is higher than average value in the year 2000,2001,2002,2003 and 2005 while deposits to total assets ratio is lower than average value in year 2004,2006,2007 and 2008.

Table 12
Ratio of Deposits to Total Assets of OBC and GTB
(During 2000 to 2008)

Year	Deposits (Rs. In Crore)	Total assets (Rs. In Crore)	Deposits to Total Assets Ratio (In %)
2000	28294	32072	88
2001	32414	36544	89
2002	34931	39570	88
2003	36730	41653	88
2004	42072	48209	87
2005	47850	54069	88
2006	50197	58937	85
2007	63995	73936	87
2008	77856	90705	86
Average	46037	52855	88

**Source: Extracted and computed from the annual reports of RBI & IBA**

The deposits to total assets ratio is the highest in 2001 while deposits to total assets ratio is the lowest in 2006. The deposits to total assets ratio is equal and higher than average value pre merger period whereas it is lower than average value post merger period except in 2005. With regard to deposits to total assets ratio, the better performance has found during pre merger period.

Figure-11 shows a curve the deposits to total assets ratio. The curve of deposits to total assets ratio shows downward sloping trend.

Figure-11
Deposits to Total Assets Ratio of OBC and GTB
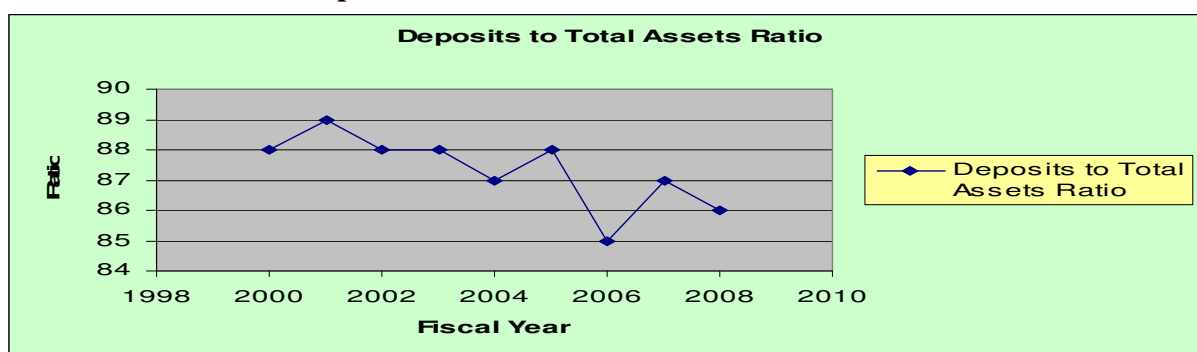
2. **Deposits to Investment Ratio:** Table-13 illustrates deposits to investments ratio of OBC and GTB during the period under the review. The Table shows that the average value of total deposits to investments ratio is 249%. Further, the table depicts that the deposits to investments ratio is higher than average value in the year 2005,2006,2007 and 2008 while deposits to investments ratio is lower than average value in year 2000 to 2004. The deposits to investments ratio is the highest in 2008 while deposits to investments ratio is the lowest in 2000. Further, deposits to investments ratio is higher than average value after merger except.

Table 13 Ratio of Deposits to Investment of OBC and GTB (During 2000 to 2008)			
Year	Deposits (Rs. In Crore)	Investments (Rs. In Crore)	Deposits to Investment Ratio (In %)
2000	28294	14485	195
2001	32414	16163	201
2002	34931	16624	210
2003	36730	17279	213
2004	42072	18912	222
2005	47850	18342	261
2006	50197	16818	298
2007	63995	19808	323
2008	77856	23950	325
Average	46037	18042	249

Source: Extracted and computed from the annual reports of RBI & IBA

[71]

2004, whereas it is lower than average value before merger. It has been found that the bank is able to collect more deposits during the post merger period.

Figure-12
Deposits to Investments Ratio of OBC and GTB
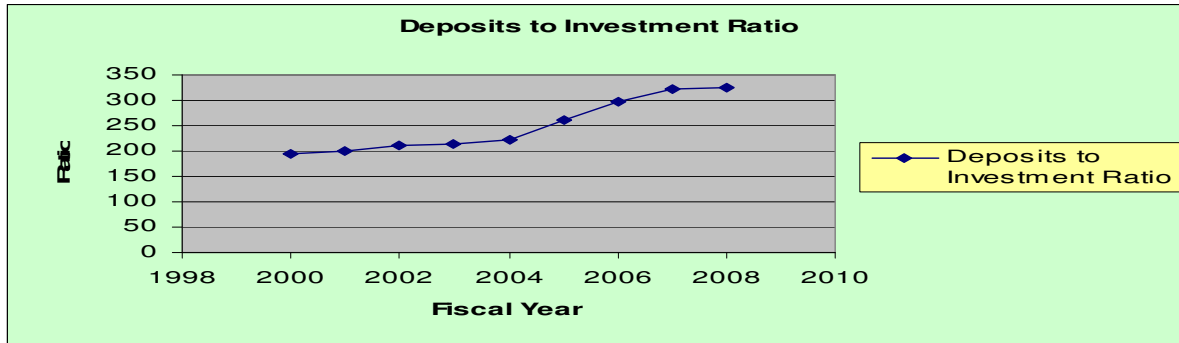
Figure-12 shows a curve of deposits to investments ratio. The curve of deposits to investments ratio shows an increasing trend. The increasing rate is higher during the post merger period than the pre merger period.

3. **Total Income to Total Assets Ratio:** Table 14 demonstrates total income to total assets ratio of OBC and GTB during the study period. The Table clearly displays that the average value of total income to total assets ratio is 10%. In addition, Table shows that the total income to total assets ratio is higher than average value in the year 2000, 2001, 2002 and 2003 while total income to total assets ratio is lower than average value in year 2004, 2005, 2006, 2007 and 2008. Moreover, the total income to total assets ratio is higher than average value pre merger period whereas it is lower than average value post merger period. The total income to total assets ratio

has decreased which indicates an ineffective performance during the post merger period.

Table 14 Ratio of Total Income to Total Assets of OBC and GTB (During 2000 to 2008)			
Year	Total Income (Rs. In Crore)	Total Assets (Rs. In Crore)	Total Income to Total Assets Ratio (In %)
2000	3558	32072	11
2001	4088	36544	11
2002	4467	39570	11
2003	4566	41653	11
2004	4537	48209	09
2005	4077	54069	08
2006	4672	58937	08
2007	5768	73936	08
2008	7454	90705	08
Average	4798	52855	10

Source: Extracted and computed from the annual reports of RBI & IBA

[72]

Figure-13 shows a curve of total income to total assets ratio of OBC and GTB during the period under the review. The curve of total income to total assets ratio shows downward sloping trend. The curve of total income to total assets ratio is constant till 2003 after that it starts to decline.

Figure-13
Total Income to Total Assets Ratio of OBC and GTB
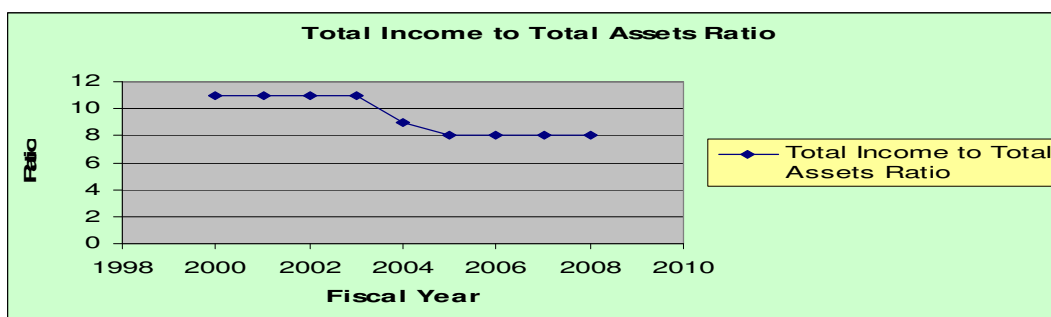
4. **Total Income to Total Capital Ratio:** The Table 15 exhibits total income to total capital ratio of OBC and GTB during the period under the review. The Table clearly discloses that the average value of total income to total capital ratio is 1689%. Further, the total income to total capital ratio is higher than average value in the year 2006, 2007 and 2008 while total income to total capital ratio is lower than average value in year 2000 to 2005. The total income to total capital ratio is the highest in 2008 while total income to total capital ratio is the lowest in 2000.It has been observed that the profitability of OBC has been increased during the post merger period.

Table 15 Ratio of Total Income to Total Capital of OBC and GTB (During 2000 to 2008)			
Year	Total Income (Rs. In Crore)	Total Capital (Rs. In Crore)	Total Income to Total Capital Ratio (In %)
2000	3558	313	1134
2001	4088	313	1303
2002	4467	313	1423
2003	4566	313	1455
2004	4537	313	1446
2005	4077	313	1299
2006	4672	250	1865
2007	5768	250	2302
2008	7454	250	2975
Average	4798	292	1689

Source: Extracted and computed from the annual reports of RBI & IBA

Figure 14 shows a curve of total income to total capital ratio which indicates the increasing trend. In addition, the curve of total income to capital ratio shows a continuous increasing trend after 2005.

Figure-14
Total Income to Total Capital Ratio of OBC and GTB
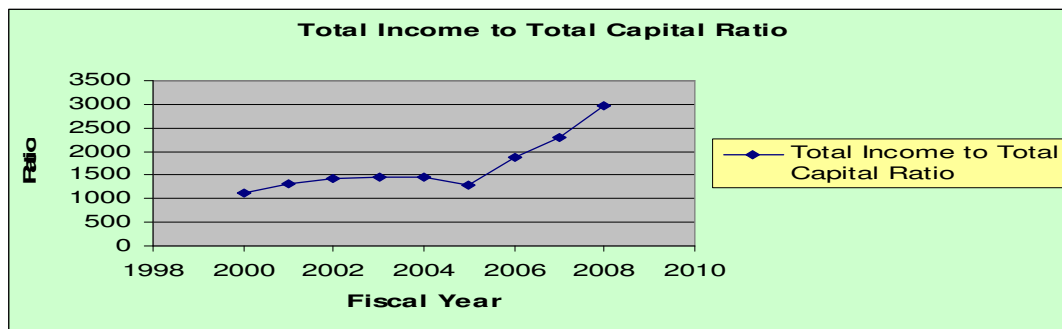
5. **Interest Income to Interest Expenditure Ratio:** Interest income to interest expenditure ratio of OBC and GTB is presented in Table 16. The Table clearly shows that the average value of interest income to interest expenditure ratio is 149 %. The interest income to interest expenditure ratio is higher than average value in the year 2004, 2005 and 2006 while interest income to interest expenditure ratio is lower than average value in year 2000, 2001,2002,2003,2007 and 2008. In 2007 the interest income to interest expenditure ratio is equal to average value. The interest income to interest expenditure ratio is the highest in 2005 while interest income to interest expenditure is the lowest in 2008. The interest income to interest expenditure ratio is higher than average value after merger whereas it is lower than average value before merger. The interest income to

interest expenditure ratio has increased during the post merger period except 2008 which indicates that the bank is able to increase the operating efficiency.

Table 16 Ratio of Interest Income to Interest Expenditure of OBC and GTB (During 2000 to 2008)			
Year	Interest Income (Rs. In Crore)	Interest Expenditure (Rs. In Crore)	Interest Income to Interest Expenditure Ratio (In %)
2000	3104	2252	138
2001	3656	2665	137
2002	3764	2704	139
2003	3834	2607	147
2004	3654	2279	160
2005	3572	2048	174
2006	4119	2514	164
2007	5164	3473	149
2008	6838	5156	133

Average	4189	2855	149

Source: Extracted and computed from the annual reports of RBI & IBA

Figure-15
Interest Income to Interest Expenditure Ratio of OBC and GTB

Figure-15 shows a curve of interest income to interest expenditure ratio which indicates an upward sloping trend. The curve of interest income to interest expenditure actual total income shows a continuous increasing trend till 2005 after that it starts to declines.

6. Net Profit to Total Capital Ratio: Table-17 portrays net profit to total capital ratio of OBC and GTB during the study period. The Table depicts that the average value of net profit to total capital ratio is 162%. The net profit to total capital ratio is higher than average value in the year 2005, 2006, 2007, and 2008 while net profit to total capital ratio is lower than average value in year 2000 to 2004. The net profit to total capital ratio is the highest in 2008 while net profit to total capital ratio is the lowest in 2004. With regard to net profit to total capital ratio, it has found that the OBC is able to increase the profitability during the post merger period.

Figure-16 shows a curve of net profit to total capital ratio which indicates a highly fluctuating trend. The curve of net profit to total capital ratio decreases till 2004 after that it increases sharply in 2005, further, increases steadily.

Table 17 Ratio of Net Profit to Total Capital of OBC and GTB (During 2000 to 2008)			
Year	Net Profit (Rs. In Crore)	Total Capital (Rs. In Crore)	Net Profit to Total Capital Ratio (In %)
2000	387	313	123
2001	283	313	090
2002	360	313	115
2003	184	313	059
2004	(-) 126	313	(-) 040
2005	726	313	231
2006	557	250	222
2007	826	250	330
2008	840	250	335
Average	448	292	162

Source: Extracted and computed from the annual reports of RBI & IBA

Figure-16
**Net Profit to Total Capital Ratio of OBC and GTB**

7. Net Profit to Total Assets Ratio: Table-18 shows net profit to total assets ratio of OBC and GTB during the period under the review. The Table clearly discloses that the average value of net profit to total assets ratio is 0.82 %. The net profit to total assets ratio is higher than average value in the year 2000, 2002, 2005, 2006, 2007 and 2008 while net profit to total assets ratio is lower than average value in year 2001, 2003 and 2004. The net profit to total assets ratio is the highest in 2005 while net profit to total assets ratio is the lowest in 2004. The net profit to total assets ratio is higher than average value after merger except 2004 whereas it is higher than average value before merger except in 2000 and 2002. With reference to net profit to total assets ratio, it has found that the efficiency has increased by the OBC during post merger period.

Figure-17 shows a curve of return on capital ratio. The figure shows highly fluctuating trend. The curve of net profit to total assets ratio decreases till 2004 after that it increases sharply in 2005. Further, it declines slightly.

	Table 18 Ratio of Net Profit to Total Asset of OBC and GTB (During 2000 to 2008)		
Year	Net Profit (Rs. In Crore)	Total Assets (Rs. In Crore)	Net Profit to Total Assets Ratio (In %)
2000	387	32072	1.21
2001	283	36544	0.77
2002	360	39570	0.91
2003	184	41653	0.44
2004	(-) 126	48209	(-) 0.26
2005	726	54069	1.34
2006	557	58937	0.95
2007	826	73936	1.12
2008	840	90705	0.93
Average	448	52855	0.82

Source: Extracted and computed from the annual reports of RBI & IBA

Figure-17
Net Profit Total Asset Ratio of OBC and GTB
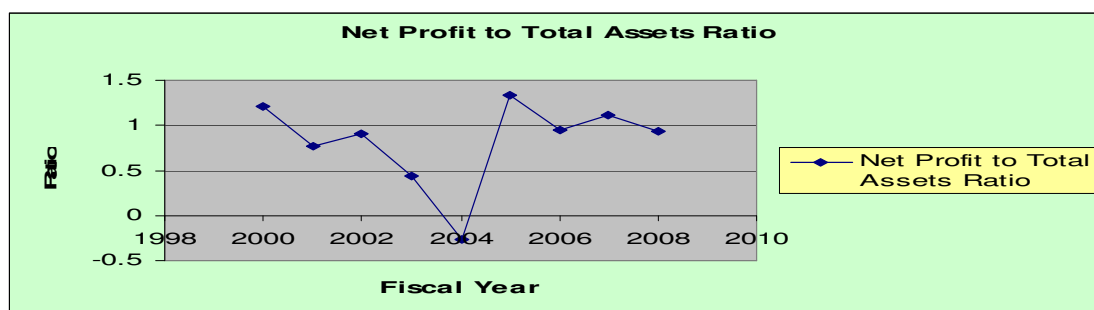
8. Advances to Deposits Ratio: Table-19 illustrates advances to deposits ratio of OBC and GTB during the period under the review. The Table clearly discloses that the average value of advances to deposits ratio is 55%. The advances to deposits ratio is higher than average value in the year 2006,2007 and 2008 while advances to deposits ratio is lower than average value in year 2000 to 2005. The advances to deposits ratio is the highest in 2008 while advances to deposits ratio is the lowest in 2000. The advances to deposits ratio is higher than average value during after merger period whereas it is lower than average value during the before merger period. It has found that the performance of the OBC regard to advances to deposits ratio has increased during post merger period.

Figure 18 shows a curve of advances to deposits ratio. The figure shows an increasing trend. The curve of advances to deposits ratio increases continuously during the study period.

			Table 19 Ratio of Advances to Deposits of OBC and GTB (During 2000 to 2008)		
Year	Advances (Rs. In Crore)	Deposits (Rs. In Crore)	Advances to Deposits Ratio (In %)
2000	12536	28294	44
2001	15176	32414	47
2002	17190	34931	49
2003	18953	36730	52
2004	21926	42072	52
2005	25299	47850	53
2006	33577	50197	67
2007	44138	63995	69
2008	54565	77856	70
Average	27040	46037	55

Source: Extracted and computed from the annual reports of RBI & IBA

Figure-18
Advances to Deposits Ratio of OBC and GTB
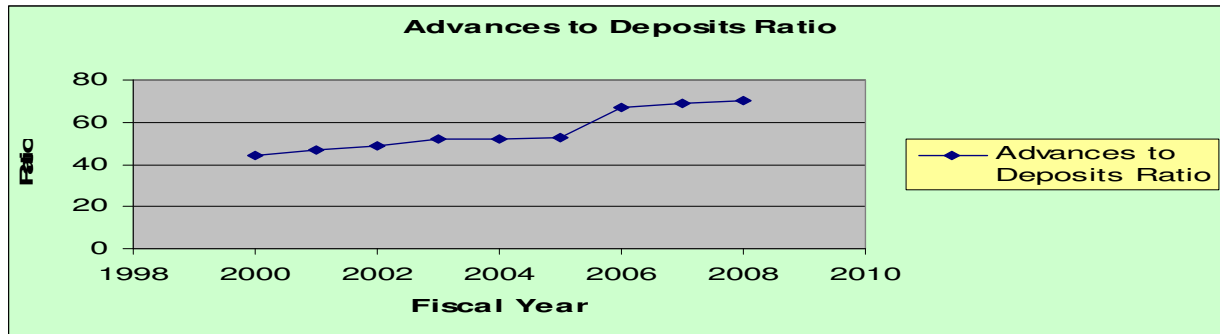
9. Advances to Total Assets Ratio: Table-20 displays advances to total assets ratio of OBC and GTB during the period under the review. The Table reveals that the average value of advances to total assets ratio is 48%. The advances to total assets ratio is higher than average value in the year 2006,2007 and 2008 while advances to total assets ratio is lower than average value in year 2000 to2005. The advances to total assets ratio is the highest in 2007 and 2008 while return on total assets ratio is the lowest in 2000. The advances to total assets ratio is higher than average value after merger whereas it is lower than average value before merger. With regard to advances to total assets ratio, it has found that the performance has increased during post merger period except in 2004 and 2005.

Figure-19 shows a curve of advances to total assets ratio. The figure 7.54 shows an increasing trend. The curve of advances to total assets ratio increases continuously during the period under the review except 2004 and 2005.

Table 20 Ratio of Advances to Total Assets of OBC and GTB (During 2000 to 2008)			
Year	Advances (Rs. In Crore)	Total assets (Rs. In Crore)	Advances to Total Assets Ratio (In %)
2000	12536	32072	39
2001	15176	36544	42
2002	17190	39570	43
2003	18953	41653	46
2004	21926	48209	45
2005	25299	54069	47
2006	33577	58937	57
2007	44138	73936	60
2008	54565	90705	60
Average	27040	52855	48

Source: Extracted and computed from the annual reports of RBI & IBA

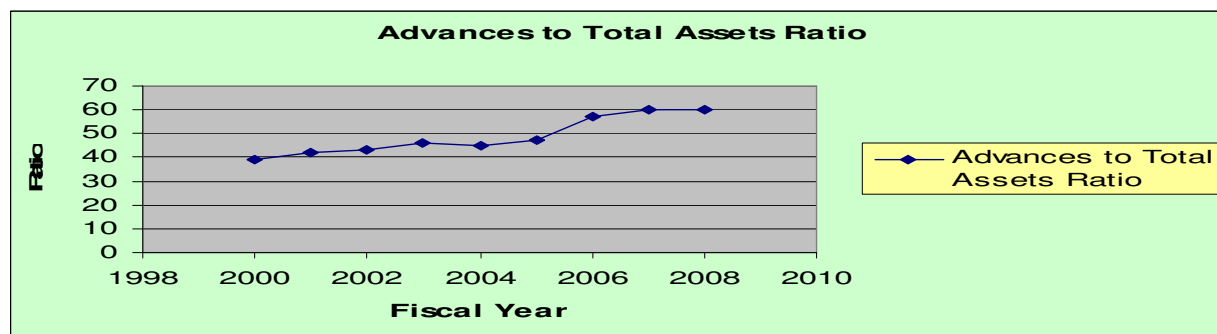**Figure-19**
Advances to Total Assets Ratio of OBC and GTB

10. Total Income to Total Expenditure Ratio: Total income to total expenditure ratio of OBC and GTB are presented in Table 21. The Table clearly shows that the average value of total income to total expenditure ratio is 128%. The total income to total expenditure ratio is higher than average value in the year 2002, 2003, 2004 and, 2005 while total income to total expenditure ratio is lower than average value in year 2000, 2001, 2006, 2007 and 2008. The total income to total expenditure ratio is the highest in 2004 while total income to total expenditure ratio is the lowest in 2008. The total income to total expenditure ratio has decreased during the post merger period.

Figure-20 shows a curve total income to total expenditure ratio which indicates an upward sloping trend. The curve of total income to total expenditure ratio shows a continuous increasing trend till 2004 after that it starts to declines.

Table 21 Ratio of Total Income to Total Expenditure of OBC and GTB (During 2000 to 2008)			
Year	Total Income (Rs. In Crore)	Total Expenditure (Rs. In Crore)	Total Income to Total Expenditure Ratio (In %)
2000	3558	2804	127
2001	4088	3353	122
2002	4467	3402	131
2003	4566	3367	136
2004	4537	3083	147
2005	4077	3105	131
2006	4672	3868	121
2007	5768	4941	117
2008	7454	6613	113
Average	4798	3837	128

Source: Extracted and computed from the annual reports of RBI & IBA

Figure-20
Total Income to Total Expenditure Ratio of OBC and GTB
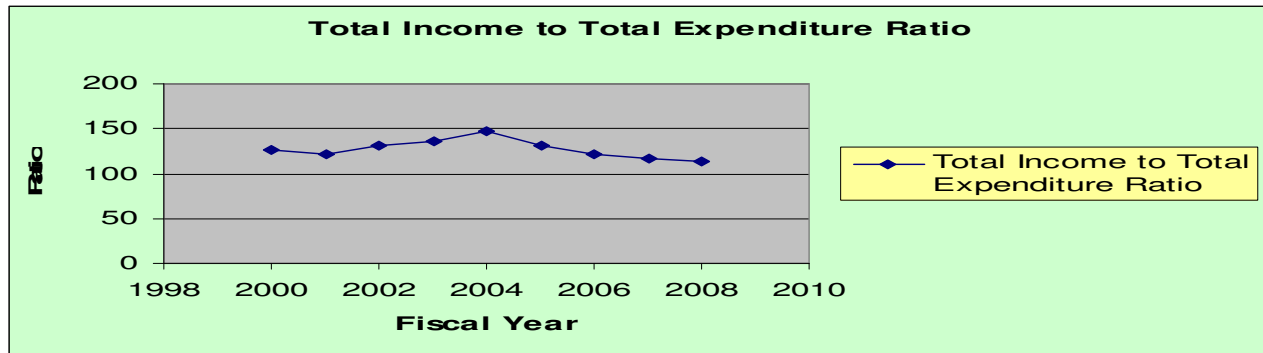
Conclusion: The result of regression equation (predicted values) has been found effective after merger of OBC and GTB from the point of view of capital, deposits, investments, advances, interest earned, interest expenditure, total income, net profit and total assets. In the case of total expenditure result of regression equation has been found ineffective. The analysis of financial ratios shows that efficiency has increased after the merger of OBC and GTB. Improvement has been observed after merger in deposits to investments ratio, total income to total capital ratio, interest income to interest expenditure ratio, net profit to total capital ratio, net profit to total assets ratio, advances to deposits ratio and advances to total assets ratio. Poor performance has been observed in the case of deposits to total assets ratio, total income to total assets ratio and total incomes to total expenditure ratio. On the basis of overall analysis merger of Global Trust Bank Ltd. (GTB) with Oriental Bank of Commerce (OBC) was found effective.

Annexure
Table: Performance of Financial Ratios after Merger

Financial Ratios	OBC + GTB(2004)	
	Increased	Decreased
Deposits to Total Assets Ratio	-	√
Deposits to Investment Ratio	√	-
Total Income to Total Assets Ratio	-	√
Total Income to Total Capital Ratio	√	-
Interest Income to Interest Expenditure Ratio	√	-
Net Profit to Total Assets Ratio	√	-
Net Profit to Total Capital Ratio	√	-
Advances to Deposits Ratio	√	-
Advances to Total Assets Ratio	√	-
Total Income to Total Expenditure Ratio	-	√

[80]

Table: Summary of effectiveness of the merger as per predicted value (Regression Equation)

Variables	OBC + GTB(2004)	
	Effective	Not Effective
Capital	√	-
Deposits	√	-
Investments	√	-
Advances	√	-
Interest Earned	√	-
Total Income	√	-
Interest Expenditure	√	-
Total Expenditure	-	√
Total Assets	√	-
Net Profit	√	-

Emerging Strategic Role for HRM

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Abstract:

Dynamic changes in HR practices are urgently required to refocus on priorities and resources of HR functions. In place of being HR driven the next generation of HR practices needs to be business-driven. The whole concept of strategic HR is based on the belief that instead of being activity oriented, new HR measures should be impact oriented. HR professionals and corporate planners believe that the sharp linkage between business plans and HR plans in an organization would not only strengthen the organizational functioning but also position HR in a strategic role. For HR activities to be integrated with business activities it is essential that instead of looking backward, innovative HR measures should be forward looking, allowing the HR managers to access and diagnose the organizational and human capabilities that can predict the future success of the organization. It is necessary to ensure that management initiatives in the area of HR are in consonance with the decisions taken in other functional areas of business. The paper discusses, with the help of a model, factors influencing Business-HR alignment and components of strategic HRM responsible for linking business objectives to HR and influencing organizational effectiveness.

Keywords: Strategic Human Resource Management, Business-HR Alignment, Corporate Strategy, Human Resource Strategy, Strategic Career Planning

Introduction

Primary concern of strategic human resource manager is to translate business strategies into human resource priorities. As strategic partners, human resource professionals should be able to establish human resource systems and practices that make the strategy happen in organizations. The translation of business strategies into HR deliverables helps an organization in its management of change. It also helps in better customer satisfaction and customer delight. Strategic HR practices need to flow from vision and mission of the organization and need to be proactive.

Implementation of strategic HR is linked to making the organization more effective in dealing with its environment.

Strategic HR emphasizes designing policies and practices that will build talent pools and that are relevant to corporate objectives in the long run. HR policies need to be in synergy with the business objectives. HR professional has to become part of the team who formulates business or corporate strategy.

Human Resource Management - A Set of Interrelated Systems

HRM is a strategic approach to the acquisition, motivation, development and management of the organization's human resources. It is concerned with the most effective use of people capabilities to achieve individual as well as business goals. It is a strategic and coherent approach to the management and utilization of the organization's most valued resource i.e. the human resources. HRM can also be understood as a set of interrelated systems concerned with employment, development and reward of people within the organization. It is a specialized field that attempts to develop programmes, policies and activities to promote the satisfaction of both individual and organizational needs, goals and objectives.

The fundamental assumptions of HRM are as follows:

1. Employees of organization concerned are reservoirs of talent and potential
2. HRM is involved with continuously enabling the employees to improve their competency and capability to play their present as well as future expected roles
3. HRM is involved with development of individual capabilities
4. HRM is concerned with respect and concern for each and every individual in the organization

5. According to HRM each and every employee is to be considered as internal customer of the organization
6. HRM believes that organizations should nurture a culture of trust and openness where values such as teamwork and collaboration are rewarded

HRM has the following characteristics—

1. Action-Oriented: HRM focuses attention on action, rather than on record maintenance, documentation, written procedures or rules and regulations. The difficulties and concerns of employees at work are solved through innovative and action oriented HR Practices.
2. Individual Focused: It tries to help employees develop their talents. It focuses on systems and practices that recognize employee as an individual with his unique personality, aspirations, needs and requirements. By introducing systems such as career development, succession planning and performance counseling HR systems work in a highly focused way and come up with plan for developing each and every employee of the organization. HR systems motivate employees through a systematic process of talent development and management

such as recruitment, selection, training and fair wage policies.

3. People Driven: HRM is all about people at work, both as individuals and in groups or teams. It tries to put people on challenging jobs assigned to them as per their competencies in order to produce best results for the organization and to make organization more effective.

4. Future Centered: HRM helps an organization meet its goals in the future by providing for competent and well-motivated employees. Once business strategies are chalked out they need to be aligned with people activities through people strategy to meet future goals of the organization.

5. Development Focused: HRM intends to develop full capability of the employees. The reward structure of an organization is according to the needs of employees. Training is offered to sharpen and improve their skills. Job rotation ensures employees gain multiple skills of various jobs so that they gain experience and exposure. Every attempt is made to use their talents fully in the service of organizational goals. Career development and succession planning helps in employee development to a great extent.

Strategic Human Resource Management: An Overview

The objective of strategic HR is to ensure growth and development of the organization along with maximization of profit. The strategic HR framework in any organization aims to leverage and/or align HR practices to build critical capabilities that enable an organization to achieve its long-term objectives.

Dynamic changes in HR measures are urgently required to refocus on the priorities as HR functions and systems are concerned. Instead of being HR driven the next generation of HR measures need to be business-driven. In the post-liberalization period, strategic human resource management is vital in achieving organization goals. Ultimately, the business objectives are to be achieved by the people working in the organization. If the people are not competent and are not rightly motivated, in spite of the best business strategy the organization performance would be elusive. As a result, the HR policies have to be in synergy with the business objectives. HR instead of being a supportive function in the organization has to be part of the team who formulates the business or corporate strategy. And the HR strategy should be drawn from the business/corporate strategy. This precisely calls for a linkage between how HR will create value for the business.

Strategic human resource management involves:

1. Use of planning in order to establish a strategic link between

the HR systems and practices and the goals and objectives of the organization

2. Aligning organizational and business goals to individual goals, leadership development including leading change at all levels in the organization

3. A coherent approach to ensure that the design and management of HR systems are based on an employment policy and manpower strategy

4. HRM activities and policies are in consonance with the business strategy

5. Considering people of the organization as intellectual as well as strategic resource for the achievement of competitive advantage for the organization

6. Selecting right people for the right jobs

Emergence of the Concept of Strategic Human Resource Management: Review of the Literature

One of the core capabilities deemed critical to the success of human resource management's mission is the ability to derive the human capital requirements for organization's strategic plan.

Many organizations often find themselves passive participants in the strategy process, if they are engaged at all. The HR function has evolved over a period of time. In 1930s and 1940s the function grew in significance. But during that time HR function was more focused on labour relations and staffing. Tata Iron and Steel Company became one of the first organizations in India to set up a personnel department in the year 1947. The early 70s saw evolution of the term HRM for personnel management.

The role of personnel department conventionally was to screen resumes, interview the prospective employees and to do paper work for routine events, deciding on promotions, transfer, demotion, annual increments, retirements, etc. The change in terminology also suggested change in the broader objectives of the function. HRM is designed with the organic design of the organization. The emergence of competitive business environment led management to bring a new focus on how human resources should be managed. This led to development of HR into a more strategic role. The early 80s saw the emergence and increase of the usage of the term strategic HRM.

Kanter (1983)suggests that organizations need a process of strategic human resource management to equip them to deal with the rate of 'strategic surprises', which in turn initiate requirements for flexibility and innovation. Organizations need to inculcate a culture which harnesses creativity and enterprise.

Kanter (1989) emphasized that high level of competition amongst the

organizations are forcing then to adopt new flexible strategies, structures and systems and would appear to suggest that strategic human resource management is being practiced but not well enough chalked out…

Schuler and Walker (1990) say that 1980s has been a time of more fast paced and dramatic changes that the organizations have faced than any other period. Baird et al.(1983), taking the example of a divisionalised organization, came up with a model for strategic human resource management which has its basis in a rational strategic planning process.

Devanna et al. (1984) considered strategic human resource management as part of the solution to two issues: declining employee productivity and the declining rate of creativity/innovation in industry, and suggested that 'more effective systems for managing human resources will lead to increased effectiveness in organizations.'

Miles and Snow (1984) discussed that organizations chalk a generic strategy and that they develop human resource management processes and systems that matches the chosen strategy. From research evidence they identified few generic strategies. Organizations that pursue a defender strategy have a narrow and relatively stable product market domain. The prospector organizations continually look for product and market opportunities and experiment with

potential responses to emerging environmental trends. The analyser organizations operate in two ways, one relatively stable in which it operates routinely and efficiently and the other changing, in which it operates in a creative and innovative style. The question before organizations is how to reduce, if not eliminate, the gap between the emergence of new strategies and their corresponding HRM processes.

Lengnick-Hall and Lengnick-Hall (1988) came up with a typology by which to explore what they considered to be the two dimensions of strategic human resource management, namely organizational goals and the availability/obtainability of human resources. The typology relies on three assumptions that the choice of strategy has not been made, that the management of human resources should contribute directly to strategy formulation and strategy implementation, and that as strategic conditions vary, the fundamental questions that must be addressed also vary because strategic issues reflect strategic contingencies.

Ackermann (1986) proposed that HRM strategies follow business strategy and will contribute to organizational effectiveness and efficiency measured by criteria such as productivity, labour costs and behavioural indices such as turnover and absenteeism. Ackermann believed that HRM should be the subject of planning and decision-making in the interests of the organization and

employees. The realization of this would make HRM into a more advanced stage—a stage of strategic human resource management.

Baird and Meshoulam proposed a model, consisting of dimensions of external and internal fit, for establishing human resource management strategies and practices. Their growth model has five stages: initiation, functional growth, controlled growth, functional integration and strategic integration. They believe that human resource management must go through the stages of organizational development in sequence. They further proposed that strategic components of HRM, which they identified as management awareness, management of function, portfolio of programmes, personnel skills and information technology, must (a) fit with and support each other and (b) fit the stage of organization development. These two fits interact and must be managed together.

Kydd and Oppenheim (1990) with the help of case study research in four organizations proposed a two-dimensional contingency framework which offers guidelines as to how certain HRM practices should be implemented to gain competitive advantage. The first dimension is based on environmental challenges or turbulence that an organization faces. The second dimension is based on whether or not an organization's key competitive thrust is to be an innovator. An organization's

position on each of these dimensions predicts what its approach will be to HRM practices and issues.

Schuler and MacMillan(1984)suggest that if an organization can capture the control of strategic behavior in the industries in which it competes it will gain competitive advantage .By effectively managing key human resource management functions of planning, staffing, appraising, compensating, training and development, and union management relationships the organization would be able to attract and retain talented human resource who are motivated to perform and there will be outcomes of greater profitability, low employee turnover, high product quality, lower production costs and more rapid acceptance and implementation of corporate strategy.

Schuler (1992) defined strategic human resource management as all those activities affecting the behaviour of individuals in their efforts to formulate and implement the strategic needs of business and proposed a 5-P model of strategic human resource management. In his model, business objectives are articulated and flow into the 5-P component enabling human resources management philosophy, policy, programmes, practices and processes to be established.

Garavan, Heraty and Costine(1995) have identified ten approaches that organizations can follow to establish the

linkage between business plans and HR plans in an organization. These approaches are top down approach, market driven approach, career planning approach, the futuring approach, performance diagnosis approach, artificial experience approach, pulse taking approach, the educational approach, interpersonal approach and the rifle approach.

Human Resource Strategies at Corporate Level

Rao (1999) has discussed challenges for building world class organizations. In a global economy, organizations cannot escape the reality of addressing themselves to the following challenges:

Quality challenge: Producing quality products and services at competitive prices is a major challenge for all corporates today.

People challenge: Employees who are professional, systematic and trustworthy should manage world-class organizations. How does one recruit, develop and retain such world class employees? This is a strategy challenge.

Technology: World class organizations use modern technology and spend on it. Getting world class technology, absorbing it, adapting it, and continuously improving on it for strategic advantage is another challenge faced by corporate today.

Culture: Building professional, systems driven, and commitment promoting

organizational culture is another major challenge for corporations.

Investing in People: Organizations need to invest in people and in building competencies by using training, mentoring, coaching, 360 degree feedback, task forces, OD interventions, survey feedback and assessment centre. Investing in people in such a way that they add strategic advantage is another challenge.

Rao (2007) points out that these challenges suggest that following focus is needed in future HR efforts. These focal points may be taken as strategic focal points. Focus on these strategic issues may help organizations in meeting their long term goals.

Communication strategy: Making employees at all levels understand the need for change through information sharing about global changes, country's standing in global scene, standing of particular organization in global scenario, the vision and mission etc. helps secure their commitment to change.

Accountability, ownership and commitment: Various HR strategies should aim at enhancing accountability and ownership. Number of HR systems and processes can be used in combination. Performance management processes, rewards and recognition, career planning and work culture etc. contribute to these.

Quality strategies: HR strategies should aim at total quality and highest customer satisfaction. Ensuring quality products and services requires quality consciousness in every employee.

Cost Reduction: HRD Audit evaluates the need, strategies used, their appropriateness etc. The audit may also suggest ways of cost reduction through total employee involvement. It could be linked to appraisals, rewards, etc.
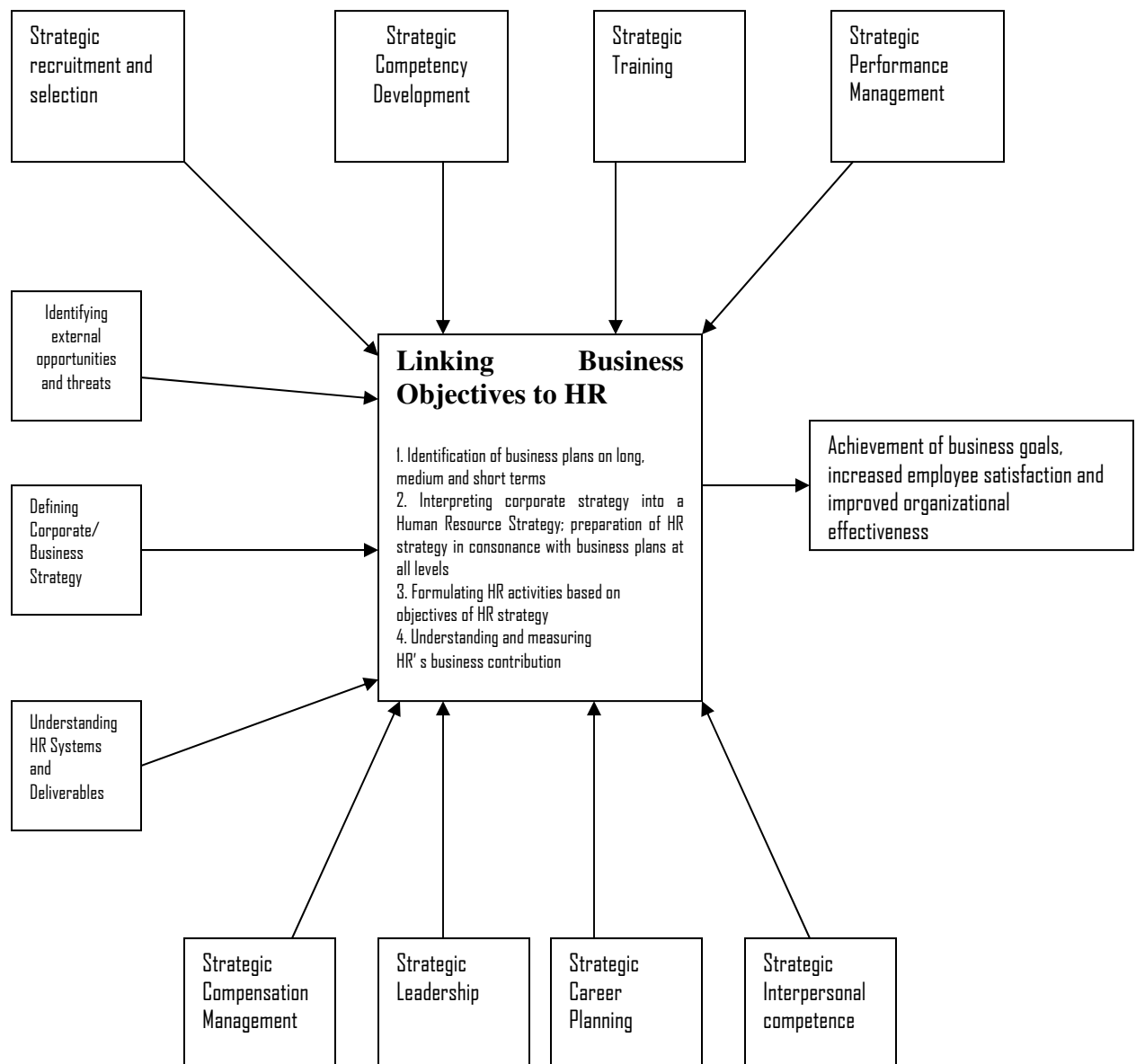
Culture Building Exercises: These exercises should aim at upholding the dignity of the human being and increasing organizational effectiveness. Rao (2007) says as future CEO, HR professional needs to have a total business orientation. They need to be goal-driven and need to use HRD effectively as a strategic intervention and a future building tool. They must possess a high degree of cross-functional orientation. They need to align HRD very well with business and organizational goals. They have to be vision-driven and futuristic. They need to balance the present with future, short-term and long term systems and spirit. They are also expected to be change agents. They have to take care of larger issues. In order to use HR effectively as a strategic intervention future HR professional needs to have following characteristics:

1. business excellence(both global and local industry or organization based) such as global trends in talent, markets, products, benchmarking with global products in HRD, strategic and long term thinking, vision and long term thinking
2. cross functional excellence such as exposure to other functions, internal customer service orientation
3. functional excellence in HRD such as knowledge of employees and their concerns, knowledge of HRD practices of competitors and other industry, managing people in HR department, HRD systems, OD competence and research competence
4. leadership qualities such as leading from the front, empowering nature, coach and mentor, a role model, value driven and culture sensitive
5. change management skills such as change positive, creativity, empathy, problem-solving and communicative
6. vision for HRD and people focused
7. familiarity with IR and managing IR well,
8. administrative skills such as monitoring skills, people management skills, interpersonal competence, time management and resource management
9. learning capability

*Model for Business—HR Alignment

Strategic recruitment and selection

Strategic Competency Development

Strategic Training

Strategic Performance Management

Identifying external opportunities and threats

Defining Corporate/ Business Strategy

Understanding HR Systems and Deliverables

Linking Business Objectives to HR

1. Identification of business plans on long, medium and short terms
2. Interpreting corporate strategy into a Human Resource Strategy; preparation of HR strategy in consonance with business plans at all levels
3. Formulating HR activities based on objectives of HR strategy
4. Understanding and measuring HR's business contribution

Achievement of business goals, increased employee satisfaction and improved organizational effectiveness

Strategic Compensation Management

Strategic Leadership

Strategic Career Planning

Strategic Interpersonal competence

* *Model suggested by the author*

The model aims to find a means to integrate evolving strategy and HRD

concepts. Model shows how human resource development practices can be linked to achievement of business goals of an organization. External opportunities and threats have to be identified. These also include the environmental factors which need to be analyzed from a human resources perspective such as labour, social, education, demographic, legislative and economic. Corporate and business strategy has to serve as inputs for the linkage and HR systems and deliverables have to be understood to link human resource activities with organizational performance. Strategic HR within the organization has to work towards strategic recruitment, selection and staffing, strategic competency development, strategic training, strategic compensation management, strategic performance management, strategic leadership, strategic career planning and strategic interpersonal competencies. *Components of Strategic HRM in the model:*

(1) Strategic Recruitment & Selection

Strategic recruitment can be understood as searching and obtaining potential job candidates in sufficient numbers and quality so that the organization can select the most appropriate human resources to fill its job needs. Strategic recruitment is a process of creating a long-term strategic policy and plan for the organization. It also involves having specific requirements for each job and aligning them with the organization's strategic needs.

Strategic selection is a process in which an organization hires human resources who are expected to perform in accordance with organizational objectives. By working on strategic planning and integrating staffing into strategic planning an organization can decide type of human resources required in the long run. Staffing is a key strategic area for the human resource management and vital for any organization if it has to survive and grow effectively. This requires effective planning so that the organizational and individual goals are in congruence. An organization's staffing policy depends on—

a. general competencies of human capital
b. diversity and scope of business operations

Managers in modern organizations need to ensure presence of a high quality human factor to achieve organizational goals. Modern selection techniques and tests have to focus on adaptability and effective person-job fit. Restructuring of an organization, downsizing, decentralization have all added to an organization's need to have a flexible workforce. Employees should be able to adapt to the changing business environment by learning new competencies.

(2) Strategic Competency Development

HR professionals in order to achieve a linkage between business plans and HR plans are required to classify the employees into distinct skills and knowledge categories. HR managers are required to assess the skills available with each group, predict what skills employees require to possess to meet the organizational demands and decide how to close the gap between existing human skills/competency and future requirements.

(3) Strategic Training

In modern era, as globalization and competition increases, training systems have to change focus from meeting immediate needs to meeting long term organizational vision. New skills can be obtained in organizations through hiring or can be developed through training activities within the organizations. Traditionally, T&D practices focused on training individuals to overcome specific job-based gaps or deficiencies or to impart knowledge and skills predicted to be useful in future. Strategically aligned training activities aim to help organizations acquire and develop human resources to achieve long term needs of the organization.

Training and development are today considered as strategies to gain competitive advantage. The different strategic issues involved in training and development are: integrating training with long term goals of the organization, linking training with performance management, compensation, and organizational strategy, the shift from training to learning and the development of a learning organization. Modern organizations focus on strategic training. Strategic training is a training process in which the training needs of the organization are aligned with the business goals.

(4) Strategic Performance Management

The strategic dimension of performance management involves developing performance standards for achieving the organizational objectives, performance feedback, self-appraisal, coaching and performance counselling. Performance management is the process of creating a work environment which enables people to perform to the best of their capacities. A performance management system includes developing clear job descriptions, selecting appropriate people with an appropriate selection process, negotiating requirements and achievement based performance standards, outcomes and measures, providing effective orientation, education and training, providing on-going coaching and feedback, conducting quarterly performance review and development discussions, designing effective compensation and recognition systems that reward people for their contributions and providing career development opportunities for entire human resources.

(5) Strategic Compensation Management

The system organizations use for rewarding their employees in return for the tasks performed is called compensation system. The major objective of compensation system is to motivate employees and keep them satisfied by compensating them in proportion to their competencies and the nature of the job. It's key driving force behind employee performance. It is believed that employee performance is dependent on employee motivation. Organizations have adopted different methods of compensation for developing sense of employee ownership. Many organizations give ESOPs to develop a sense of commitment and ownership within the organization.

Organizations also compensate employees on the basis of the group or team performance. Executive compensation usually includes long term incentives, performance bonuses and perquisites. Another vital part of strategic compensation management is effective designing of executive compensation to keep a check on unnecessary expenditure of organization due to high attrition. The more effective the organization's policy of rewarding and motivating the human resources (specially the key performers), the more the organization is likely to grow and develop in the long term.

(6) Strategic Leadership

Strategic leadership includes development of Level 5 Leadership amongst the key performers through effective policies, practices and processes. The term level 5 refers to a hierarchy of executive traits. The key lies in well thought out career and succession planning being done by HR managers in alignment with strategists to identify and develop the leadership talent within the organization. In fact, leadership development planning should be part of every organization's strategy to visualize where the organization will be going in future. The talent of executives who are capable to work as Level 5 leaders needs to be worked and explored by HR department. Level 5 leaders are considered to be visionary, effective, modest and humble. They are able to successfully combine their personal humility and professional will to turn good organizations into a great one. Level 5 leaders tend to have tremendous vision, growth plans and ambitions for the organization. At the time of difficulty such people or leaders do not blame others or external factors for the problems or difficulties faced. When such leaders succeed in tasks or projects they give credit to other people and external factors. Such leaders believe in producing fast paced, strong and sustained results. Such people under promise and over deliver. Success of the organization rather than their own is the mission of Level 5 leaders. Level 5 leaders put efforts and choose a successor who can ensure the same

success for the organization in the future. Level 5 leaders rarely talk about their personal achievements or success.

(7) Strategic Career Planning

HR professionals must work towards linking each employee career plans with that of business plans. The alignment is required of individual needs and aspirations and business goals of the organization.

(8) Strategic Interpersonal Competencies

This approach is based on the assumption that a substantial share of corporate strategy is informal. Therefore, HR professionals with their interpersonal competencies can institutionalize this informal strategy in a formal way.

The results of Business--HR alignment as shown in the model could be achievement of business goals, increased employee satisfaction and improved organizational effectiveness.

Conclusion

The dynamic and competitive environment is bound to influence human resource function to develop a more strategic role for itself. HR professionals should act as strategic partners and be proactive in their role than playing a role of reactive, passive spectators. The HR professionals should constantly monitor how far HR systems and activities are contributing to achievement of business objectives and contributing towards increased effectiveness of the organization. At the same time, it is the responsibility of HR professionals to keep workforce motivated and committed addressing the individual concerns as well. HR managers need a change in their outlook from seeing themselves as relationship managers to strategic resource managers. Formulating HR plans and policies keeping in mind business objectives of the organization would better equip an organization to achieve its goals and objectives. Combining human resource practices and organizational vision, with increased focused on the achievement of business goals, can have a substantial effect on the ultimate success of the organization.

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Analysis of Customer Attitude towards E-Shopping with Special Reference to Allahabad

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Abstract:

The expansion of multidimensional trade, internet and World Wide Web provides corporate with new vistas of business mix. Growing companies can establish websites that rival or better their larger rivals. Present horizon of LPG era and increase in the usage of ICT in our busy and fast life fueled expansion of e-shopping. E-shopping is a modern business mix that addresses the need of organizations, merchants and consumers to cut cost while improving the quality of goods, services and increasing the speed of delivery. It is associated with buying and selling of information, products and services via using internet technologies to transform the way key business processes are performed, both wholesale and retail. The best part of it is that the SMEs and tiny enterprises can have the same exposure as the big players, today and in the future.

Thus, this research paper is an attempt to analyze customers' attitude towards e-shopping with special reference to Allahabad region. With this theme following are the proposed hypothesis for testing:-

H01:-There is no significant difference in hostile consumer attitude and indifferent consumer attitude towards e-shopping concept.

H02:-There is no significant difference in indifferent consumer attitude and interested consumer attitude towards e-shopping concept.

H03:- There is no significant difference in interested consumer attitude and hostile consumer attitude towards e-shopping concept.

Keywords: E-shopping, ICT, LPG, SMEs, Hostile

The expansion of multidimensional trade, internet and World Wide Web provides corporate with new vistas of business mix. Growing companies can establish websites that rival or better their larger rivals. Present horizon of LPG era and increase the usage of ICT in our busy and fast life fueled expansion of e-shopping. E-shopping is a modern business mix that addresses the need of organizations, merchants and consumers to cut cost while improving the quality of goods, services and increasing the speed of delivery. It is associated with buying and selling of information, products and services via using internet technologies to transform the way key business processes are performed both wholesale and retail. The best part of it is that the SMEs and tiny enterprises can have the same exposure

as the big players, today and in the future.

E-shopping is a special marketing medium, which requires its own special regulations for doing business promptly and effectively. Online shopping turns the traditional broadcast methods of advertising on their heads. Instead of the advertisers sending a message to a targeted audience that acts or dismisses the call to action, online consumers seek out information and advertising. They, not the advertiser, are the initiators of communication. Success of the e-shopping requires full understanding of ICT and attention to detail and constant promotional activity. World Wide Web using graphics it as a marketing tool is not about fine graphics only; it's also about valuable database of industry profile, result oriented marketing efforts and reliable hosting service, making it fast, clear and easy to download.

Gallup (1959) suggested that this new medium of shopping needs effective pillars, which can be established in following ways:-

1. Build a professional Website with compelling copy, with the sole objective of getting you more leads, more sales, and increased profitability, using fine-yet reasonable graphics and scripts to make it rich and appealing to your visitors.

2. Use powerful, proven marketing mix strategies and techniques that allow the web site to realize effective & superior results and concurrently cutting various costs.

3. Improve the performance of web presence and transforming it into a persuasive, money making winner.

4. Customized, creative, marketing campaigns to increase exposure and secure consistently effective results from sales and marketing efforts.

5. Hosting the site on fast servers, closer to the internet backbone, for fast download.

Building the concept of e-shopping around consumer, marketing professionals should design marketing mix strategies according to their customer point of view. E-shopping allows for the entire sales cycle to be conducted on one medium, nearly instantaneously.

The web portal is like one big point of sales display, with easy access to products, for impulse shopping. Impulse shoppers have found a true friend in the web portal. Within seconds from being made aware of a product, the consumers can purchase it online. Further, with the targeting techniques available to advertisers, consumers who turn down a product because of the price can be identified and served a special offer, likely to result in a purchase. In the right hands, with the right tools, the web portal really is an advertiser's dream come true.

M. Wakeman (1999) explained that the value propositions of products and

services offered in the physical world are essentially limited "point solutions" that meet only part of a consumer's need or want. In the online world, even a simple banner advertisement can be both an advertisement and a direct marketing service. The banner raises the passive consumer's awareness of a product, yet it also encourages the consumer to pursue action by clicking on it.

Classification of Customers: For better understanding of customer attitude, we can classify e-consumers in following categories:

   A. **Hostile Consumers:** It reflects the hostile attitude of consumers' towards e-shopping. Consumer of this segment felt that e-shopping is irritating and is intruding into their privacy. The consumer of this segment should be given an option to accept or reject the concept of e-shopping. They also felt that e-shopping creates confusion and are annoying during workplaces. They equated e-shopping with junk sms's.

   B. **Indifferent Consumers: -** Consumer of this segment reflected an indifferent attitude towards e-shopping. Usually they may not pay attention towards e-shopping. They further felt that entire process of e-shopping may prove to be beneficial to consumers.

   C. **Interested Consumers: -** Consumer of this segment always interested in e-shopping as they don't have time to read newspaper and watch T.V. They spend most of their time online and believe that e-shopping is meant for information seekers, high status group, and internet savvy people.

Thus, this research paper is an attempt to analyze customer's attitude towards e-shopping with special reference to Allahabad region. With this theme following are the proposed hypothesis for testing:-

H01: There is no significant difference in hostile consumer attitude and indifferent consumer attitude towards e-shopping concept.

H02: There is no significant difference in indifferent consumer attitude and interested consumer attitude towards e-shopping concept.

H03: There is no significant difference in interested consumer attitude and hostile consumer attitude towards e-shopping concept.

Methodology of the study:

   1. *Study type:* This study is expected to fall under the category of exploratory research.
   2. *Sample:* For this study, the researcher has randomly selected 60 people from Allahabad region.

3. ***Tools and Techniques:*** During the study survey method with the help of self-developed structured, non-disguised, close-ended questionnaire was used. It included 10 statements which were based on 5 point Likert scale. The Questionnaires helped to get a clear idea about respondent's perception. For testing the reliability and validity of questionnaire a pilot test has been conducted.

4. ***Procedure of Data Collection:*** The data employed for the study under primary sources.

5. ***Data Analysis & Interpretation:*** Data analysis will conducted with the help of Z- test using the software *SPSS version -10*.

6. **Analysis & Findings:**

S. No.	Variables	Z-Values	Result
01	Hostile Consumer Attitude and Indifferent Consumer Attitude	1.67	Accepted
02	Interested consumer Attitude and Indifferent Consumer Attitude	2.06	Rejected
03	Showing Relation Between interested Consumer Attitude and Hostile Consumer Attitude	4.78	Rejected

NOTE:- Z value at 5 % level of significance is 1.96.

H01: 'There is no significant difference in hostile consumer attitude and indifferent consumer attitude towards e-shopping' is accepted because Hostile consumers do not believe in e-shopping as they consider it unreliable, non-interactive and creates lots of disturbance during work. As a hostile respondents, I found e-shopping is significantly more irritating and annoying than other forms of shopping. They also express that it is neither entertaining nor informative; consequently their overall attitude towards e-shopping was negative.

Market professionals need to be aware of the negative attitudes held by consumers towards e-shopping and the adverse effect. Improved targeting with relevant advertisements related to the page content might counter-balance this attitude.

H02: 'There is no significant difference in indifferent consumer attitude and interested consumer attitude towards e-shopping' is rejected because on the contrary, indifferent consumer perceive e-shopping as a junk SMS's for them, but it provides awareness about product and services and it may only be brought into the attention during free or leisure time. Ducoffe (1999) found that indifferent respondents rated e-shopping as fairly informative but less entertaining. Respondents did not object to e-shopping as long as they were clearly identified.

The researcher also found that most of the respondents did not think advertising

presented a true picture of the products advertised, and that they advertising were believed to insult the intelligence of the consumer. Most of the respondents thought that most television commercials were neither honest nor believable.

H03: 'There is no significant difference in interested consumer attitude and hostile consumer attitude towards e-shopping' is rejected. The researcher found that it is more effective for developing a favorable brand attitude and it is an example of one to one marketing, and consumer gets information on his desktop, without any kind of geographical boundary.

Interested consumer attitude was due to the value or effectiveness of advertising in meeting consumers' needs- that is, how informative and entertaining the marketing is and how useful it is for making purchase decisions. Indeed, informativeness and entertainment have been identified as positively contributing to the perceived value of consumers and advertising in general. The results suggest that interested consumers' perceptions of e-shopping are generally positive.

In conclusion, it is desirable for e-shopping policy makers to design attractive, effective, superior and informative marketing mix strategies for e-shopping. For this they can analyze the following design:

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Forecasting the Number of Subscribers of 3G Mobile Services in India using Bass Diffusion Model

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Abstract

Technological innovations have been recognized as a key input in the process of economic growth for every country. Apart from labour and capital, innovation can be considered as a third factor in the process of growth. Only innovation does not make a guarantee of success but diffusion of innovation is equally important. Like telecommunication through mobile is a great innovation but its adaptation is equally important.

In this research paper, we use diffusion model to analyze the mobile service market and try to forecast the number of subscribers of 3G services in India. The Bass model is a useful tool for forecasting the adoption (first purchase) of an innovation (a new product) for which no closely competing alternatives exist in the marketplace. The model can forecast the long-term sales pattern of new technologies under two types of conditions: (1) the firm has recently introduced the product or technology and has observed its sales for a few time periods; or (2) the firm has not yet introduced the product or technology, but its market behaviour is likely to be similar to some existing products or technologies whose adoption pattern is known.

The basic objective of the study is to forecast the number of 3G mobile service subscriber in India. It has provided forecasting data which will very much require providing customer satisfaction, to generate profit and justify the huge investment which companies are incurring during 3G bidding in India.

Keywords: Technology, Innovation, Telecommunication, 3G Mobile Services, Adoption, Telecom Growth, Maturity, Subscribers, Diffusion of Innovation

Introduction:

In 2010, the 3G telecom spectrums were auctioned through highly competitive bidding. Tata Docomo was the first private operator to launch 3G services in India with the huge investments in spectrum, infrastructure and marketing. So accurate forecasting is very important for every company to meet customer's performance expectations without costly overbuilds. The global data reveals the fact that 3G mobile services is very successful in many countries and the 3G subscribers had a rapid growth in Japan, Korea, US and a few European countries. For the telecommunication operators in India, it is the key period now after launching of 3G mobile services into the market. The most important problem that

all the operators are facing is to forecast the demand of 3G services in India, and consequently, to forecast the revenue and profits they can earn from 3G services. It is not easy to solve the problem, because 3G is a kind new service and there isn't enough historical data for forecasting. Although we can get some data of the development in some countries, comparative approaches are not quite applicable because consumer behavior of Indians are altogether different due to large population, diversity, culture and differences in income level. In fact, with the observation of the development of 3G services in some countries, we can find that the data showed totally different developing way, and it is hard to find the common experience directly from the short-term data. The Bass diffusion model, developed by Professor Frank Bass in 1969, is one of the fundamental models to describe, and sometimes predict the purchases for innovative product.

History of Cellular Phones and Telecom:

The first cellular phone call was placed in 1973 in the USA, which has given the start in cellular telecoms industry. Afterwards, the focal center for the continuous innovations in the industry was not the USA. Japan introduced the first cellular network in 1979, three years earlier than the USA did. First internationally roaming cellular network standard, NMT (Nordic Mobile Telecoms) was commercialized in 1981 and the first digital cellular network, GSM (Global System for Mobile communications)

was initiated in 1991 in Finland (Ahonen et al. 2004).

Third Generation (3G) mobile network is the third generation of mobile networks that offer higher data rates than the previous generation networks (1G and 2G). It offers data rates of 144 Kbps for fast-moving mobile users in vehicles, 384 Kbps for slower moving pedestrian (ordinary) users, and 2 Mbps from fixed locations. While 1G as the first generation which emerged in the 1940s offers wide area low bandwidth, just less than 10 kbps. It used analog technology. 1G can only be used for voice service. 2G as the second generation, launched in the 1990s, offers data rates only between 10 and 20 kbps. It can be used for both voice communication and short message service (SMS) (Lehr and McKnight, 2003).

There has been a steady growth in worldwide 3G mobile adoption. However, there also exists a wide range of 3G diffusion levels across countries. For example, the region of Asia trumped all others in 3G adoption with close to 52 percent of the world 3G market share as early as in 2006 (International Telecommunication Union, 2006). More recently, Asia-Pacific was home to an estimated 158 million 3G subscribers in 2008 and is expected to reach 564 million subscribers by 2013 (Suppiah, 2009). Historically, Korea, Italy, Japan, Portugal and Hong Kong were the top five 3G mobile economies in terms of 3G mobile penetration rate (International Telecommunication Union, 2006). According to the official International

Telecommunication Union report, while the number one 3G nation, Korea, had a penetration rate as high as 25.95 percent, the number five country, Hong Kong, reached only about one third of Korea's rate (8.19 percent). It is evident that there are significant regional differences in the number of 3G subscribers. While close to half of the 3G subscribers are located in the region of Asia, less than thirteen percent of them are in Europe.

Current Scenario: Indian Telecom Industry

Talking of telecommunications sector in India today, we can primarily identify two segments namely Fixed Service Provider (FSPs) and Cellular Services. Some of the essential and basic telecom services forming part of Indian telecom industry include telephone, radio, television and Internet. Telecom industry in the country lays a special emphasis on some of the advanced and the latest technical innovations like GSM (Global System for Mobile Communications), CDMA (Code Division Multiple Access), PMRTS (Public Mobile Radio Trunking Services), Fixed Line and WLL (Wireless Local Loop). Especially, India has a flourishing market in GSM mobile service, while the number of subscribers is on rapid and dramatic increase. The Indian telecommunications industry boasts as being one among the most rapidly growing chunks on the globe. Experts around the world estimate that India holds the promise of emerging as the second largest telecom market of the world.

Data published by the Telecom Regulatory Authority of India (TRAI), reveal that the number of telecom connection subscribers in India reached 562.21 million in December 2009, marking a 3.5 percent increase over the number 543.20 million reported in November 2009. This figure indicates that the average teledensity (number of telephones per 100 persons) has gone up to 47.89.

On account of a dramatic increase in the earnings from mobile and landline connections, the telecom industry in India made revenue of US$ 8.56 billion during the quarter ending on December 31, 2009 thereby witnessing a recovery from the economic downturn.

Business Monitor International has stated that at present, India is adding up about 8-10 million mobile subscribers every succeeding month. Estimates have revealed that by June2012, almost half India's population will be in possession of a mobile phone. This will result in about 612 million mobile subscribers, making up a teledensity of about 51 per cent by the year 2012.

RESEARCH METHODOLOGY

For the purpose of this research paper, a part of research data has been collected from secondary sources. Secondary data is collected by means of various websites like official website of TRAI, national news papers and other published journals. Whole India is considered as a population for this study. Diffusion model is used for analyzing and prediction of the number of subscriber of 3G mobile services in India. There are various diffusion models; among

them, bass model is best one for forecasting. The Bass model provides a conceptually appealing and mathematically elegant structure to explain how a new technology or product diffuses through a target population of customers. The model can be used for long-term forecasting of the adoption of an innovation. Such forecasts are not only important for the firm introducing the innovation (e.g., Apple's introduction of iPod), but also for other companies that make related products that complement, or substitute for, the innovation (e.g., record labels, speaker makers). Secondary data for future prediction of 3G mobile services is done with the help of SPSS software. And Analysis of primary data is done through MS- Excel 2007 with the help of Data Analysis tool. Data is analyzed on the ground of correlation, regression.

BASS DIFFUSION MODEL

The Bass Model was first published in 1963 by Professor Frank M. Bass as a section of another paper. The section entitled "An *Imitation* Model" provided a brief, but complete mathematical derivation of the model from basic assumptions about market size and the behavior of innovators and imitators. The paper did not provide empirical evidence in support of the model, which was provided in the 1969 Bass Model paper.

A mathematical theory of product and innovation diffusion was just being born. Three years before, in 1960, Fourt and Woodlock had published their pioneering

paper about the diffusion of frequently purchased products. In 1961 Mansfield's now classic paper appeared. In 1962 the first edition of Professor Everett M. Rogers' pioneering book *Diffusion of Innovations* was published. As was the norm in sociology at the time, Rogers' thoroughly descriptive work was largely literary and did not include a mathematical theory.

The literature on patterns of diffusion of mobile telecommunications is particularly scant, mainly because it was not until recent years that mobile telephone subscriptions began to reach the top of the S curve. In Gruber (2001) analysis of the determinants of the speed of mobile telephone diffusion in Central and Eastern European (CEE) between 1990 and 1997, Gruber (2001) found several major determinants of rapid diffusion, among them, the timing of a country's adoption of mobile telephones and the total numbers of vendors were significant. Also, complete market liberalization was more effective than partial liberalization of the market over time. The scope of fixed mainline telecommunications was another factor that contributed to the speed of diffusion.

Bass Diffusion Model Terminology

Some of the terms used in the model are:
1. **N (t):** total or cumulative number of consumers who have already adopted the new product through period t.
2. **N (t-1):** cumulative number of adopters for the new product through the previous time period(i.e. , t-1).

3. **S (t):** number of new adopters for the product during the time period t and can be expressed as N (t) - N (t-1).
4. Three key parameters used in the Bass Diffusion Model are:
5. **m**: total market size, a terminal value of total adopters
6. **p:** coefficient of innovation , represents the probability that an innovator will adopt at time t.
7. **q:** coefficient of imitation, represents the probability that an imitator will adopt at time t, through word of mouth or through other social media that result from interpersonal communication between adopters and non- adopters.

Some of the formulas used are:

S (t)= {p+(q/m)*N(t-1)}*{m-N(t-1)}

Where p,q and m are calculate through below formula:

$$m = \{-b-[(b^2)-4*a*c)]^{0.5}\}/(2*c)$$

$$p = a/m$$

$$q = -m*c$$

Adoption curve for new product are generally **called S-curves** because of their shape.

Analysis and calculation is given below:

3G mobile services projections based on Analogous Products

Estimation of Parameters

1. The historical 2G mobile subscribers data from 2000 to 2011 was obtained from secondary sources which is showing as S(t) in below table.
2. The cumulative 2G mobile subscribers data till last year for each year, N(t-1) was calculated
3. Then square of N(t-1) is calculated.
4. Non-linear regression was run to determine a, b and c- (the value of a, b and c. Intercept is represents the value of a, X Variable 1 represents the value of b, and X. Variable 2 represents the value of c in regression analysis.
5. m, p and q values were calculated from the values of a, b and c by putting them in the aforementioned formula

Time	S(t) (In Millions)	N(t-1) (In Millions)	(N(t-1))^2 (In Millions)
Aug-00	2.3	0	0
Apr-01	3.5	2.3	5.29
Apr-02	6.4	5.8	33.64
Apr-03	13.3	12.2	148.84
Apr-04	27.1	25.5	650.25
Apr-05	42.1	52.6	2766.76
Apr-06	72.1	94.7	8968.09
Apr-07	125.5	166.8	27822.24
Apr-08	198.8	292.3	85439.29

Apr-09	298.1	491.1	241179.21
Apr-10	433.1	789.2	622836.64
Apr-11	580.6	1222.3	1494017.29

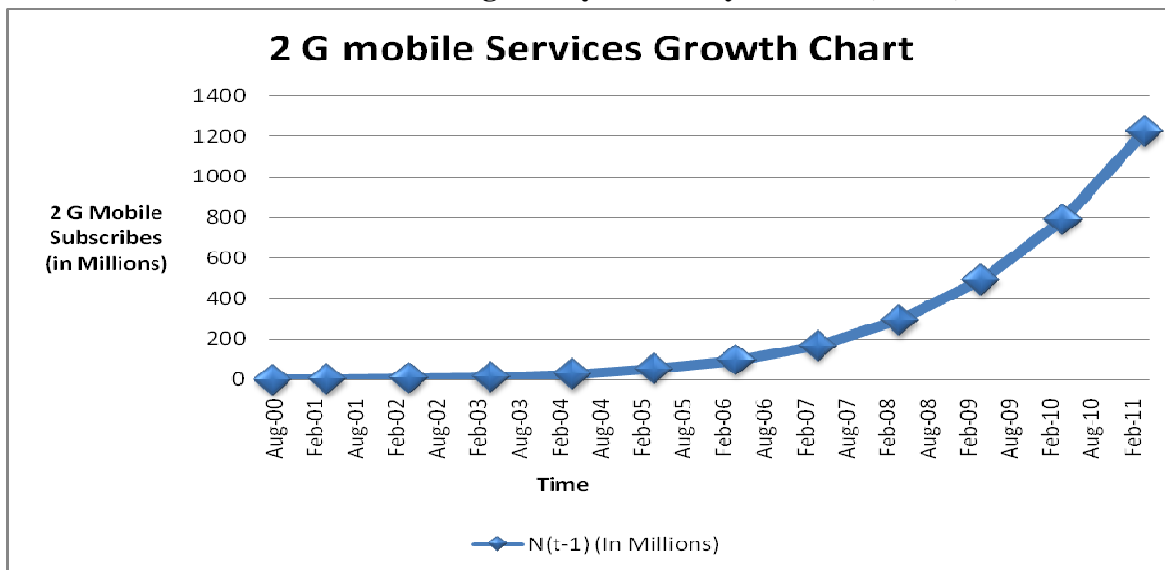**Source: Telecom Regulatory Authority of India (TRAI)**

Figure: Graph of 2G mobile subscribers in India (month wise)

Interpretation- Researcher has seen through the secondary data about the 2G mobile services product life cycle that from the august 2000 to August 2006 was the introduction stage. Later on it has been seen that there was growth in the market in 2G services but it is still searching for the maturity level.

Now we need to find the correlation among 3 columns. Then we ran correlation analysis between S (t), N (t-1) and square of N (t-1). The correlation among all three columns is given below:

Table 4.4: Correlation analysis data of $S(t)$, $N(t-1)$ and $(N(t-1))^2$

	Column 1	Column 2	Column 3
Column 1	1		
Column 2	0.991957568	1	
Column 3	0.912871511	0.956742767	1

Interpretation: It shows that there is a very high level of correlation among all three columns it means regression is possible. It also shows that the stronger the association between the three variables and the more accurately we can predict one variable from

knowledge of the other variables. It is having positive sign which shows that it is a positive correlation and positive correlation means that relatively high scores on one variable are paired with relatively high scores on the other variable, and low scores are paired with relatively low scores.

Now value of a, b and c is

a	6.069389564
b	0.693850782
c	-0.000184749

Than formulas used to calculate the value of m,p and q :

$$S(t)= \{p+(q/m)*N(t-1)\}*\{m-N(t-1)\}$$

Where p,q and m are calculate through below formula:

$$m = \{-b-[(b^2)-4*a*c)]^{0.5}\}/(2*c)$$

$$p = a/m$$

$$q = -m*c$$

Now when putting all value of a, b, and c in above formula than we are able to get the value of m,p and q.

Thus result values are mentioned below:

m	3764.358567
p	0.00161233
q	0.695463112

Now we can get the value of m, p, and q and we need to put the calculated value of m, p and q in basic equation of S (t) which is given below:

$$S(t)= \{p+(q/m)*N(t-1)\}*\{m-N(t-1)\}$$

Here S (t) will change with respect to change in time period.

Predicted value or forecasted value is calculated based on above formula and it is mentioned below in table form:

Table: Predicted data of 3G mobile subscribers in India based on Bass diffusion model

S.No.	Time	N(t-1) (In Millions)
1	2012	0
2	2013	6.069389564
3	2014	16.34322412
4	2015	33.70302575
5	2016	62.94743031
6	2017	111.9608963
7	2018	193.3985624
8	2019	326.7475118
9	2020	539.8063411
10	2021	866.5864813
11	2022	1335.195903
12	2023	1938.330312
13	2024	2595.1851
14	2025	3157.640908
15	2026	3512.561455
16	2027	3676.369594
17	2028	3736.274205
18	2029	3755.705406
19	2030	3761.723479
20	2031	3763.559051
21	2032	3764.116256
22	2033	3764.285154
23	2034	3764.336327
24	2035	3764.35183
25	2036	3764.356526
26	2037	3764.357949
27	2038	3764.35838
28	2039	3764.35851

Interpretation: Till the year 2020, 3G mobile services of Indian telecom Industry will come under Introduction stage of product life cycle. It means it will take 8 to 10 years to establish 3G mobile services in Indian market. The reason behind that is poor infrastructure, technological advancement in 3G services and 2G mobile services is in growth stage now a days in Rural and tier-3 cities in India. so replacing will take some more time. After that growth stage will appear in 3G mobile service segment which will start 2021 (Approx.) to 2030 near about 10-12 years. After that there will be a stage of maturity till 2039 (Approx). There is continuously innovation in telecom sector like 4 G services, 5 G services which leads the world in new communication era. So it also influences the predictions and adaptation of new technology.
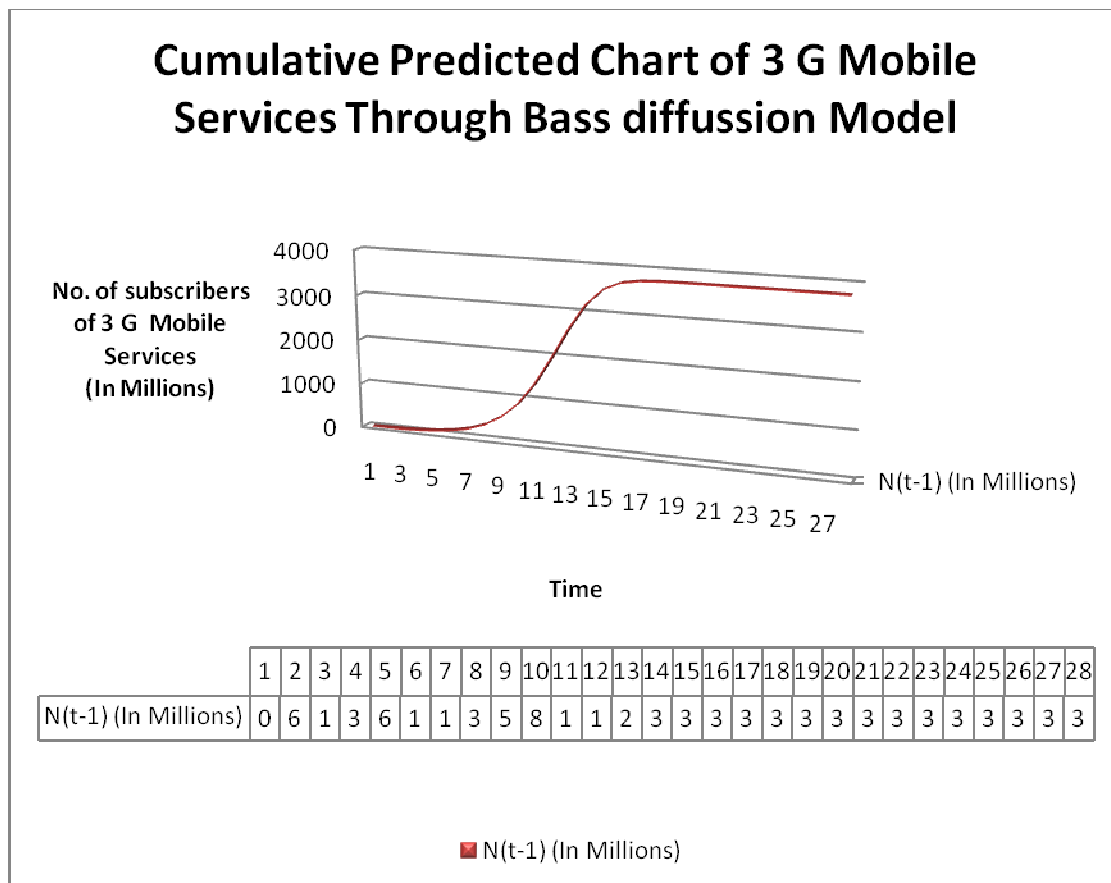
Figure: Graph of Cumulative Predicted 3G mobile subscribers in India

Findings:

1. Adoption curve for new product are generally called S-curves because of their shape and researcher prediction also shows S shape curve based on predicted plotted data.

2. Till the year 2020, 3G mobile services of Indian telecom Industry will come under Introduction stage of product life cycle. It means it will take 8 to 10 years to establish 3G mobile services in Indian market. The reason behind that is poor infrastructure, technological advancement in 3G services and 2G mobile services is in growth stage now a days in Rural and tier-3 cities in India. So replacement of new technology will take some more time.

3. After that growth stage will appear in 3G mobile service segment which will start 2021 (Approx.) to 2030 near about 10-12 years. After that there will be a stage of maturity till 2039 (Approx). There is continuously innovation in telecom sector like 4 G services, 5 G services which leads the world in new communication era. So it also influences the predictions and adaptation of new technology.

4. It shows S- shaped curve which validates the diffusion of innovation by bass model.

Conclusion

We use Bass model to fit the diffusion process of mobile services and get acceptable results. It shows that diffusion model can be used as a good tool to forecast the demand of new telecommunication services. And according to the estimate of parameters, we can find that in the diffusion of telecommunication services, the coefficient of imitation (greater than the average value 0.38) is more important than the coefficient of innovation (much less than the average value 0.03). For the future, many factors, especially the activities of operators cannot be predicted.

Future scope:

One possible future research study may be executed after some years, in order to examine the difference in people's perceptions regarding 3G services, before and after the deployment of 3G. Also after the release of 3G services, the changes on the adoption rates with respect to differing prices and price sensitivities of the consumers may be examined in a further research. The substitute effects of wireless fidelity (Wi-Fi) networks and the factors influencing the choices of the consumers between 3G and Wi-Fi may also be another possible subject for future research.

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