

# DHĀRANA

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# High Growth Businesses and Low Growth Environment in Bangalore: A Study of Firm Level Data for 1998-2003\*

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## Abstract

*This paper focuses on the emergence of high growth IT businesses in Bangalore. Prior research had identified factors that held back Bangalore businesses and inhibited their growth. An analysis of new firm formation and employment growth in Bangalore over a five year period between 1998 and 2003, indicate that the IT sector employment grew through expansion and growth of existing firms. This paper highlights the mitigating influences that helped Bangalore's IT businesses overcome the barriers to growth. The significant contributions of this paper are the inferences drawn from extensive firm level data in addition to assembling of the data itself.*

**Key words:** *Entrepreneurship, firm growth, job creation, IT sector*

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## 1. Introduction

Bangalore, a metropolitan city in the southern part of India, has been a location of interest internationally due to the rapid strides it has made over the last two decades in terms of its growth, fuelled to a great extent by the burgeoning Information Technology (IT) industry. Bangalore's IT industry has been a focus of attention of researchers (Saxenian 2001). Available evidence seems

to suggest that the businesses in Bangalore start small and remain small and formidable barriers to growth exist for Bangalore businesses (Bhide 2004). However, the IT businesses in Bangalore appeared to have overcome the barriers that held back the growth of Bangalore's businesses. Very little is known about the comprehensive entrepreneurial landscape of Bangalore, and the local context in which the IT industry has achieved its growth.

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\* An earlier version of this paper titled "An Analysis of Differences in New Firm Formation and Employment Growth Between the IT and non-IT Sectors in Bangalore" was presented at the 2nd European Conference on Entrepreneurship and Innovation (ECEI 2007), Utrecht, The Netherlands, 8-9 November 2007.

The extent and quality of entrepreneurial activity in any region or a nation is impacted by the entrepreneurial framework conditions that prevail in that nation or region, as explained in the Global Entrepreneurship Monitor (GEM) model for understanding the linkages between entrepreneurship and economic growth (Figure 1). As per this model, the level of entrepreneurial activity influences a country's economic growth and job creation. The level of entrepreneurial activity is determined by the perception of entrepreneurial opportunities and the entrepreneurial potential -the motivation and capacity- both of which are influenced by the entrepreneurial framework conditions. In addition, the general national framework conditions are seen to impact the entrepreneurial framework conditions as well as the entrepreneurial activity. Both the general national framework conditions and the entrepreneurial framework conditions are in turn shaped by the social, cultural and political context of the nation (Reynolds et al 2005, Sternberg and Wennekers 2005, Manimala 2002).



**Figure 1 The GEM Conceptual Model**  
(Source: Manimala 2002)

India was seen to be lagging behind the average for the 32 countries that participated in the GEM study in 2002, in all but four of the fourteen Entrepreneurial Framework conditions that were measured by the study (Manimala 2002). Further, these weak framework conditions prevailing at the national level were found to be corroborated through a study that focused on Bangalore as a region. A study that was based on in depth interviews with a hundred high growth firms in Bangalore, revealed that the Bangalore firms started small and remained small, and were faced with formidable barriers to growth (Bhide, 2004). Many of the barriers to growth identified in this study – the indirect tax regime, labour laws and regulations, absence of property rights, poor infrastructure, propensity to own land, and common beliefs surrounding business strategies and practices - mapped onto one or more of the entrepreneurial

framework conditions identified in the GEM study (Table 1). To illustrate, the indirect tax laws and labour laws that discouraged growth and acquisition of larger scale and size, related to the government policy. Similarly, the weak enforcement of property rights and commercial contracts that forced entrepreneurs and firms to own land and lock up capital, was a reflection on the commercial and legal infrastructure. The locking up of capital also increased the financial needs, thus having implications on the financial support available. While the role of infrastructure as a framework condition was straight forward, the common beliefs of entrepreneurs about business strategy and practices that proved to be growth barriers were actually an influence of one or other of the framework conditions on the entrepreneurs. Widespread beliefs that made entrepreneurs favour diversification over attainment of scale, making over buying, providing credit over offering lower prices, and offering redundant employment over efficiency wages were all an influence of one or other of the framework conditions.

However, the firms in the IT sector in Bangalore did not seem to conform to these observed patterns. There appeared to be considerable growth in the number of firms and employment accounted for by them. Reports in the popular press, too numerous to recount here, also captured multiple dimensions of intense entrepreneurial activity in the IT sector in the form of new start ups, venture funding and prolific hiring to meet the needs of growth. These developments in the IT sector raised some very interesting and important questions that this paper sets out to answer. How different was the IT sector from the non-IT sector in Bangalore on the dimension of entrepreneurship? Were patterns of new firm formation and their employment growth different in Bangalore's IT sector from its non-IT counterparts? What enabled the IT sector firms to achieve growth in an environment not very conducive for firm growth and characterized by the weak framework conditions? The answers to these questions could provide insights to policy makers seeking to promote entrepreneurship and employment growth in a region endowed with not so favourable entrepreneurial framework conditions, given that improving the entrepreneurial framework conditions would be a time consuming task even with the best of efforts.

Entrepreneurial Framework Conditions - India	Barriers to Growth – Bangalore
<p><b>Better than the average</b> Commercial, legal and professional infrastructure Opportunities for new venture creation</p> <p><b>About the same as average</b> Financial support to new firms Skills for managing new &amp; growing ventures</p> <p><b>Worse than the average</b> Government policy on new firms Government program for new firms Education and training support Research and development transfer Market openness and ease of entry Adequacy of physical infrastructure Cultural facilitation of entrepreneurship Social support for entrepreneurship Intellectual Property Rights law and enforcement Facilitation of women's entrepreneurship</p>	<p>Property rights and enforcement</p> <p>Indirect tax laws Labour laws and regulations Inadequate infrastructure Propensity to own land and lock up capital Common beliefs about business strategy and practices</p>
Source: Adapted from (Manimala 2002) and (Bhide 2004)	

**Table 1 Entrepreneurial Framework Conditions in India and Barriers to Growth of Firms in Bangalore**

## 2. Data Sources and Collection Procedure

It is pertinent to note that databases that track the growth in employment of individual companies over time such as the Census Bureau's Business Information Tracking Systems (BITS) database in the U.S are not available in India. Several entities have at least some data on individual firms: these include telephone companies, distributors of electricity and water, industry associations, government agencies that promote small scale enterprises, some of these databases were too 'broad' because the records covered individual consumers as well as businesses and did not have tags to distinguish between the two. In other cases the coverage was too 'narrow' – the data included only some types of businesses.

The Labour department of the Government of Karnataka State, of which Bangalore is the capital city, mandates that all businesses register themselves with the government under the provisions of two acts (statutes) – the Shops and Establishment Act in the case of service businesses, and the Factories Act in the case of manufacturing businesses. The registrations under these two Acts, taken together, were determined to be

mutually exclusive and collectively exhaustive for the purpose of studying new firm formation and employment growth in the non-IT sector. Businesses can supplement their normal workforce with 'contract' employees who perform occasional or peripheral functions under conditions specified by the Contracts Act, but the registrations under the Contracts Act were found to contain too many omissions to reflect a true picture. However, since the scope of the Contracts Act was to cover jobs of a temporary nature, it was decided to focus on the legitimate ongoing businesses that were registered under the Factories act and the Shops and Establishment Act.

The discussions with officials of the labour department and the verification in the field did point to the possibility of underreporting and omissions (Bhide 2004). Notwithstanding that, the data presented here was seen to be the most reliable and thus was taken as the basis of the analysis presented in the paper.

A sampling procedure was adopted that selected every 20th record in the database of firms registered under the Shops and Establishments Act and The Factories



Act. Some of the records were incomplete in the sense that they had either not renewed their registrations by paying the appropriate fee or they had not mentioned their number of employees. In the former case, all those registrants who had not renewed their registrations were presumed to have closed down their business – or presumed dead. In the latter case, wherever the renewal fees had been paid but the number of employees had not been mentioned, the same were calculated based on the fee schedule, which varied with the number of people employed. While the S&E sample did include some IT firms, care was taken to remove the small number of eleven records of IT firms so as to ensure that the sample represented only the non-IT businesses.

The primary source of data for the IT businesses was the Software Technology Parks of India (STPI). In order to promote the IT sector and direct the policy support of the government to the IT industry, the STPI was set up as a society in 1991 by the Government of India. The policy support provided included duty free import of capital goods in exchange for undertaking export obligations, approvals for bringing in foreign equity, provision of technical infrastructure and services like satellite connectivity, temporary office space etc. (Saxenian 2001, Parthasarathy 2004). In order to avail of all these concessions and support, a registration with the STPI was mandatory, and is the first activity a new IT firm undertook. Once registered, an STPI unit (as they are commonly referred to) is also obliged to submit to the STPI authorities a quarterly as well as an annual report on various aspects of its performance, such as export earnings, the amount of import duty concessions availed, the wage bill, the number of people employed etc. The STPI collated the data in these reports and presented its own annual report to the central government.

The annual report filed by the units with STPI, Bangalore was collected for six years from 1998 to 2003 from STPI. The information contained in these records was not complete and consistent in all respects. Many units had not reported the employment data - the column had been left blank. Data on wage bills, and the average wage increases across the industry during the corresponding period were used to estimate employment wherever the employment data was not reported.

### **3. The non-IT sector**

#### **3.1 New Firm Formation**

The growth in number of units is presented in Table 2. While the number of S&E units had increased in 2003 from the 1998 levels, the number of factories had come down from the 1998 levels. Taken together, the number of registrants in the non-IT businesses had increased during the five year period. Since the number of registrants in the S&E category was far higher than the factories, the trends observed in S&E were dominating the trends in the non-IT businesses as a whole.

#### **3.2 Employment growth**

The growth in employment is presented in Table 2. The Shops and Establishments (S&E) had seen the overall increase in employment over the five year period, while the employment in factories had reduced over the same period. Taken together, the non-IT employment had increased only by 26.1% by the year 2003 from the 1998 levels. In absolute terms, there was a total increase of 111,120 in employment in the non-IT units between 1998 and 2003,

#### **3.3 Distribution of firms by size of employment**

The distribution of non-IT firms by size of employment in 1998 and 2003 is presented in Table 3. The distribution pattern of small and large units in the case of factories had seen only marginal changes during the five year period. The number of large units had increased, but the percentage share of employment accounted for by the large units had remained almost the same. But in the case of S&E units, while the percentage of small units had only marginally decreased, the percentage share of employment accounted for by them had decreased substantially. Likewise, the percentage share of large units had shown only a marginal increase, but the percentage of employment accounted for by the large units had changed substantially over the five years.

Thus, in the case of non-IT sector, both in the number of units and the employment accounted for by them, the share of smaller units showed an increasing trend, and the share of larger units showed a decreasing trend, during the



	Number of Units			Employment		
	S&E**	Factories**	Total***	S&E** (A)	Factories** (B)	Total Non-IT*** (A+B)
2003	35,940	2,660	38600	292640	243260	535900
2002	28,120	3100	31220	221520	286220	507740
2001	21,720	3320	25040	148920	316080	465000
2000	17,020	3720	20740	108780	346800	455580
1998	18,340	3500	21840	106740	318040	424780
Percentage increase (decrease) in 2003 over 1998	95.96	(24)	76.7	174	(23.5)	(26.1)

Note:

\*: Units is the term used in the S&E & factories Acts. Since each physical location needed to be registered, a firm can register more than one unit. The data presented here is at the unit level.

\*\* : Equals sample multiplied by 20

\*\*\*: Total Non-IT is the sum of S&E and Factories numbers

Source: Research team analysis of registration data collected from Department of Labour, Government of Karnataka

**Table 2 Number of Units\* and Employment in the non-IT sector during 1998-2003**

period 1998-2003. In 2003, the smaller units still accounted for 89.7% of all units, but employed only one third of the people employed in the non-IT sector in 2003.

### 3.4 Employment changes due to the dynamics of firm births, expansion and deaths

Beyond the static distributions presented above, the underlying patterns of firm births, expansions,

contractions and closures provided an insight into the dynamics of this process. Table 4 presents the data about the births, deaths, expansions and contractions of units and the corresponding changes in employment during the period under discussion. A lot of turbulence was observed in the non-IT sector. The number of new S&E units that registered during the period was almost twice the number at the beginning of the period, but the

		S&E (A)		Factories (B)		Total-Non-IT (A+B)	
		1998	2003	1998	2003	1998	2003
Units Employing <20 persons	No. of units (% of total units)	96.6	95.6	1.7	9.0	81.4	89.7
	Employment (% of total Employment)	77.8	57.8	0.2	1.6	19.7	32.3
Units Employing >100 persons	No. of units (% of total units)	0.2	0.5	66.9	57.1	5.8	2.5
	Employment (% of total Employment)	5.9	23.6	73.7	73.4	56.7	46.2

Source: Research team analysis of registration data collected from Department of Labour, Government of Karnataka

**Table 3 Distribution of non-IT Units by Size of Employment**

number which closed was also not trivial, amounting to almost half of the units that were in existence in the beginning of the period. In the case of factories also, the number of new units that registered were almost equal to those that were in existence at the beginning of the period, and those that closed were more than the number at the beginning of the period.

The corresponding changes in employment also revealed a high level of churn. Even though the new employment created by the factories – both through new units and expansions - amounted to nearly sixty percent of the employment that was there at the beginning of the

period, they lost as many jobs as there were at the beginning of the period due to contractions and closures, thus resulting in a net reduction of jobs. The S&E units created more than twice as many jobs as they had at the beginning of the period through new units and expansions, but lost less- roughly half as many jobs as they had at the beginning of the period due to contractions and closures- thus resulting in a net increase of almost the same number of jobs as there were at the beginning of the period. Thus, the S&E units gained enough jobs to more than offset those losses and achieve a net positive addition to the employment in the non-IT sector at the

Estimates for Bangalore population/STPI units		Non-IT		
		S&E * (A)	Factories* (B)	Total Non-IT (A+B)
Number of registrants/units and employment at the start of the period	Units	18260	3000	21260
	Employment	105940	278240	384180
Number of registrants/units and employment at the end of the period	Units	35780	1700	37480
	Employment	290480	162180	452660
Net change in number of registrants/units and employment over the period	Units	17520	-1300	16220
	Employment	184540	-116060	68480
New registrants/units and employment - "births"- during the period	Units	27360	2580	29940
	Employment	226720	160680	387400
Total "deceased" registrants/units who closed or presumed closed, and the employment lost during the period**	Units	7700	3840	11540
	Employment	49940	284840	334780
Number of registrants/units who expanded in the period and the employment added**	Units	1200	220	1420
	Employment	15340	11100	26440
Number of registrants/units who contracted in the period and the employment lost**	Units	820	40	860
	Employment	5020	3000	8020
*:Equals sample multiplied by 20				
**: Includes only those registrants who had registered before the start of the period and whose registrations were current at the end of the period for S&E and Factories. In case of IT units, includes units that were existing prior to 1999 and those that were opened in the period 1999-2003				
Source: Research team analysis of (i) registration data collected from Department of Labour, Government of Karnataka				

**Table 4 Non-IT Units: Births, Expansions and Deaths and Employment Changes**

end of the period. This churn meant that the non-IT units ended up creating six new jobs during the five year period to achieve one additional job at the end of the period.

The break-up of the new employment created by its source i.e. either through the birth of new units or the expansion of existing units presented an interesting picture. It is evident that in the case of non-IT businesses, the growth in gross employment was predominantly driven by the birth of new units and the expansion of existing businesses contributed only marginally to the increase in gross employment.

## 4. The IT Sector

### 4.1 New Firm Formation

The growth in number of units is presented in Table 5. In the case of IT businesses, the increase in number of new units had been much higher than the non-IT businesses in percentage terms. But in terms of absolute numbers, the IT units were much lower than the non-IT businesses.

Year	No. of units*	Employment
2003	569	109,076
2002	515	73,784
2001	501	63,372
2000	168	33,934
1998	129	21,648
Percentage increase (decrease) in 2003 over 1998	341	403.86
Note: *: Units is the term used by STPI. Since each physical location needed to be registered, a firm can register more than one unit. The data presented here is at the unit level. Source: Annual reports collected from STPI, Bangalore		

**Table 5 Number of Units\* and Employment in the IT Sector during 1998-2003**

### 4.2 Employment Growth

The growth in employment is presented in Table 5. The increase in employment in the IT units in the corresponding period was 87,428. Though not remarkable in absolute terms, the rate of increase in employment over the five year period 403% increase from the levels prevalent in

1998 – indicated a trend that was quite positive and aggressive.

		1998	2003
Units Employing <20 persons	No. of units (% of total units)	34.2	26.3
	Employment (% of total Employment)	2.1	1.4
Units Employing >100 persons	No. of units (% of total units)	30.2	30.6
	Employment (% of total Employment)	87.4	87.9
Source: Research team analysis of Annual reports collected from STPI, Bangalore			

**Table 6 Distribution of IT Units by Size of Employment**

### 4.3 Distribution of firms by size of employment

The distribution of IT firms by size of employment in 1998 and 2003 is presented in Table 6. The share of smaller units, both in number and employment accounted for, was decreasing, while the share of large units remained stable at roughly a third of all units. In 2003, the smaller units accounted for less than a third of all units, and their share in employment was a mere 1.4%, while the larger firms accounted for almost ninety percent of the total employment in the IT sector. Thus, amongst the IT units, the larger units employing over 100 persons accounted for the largest share of employment. The larger units had maintained their share of number of units, despite the more than fourfold increase in the number of units during the period 1998-2003, while the smaller units had decreased in proportion.

### 4.4 Employment changes due to the dynamics of firm births, expansion and deaths

Table 7 presents the data about the births, deaths, expansions and contractions of units and the corresponding changes in employment during the period under discussion. The employment in the IT units presented a striking contrast. The number of IT new units was almost five times those that were in the beginning of the period, and the net increase in the number of units was in excess of four times the number of units at the beginning of the period. The

increase during the five year period in employment in IT businesses due to the birth of new units and expansion of existing units was four and a half times the employment at the start of the period. But the IT sector lost very few jobs, and net increase was only marginally less, at four times the employment that existed at the beginning of the period. Thus, in the case of IT businesses, the increase in employment has hardly been dampened by the loss of jobs, and the net addition of each job has warranted the creation of only 1.13 new jobs.

<b>Estimates for Bangalore population/STPI units</b>	<b>Units</b>	<b>Employment</b>
Number of registrants/units and employment at the start of the period	129	21648
Number of registrants/units and employment at the end of the period	569	109074
Net change in number of registrants/units and employment over the period	440	87426
New registrants/units and employment - "births"- during the period	614***	37733
Total "deceased" registrants/units who closed or presumed closed, and the employment lost during the period**	91	4076
Number of registrants/units who expanded in the period and the employment added**	319	60923
Number of registrants/units who contracted in the period and the employment lost	107	4522
***:14 units for which employment data was not available are included Source: Research team analysis of Annual reports collected from STPI, Bangalore		

**Table 7 IT Units: Births, Expansions and Deaths and Employment Changes**

Of the gross new jobs created by the IT businesses, only 38.2% was accounted for by the birth of new firms, but

61.8% of the new jobs created were due to the expansion of the existing units.

## 5. Observed Differences between the IT and non-IT sectors

The units in the IT sector differed from their non-IT counterparts, in the rate of growth of employment, the source of increase in employment and the distribution of employment across firms of different sizes. A greater share of employment was accounted for by the larger firms in the IT sector. The job creation in the IT sector was dominated by expansion of the units, whereas the non-IT sector created new jobs predominantly through creation of new units. The IT sector exhibited much less churn and their units exhibited a propensity to grow.

It is obvious that the IT businesses in Bangalore have managed to overcome the barriers to growth that were experienced by all businesses in Bangalore. It then warrants an explanation as to how the IT businesses managed to break the barriers to growth and what specific factors contributed to their being able to overcome the barriers and the weak entrepreneurial framework conditions. An understanding of these factors may in turn provide valuable inputs that could facilitate policy makers to create conditions, and entrepreneurs to adopt strategies that could effectively contribute to the breaking of growth barriers.

## 6. Inferences and conclusions

Three major factors seem to have enabled the IT businesses in Bangalore to break the barriers to growth- the inherent characteristics of the IT industry, the market forces and focused policy support from the government.

The characteristics of the IT industry – particularly its focus on global market and process innovation- seem to have played a dominant role to play in overcoming the barriers to growth. The offshore outsourcing was turning out to be an innovative process driven opportunity that was just ripe for adoption on a large scale. This in turn led the IT industry to focus on the global market and become highly export oriented. Many of the world's largest firms, who were keen to adopt this innovation both as providers and consumers, not only contributed to a robust growth in demand, but also to building scale and capacity. Being a service industry, the supply chain of this industry was

very short, with very minimal involvement of physical goods in its value chain. The major resource driver of this industry was the skilled engineers, and not the blue collared workers. This technically skilled, white collared workforce flocked to this industry once they recognized the opportunity for career growth.

The infrastructure limitations were overcome with the help of market forces that enabled the IT sector to create the required infrastructure on its own. The IT sector's ability to create, to a large extent, its own infrastructure, was a result of interplay of the industry characteristics and market forces. The firms in the IT sector were able to buy their own power plants (diesel generating sets), since their requirement of power wasn't of the industrial scale. While this low capacity requirement enabled the IT businesses to acquire their own power plants, it also led to market initiatives that created the capacity to supply and maintain these power plants or diesel generating sets. A similar line of reasoning explains the bypassing of limitations posed by another aspect of deficient infrastructure - the absence of good roads and public transport. Being a service industry, the IT businesses did not warrant movement of physical goods, and the transport facilities required for the movement of people to their place of work and back was easily provided by the private service providers. Similarly, the private market also played a role in supplying the commercial real estate required by the IT sector, by building the commercial office space and renting them out to the IT sector firms.

The targeted policies of the government also played its part. The Government of India had long recognized the potential of the IT sector, particularly with respect to exports, and was steadily improving the policy environment for this industry, taking into consideration its unique needs. The Software Technology Parks of India (STPI) scheme, which was introduced in 1991 to function as a single window to support the software industry, was in a way a recognition on the part of the government of the need to support the IT businesses, both with respect to their unique needs and to minimize the barriers faced by them in setting up and running their

businesses. The STPI scheme minimized the need for the firms in the IT sector to deal with multiple departments in the government, and provided a guided passage for foreign firms to set up their operations in India. Since the benefits offered under the STPI scheme were not related to the size of the firm, there was no specific incentive for any firm in the IT sector to remain small to avail these benefits. In addition, the STPI worked closely with the state government to address any issue concerning the IT sector's needs in terms of local infrastructure – be it roads, power, land with clear titles etc, albeit to a limited effect.

Thus, on balance, the characteristics of the IT industry (sector) had a significant role to play in mitigating the barriers to growth faced by Bangalore units. The market forces also helped, though in many aspects the characteristics of the IT industry combined with the market forces to mitigate the barriers. The role of targeted policies, aimed at supporting the growth of the IT sector also had a considerable role to play in overcoming the barriers to growth.

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# Era of Social Entrepreneurship

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## Abstract

*This paper documents success stories of entrepreneurs, entrepreneurial organizations through their commitment to a social cause. While wealth distribution is an important as wealth creation, wealth sustenance can be fostered through social entrepreneurship. Business Horizon is expanded through corporate owing up for social causes. Business mission, among other things should expand to temporal societal needs.*

**Key words:** *Social business, trusteeship, corporate social responsibility, sustainable development, social mission.*

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## 1. Introduction

Social entrepreneurs and social enterprises share a commitment to furthering a social mission and improving society. Some of the basic definitional issues that remain include the choice of for-profit / nonprofit structure, the necessity of earned-income strategies among nonprofits, and the degree to which social entrepreneurs/enterprises can manage the toughest social and environmental issues.

America's richest billionaires are competing against each other to see who can give the most to charity and fund close to their heart. With the announcement by Bill Gates for the establishment of Bill & Melinda Gates Foundation and to support the "Grand Challenges in global Health Initiative", he joined an increasing list of extremely wealthy individuals who had decided it was payback time. A report by 'Conde Nast Portfolio', aptly titled "The Generosity Index", has assessed their level of philanthropy by highlighting how much

these billionaires have donated to charitable causes over the years. Warren Buffet, second wealthiest businessman and promoter of Berkshire Hathaway with net worth of \$52 billion donated \$46.1 billion on social cause from 2002-06. Bill Gates, ranked No. 1 in wealth, and promoter of Microsoft with net worth of \$59 billion gave away \$3.7 billion in 2002-06 and \$10 billion in 2007-08 to manage healthcare initiatives. Eli Broad, the promoter of Sun America and KB Home with net worth of \$7 billion gave \$ 1.15 billion in 2002-06 and \$609.3 million in 2007-08 on the development of education, arts, science and healthcare. George Soros of Soros Fund Management with net worth of \$9 billion donated \$1.1 billion in 2002-06 and \$474 million in 2006-08 on poverty, education, science and healthcare. John Kluge, ranked No. 31 in wealth and promoter of Metromedia with net worth of \$9.5 billion gave \$ 76 million in 2002-06 and \$410 million in 2007-08 on education and arts. Michel Bloomberg with net worth of \$ 11.5 billion gave away \$ 715 million in 2002-06



and \$ 205 million in 2007-08. David Koch, ranked No. 9 in wealth ranking and promoter of Koch Industries with net worth of \$17 billion donated \$63 million in 2002-06 and \$ 228 million in 2007-08 on healthcare and arts. Pierre Omidyar ranked No. 32 aged 41 and promoter of eBay with net worth of \$8.9 billion gave \$ 549 million in 2002-06 and \$ 109 million in 2007-08 on education, science, healthcare and arts. Michael Dell of Dell with net worth of \$17.2 billion gave \$674 million in 2002-06. Now day's investors are looking for investment in socially responsible companies. Socially Responsible Investing (SRI) is the practice of making investment decisions on the basis of both financial and social performance of a company. SRI imposes moral, ethical, and environmental constraints on the investment process. A social enterprise is "a business with primarily business objectives whose surplus are principally reinvested for the purpose in the business or community, rather than being driven to maximize profit for share holder and owners" (Carnelius, et al (2007).

## 2. Social Entrepreneurs

When multinational companies were setting up expensive health care facilities across the world, Dr. Govindappa Venkataswamy resolved to do something for the poor. He set up the Aravind Eye Care Hospital at Madurai, which offers the best facilities at rock bottom prices. Since its inception, Aravind has given sight to more than one million people in India. Dr. Venkataswamy may not run a business, but it is important to note that Aravind's surgeons are so productive that the hospital has a gross profit margin of 40%, despite the fact that 70% patients pay nothing or close to nothing, and that the hospital does not depend on donations. Aravind evolved an eye surgery technique that increases a surgeon's productivity by a factor of 10. This business model ensures that millions of poor, visually-impaired people can be operated for free or nearly free, and that the hospital still makes 40 percent operating profit.

Prof. Mohammed Yunus of Bangladesh set up the Grameen Bank, which pioneered the concept of giving micro loans to the people below poverty line. These micro loans have made a big impact in helping the poor people start their own business and uplift themselves from the clutches of poverty. The bank has till now

helped 7000 micro-lenders with 25 million clients world wide. In this process, Grameen Bank has made healthy margins for themselves and also contributed to the national economic growth in a big way. This Chittagong University economics professor who won the Nobel Peace Prize in 2006, first lent \$27 to a few poor farmers in 1976 now the Bank has 2422 branches with aggregate loan s of more than \$6.8 billion. In his book "Creating a World without Poverty" subtitled "Social Business and the Future of Capitalism", he contends that the form of capitalism practised today, assumes the human being to be a one-dimensional creature, his sole objective being profit-maximization. This narrow view has led to systems that incentivize profit-seeking behaviour and discourage expression of the social, emotional and spiritual sides of the human personality. Prof. Yunus contends that we can enable the multifaceted and creative expression of human personality and hence alter the poverty equation by recognizing and encouraging a new kind of business - a social business. A social business is different from a conventional profit-maximizing business in that its bottom-line is not economic, but social. It measures its success by the promotion of social well-being. It also differs from a non-profit organization which is unlike the latter, it is self-sustainable and hence does not rely on a steady flow of donor funds.

A social business can achieve its objectives in two ways. In the first model, the business is owned by investors who seek social benefits such as poverty reduction, child education and so on. The investors, seeking psychological, spiritual and emotional rather than economic returns, invest in the social business for the same reasons as they donate money to charity. The investors can recoup their investment, as the social business attains full cost recovery after a certain period of time. However, rather than distributing to the owners/ shareholders, profits obtained are fully reinvested in the business. Hence, this is a non-loss, no-dividend model. In the second model, the social business operates as a profit-maximizing business that is owned by the poor or the disadvantaged. Hence, profits incurred by the business go directly to the poor, thereby helping them reduce their poverty or to escape it altogether. What is wonderful about social business is that it recognizes



the human being for what he is – a multidimensional being. It provides a system for him to do good to his fellow-beings in a self-sustainable way. Social business offers alternative career and life paths to students and other individuals hungry for a life rich in meaning beyond profit. Most important, it will enable the poor to express their enormous gifts for entrepreneurship, creating newfound abundance for themselves, their families and communities (Mahipally 2009).

Ela R. Bhatt established Self Employed Women's Association in Gujrat with the formation of women group and cooperatives. Now SEWA has 8000 members and a SEWA Bank of which members and employees are women. Many other women social entrepreneurs have demonstrated their social activism through contribution in society. Dr. Ragini Prem always worked with Prem Bhai as co-worker in Banvasi Seva Ashram and is now managing the programms of the Ashram in the tribal dominated areas of Sonbhadra (UP). Medha Patkar, the Magsasay Awardee, always worked for the cause of common people. She led Narmada Bachao Andolan and other activism related organizations. Writer turned social activist Arundhati Roy has always fought for the cause of displaced community. Vandana Shiva established Navadanya and worked towards environment consciousness efforts. Spiritual mothers like Maa Amritandai have awakened their followers in behaviour modification, spiritualism and mass education. Arun Roy's efforts in the enactment of Rights to Information Act will be remembered always.

Rajendra Singh of Tarun Bharat Sangh decided to work for the improvement in the drought prone area of Rajasthan. He undertook massive work on water related infrastructure development with the cooperation of local community. He was awarded with Roman Magsasay Award for his contributions in community work.

The social entrepreneurship inspires a person or group to work for the betterment of community. Social entrepreneurship can be successful if it had a mix of creativity and innovation. A distinction can be made between creativity and innovation. The term creativity usually refers to the ability and power to develop new ideas. Innovation, on the other hand, usually means the use of these ideas. Creative process generally consists

of (1) unconscious scanning (2) intuition (3) insight and (4) logical formulation.

Eminent scientist and former chairman of the University Grants Commission Professor Yash Pal said that Indian industry and the education system lacked "creativity" and did not promote innovations that happen at local level within the country. Innovations happen in India too. He applauded National Innovation Foundation for scouting more than 51,000 innovations during the past five years from over 400 different places of which 15 technologies have been commercialized. He said that practical knowledge was not imparted to the students who were tested only on their cramming or memorizing skills; students are taught from some text-books and are not to think out of it. Creativity is not stressed in the curriculum and so the students do not think differently. Ability to think differently is an important factor that leads to future innovations.

The 21st century favours knowledge, ideas and creativity. This century is about young, restless minds pushing the digital age forward. This will require creative companies, quality educational institutions, and ideas pouring forth in all forms and an innovation system. Knowledge remains key to India's position in the world. IT services, jewelry, pharmaceuticals, handicrafts have powered India's recent economic performance. As in the past, our soft infrastructure (creativity, ideas and open borders) far exceeds our hard infrastructure (highways, ports, power and so on) in global competitiveness.

In Trichhirapalli, J.K. Tripathy led the transformation of the police force from an image of 'extortionist' to 'anna' (elder brother). Subsequently, the crime rate dropped by 40 percent – and that too in a communally sensitive town. With an innovative concept called 'community policing', wherein a group of four policemen took ownership for the law and order of a community, was adopted. They won their trust by engaging with them proactively, and preventing law and order problems rather than merely, reacting to them. Now 'community policing' is being exercised everywhere. Tripathy demonstrated that the real issue is absence of creative leadership and the capacity to lead change.

India's voluntary sector has been known for its creativity and innovation. Innovative and creative efforts have

been recognized from time to time. Now, with this result few programmes are being implemented exclusively by NGOs. People living in islands dotting Assam's Brahmaputra river no longer worry about isolation as a hospital floats up to them at least twice a month to check on their health. Akha – a boat with medical personnel and supplies – is a unique door-to-door service for the poor inhabitants of the state's islands. Akha, which means 'hope' in Assamese, is the brainchild of the Association for India's Development (AID) and Centre for North East Studies and Policy Research (C-NES). The NGO was sensitive to the vulnerability of those who lived in the rural islands, far away from hospitals and communication. The boat has space for on-board treatment of basic health problems and also provides referral services. It accommodates health professionals and can be turned into a training centre. This was funded by prize money from a World Bank competition won by C-NES volunteers and a group of grass-root boat-builders in 2004. With the India Country-level Development Market Place award of \$20,000 (Rs. 9,00,000), volunteers could realize their dream of treating the unreachable under-privileged sections. This creative thought is a true and successful example of public-private partnership under which Assam Medical College, Dibrugarh provides the medical facilitation while district administration supplies the fuel for vessel.

The Nehru Gram Bharati University has taken a leap in being social entrepreneurship centre. From organizing farmer's training, training of rural women on entrepreneurship, health camps on public-private partnership and cloth donation programme to imparting formal higher education to youths in different disciplines, the university embarked on innovation and creativity.

### **3. The Corporate Social Responsibility**

Corporates and business community are now taking interest in increased involvement in the implementation of socially responsible activities. The concept of Corporate Social Responsibility (CSR) in India is not new, the term may be. The process though acclaimed recently, has been followed since ancient times albeit informally. Philosophers like Kautilya from India of pre-Christian era, Philosophers in the West preached and

promoted ethical principles while doing business. The concept of helping the poor and disadvantaged was cited in much of the ancient literature. The idea was also supported by several religions where it has been intertwined with religious laws. "Zakaat", followed by Muslims, is donation from one's earnings which is specifically given to the poor and disadvantaged. Similarly, Hindus follow the principle of "Dharmada" and Sikhs the "Daashaans".

Philip Kotler and Nancy Lee (2005) define CSR as "a commitment to improve community well being through discretionary business practices and contributions of corporate resources" whereas Mallen Baker refers to CSR as "a way companies manages the business processes to produce an overall positive impact on society." According to World Business Council for Sustainable Development "Corporate Social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large".

According to the prolific American author on CSR, Archie B. Carroll, Harold Bowen was "The father of corporate social responsibility." In 1953, Bowen published the 'Social Responsibilities of the Businessman'; although Carroll points out that there were "references to a concern for social responsibility" in the 1930s and 1940's. In 1946, Fortune Magazine had already surveyed "businessmen" about their social responsibilities. (Carroll 1999: 270) and even earlier than this, Mary Parker Follett had written about "...the idea of service [in business] as expressing man's altruism" (Follett, [1925] 1973: 103).

While addressing the annual session of the Confederation of Indian Industry (CII), Prime Minister Dr. Manmohan Singh said, "the business community should resist excessive remuneration to promoters and senior executives so as to reduce conspicuous consumption because these aspects could sow seeds of social unrest." Advocating a "10-point social charter" for sharing the benefits of economic growth with the less privileged and partnering a humane and just society, he reminded the corporate sector of its social

responsibilities towards the common man. "Corporate social responsibility must not be defined by tax planning strategies alone. Rather, it should be defined within the framework of corporate philosophy which factors the needs of the community and the regions in which a corporate entity functions" (Dasgupta, 2007).

Companies have spread their wing in the remote rural areas through various initiatives like ITC's through e-choupal, DCL through Hariyali Kisan Bazar, Godrej Agrovet through Adhar, Tata Chemicals through Tata Kisan Kendra. The 'commitment beyond the market' shapes the quality of company's partnerships with the various constituents of value chains- farmers, suppliers, employees and the government. Such a commitment propels these companies to contribute far beyond servicing financial capital to enlarging economic, social and environmental capital for the nation. This unique spirit of synergizing business objectives with a larger sense of social and environmental purpose is called 'triple bottom line approach'.

#### **4. The Trusteeship Doctrine**

Gandhiji advocated trusteeship doctrine all through his life. It is based on the principle that all people having money or property hold it in trust for society. Society is to be regarded as a donor to the individual and accordingly the latter is required to share part of his acquired wealth with the society for mutual benefit. According to this doctrine business organizations have to be viewed as socio-economic institutions to be run and owned by 'Trust Corporation' with considerably diluted shareholdings. Many industrialists of eminence like Jamna Lal Bajaj, G.D. Birla supported generously in the reconstructive assignments of Gandhiji. Most of the ideas of Mahatma Gandhi on trusteeship find expression in his speeches, short notes, and press interviews and informal discussions. Written in Nov. 26, 1932 issue of Young India, Gandhiji made the following observations with regard to doctrine of trusteeship.

'My idea of society is that while we are born equal, meaning thereby that we all have a right to equal opportunity, all have not the same capacity. It is in the nature of things impossible. For instance, all cannot have same height, colour or degree of intelligence.

Therefore, in nature of things, some will have ability to earn more and others less. Normally, people with talents will have more. Such people should be viewed to exist as trustees and in no other terms.

Organization and individual possessing surplus wealth over and above their legitimate and genuine needs should spend it on community welfare programmes as part of their social responsibility. Echoing such views on the subject, Gandhiji added:

'Suppose I have earned a fair amount of wealth either by way of legacy or by means of trade and industry. I must know that all that belongs to me is the right to an honorable livelihood no better than what enjoyed by million of others, the rest of my wealth belongs to the community and be used for the welfare of the community.'

In his address to the trade unions in Sri Lanka during 1927 visit, Gandhiji observed that principles of trusteeship doctrine are applicable to the trade unions in the same way as these are to the business organization. According to him:

'Each of you should consider yourself to be a trustee for the welfare of the rest of your fellow labourers treatment from your employers, proper sanitary lodgings, you will recognize that you should treat the business of your employers as if it were your own business and give to it your honest and undivided attention.'

Corporations, under pressure from governments and civil society, have recognized the need to be more responsive to societal concerns, and are beginning to address some challenges. Consequently, a number of industry-wide and sector-specific voluntary norms and agreements on human rights, accountability, and environmental stewardship have emerged.

#### **5. Status of Social Entrepreneurship in India**

India has a proud history of social entrepreneurship. Jamnalal Bajaj and GD Birla generously supported Gandhiji in his efforts of fight with British and promotion of rural reconstruction. JN Tata and other promoters of Tata group have been actively involved in the implementation of various development and welfare programmes in the country. The group

established Tata Institute of Social Sciences, Tata Institute of Fundamental Research, Indian Institute of Science to impart good quality education and research opportunities for students. Sudha Murthy, Rohini Nilekani, Rajshree Birla and other business ladies are now actively involved in social entrepreneurship. Government and industry associations have established awards to honour social entrepreneurs. Arbind Singh won Nand and Jeet Khemka Social Entrepreneur Award 2008 for his contribution in the field of social entrepreneurship.

## 6. The Road Map Ahead

XLRI Jamshedpur has established a Social Entrepreneurship Trust to promote social entrepreneurship among students and alumnus. SP Jain Institute of Management, Mumbai and SAVJ Institute of Management, Ludhiana has Centre for Corporate Social Responsibility which acts for the development social entrepreneurship among students. Tata Institute of Social Sciences, Mumbai conducts MA (Social Entrepreneurship) course to prepare. But, education and training in social entrepreneurship is yet limited considering its application and need of professionals. Universities, IITs, management institutes and other institutions are required to promote social

entrepreneurship among youths. Ford Foundation, Ashoka Trust and other organizations offer scholarships to individuals and organizations to work for the social entrepreneurship.

Corporates, voluntary organizations and social activists are coming together to pool resources and expertise to further social mission, a good journey towards social entrepreneurship.

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# Analysis of Stock Price Behaviour around Bonus Issue: A Test of Semi-Strong Efficiency of Indian Capital Market

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## Abstract

*Stock price behaviour around bonus issue have been examined for 134 bonus issues of NSE listed companies in India. Two null hypotheses have been tested for similarity between mean and distribution pattern of bonuses by employing "t" and Kolmogorov-Smirnov tests. The results lead to rejection of both hypotheses. As such it is concluded that Indian stock market is semi strong efficient.*

**Keywords/Phrases:** Bonus Issues, AAR, CAAR

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## 1. Introduction

The premise on which the theory of efficient markets rests is that in a free and competitive capital market, the prices of the securities should reflect all available information and that these prices should adjust very quickly to new information. The new information can come in the form of announcement of quarterly results, announcement of new business deal entered into by the firm, announcements regarding dividends, bonus and such other firm specific events. In an efficient market, the reaction of the market to new information can be studied under a) the type of information that the market is reacting to and b) the speed with which the market responds to that information.

In this study, stock price movement around bonus announcements is taken for examination.

## 2. Review of Literature

The study with regard to testing for semi-strong form of efficiency of the market was pioneered by the work

of Fama, Fisher, Jensen and Roll (1968). They applied cumulative average residual error (CARE) methodology to examine the NYSE's reaction to stock splits and found evidence in support of the proposition that the NYSE was semi-strong efficient. Firth (1977) repeated this study with UK data on scrip issues and arrived at a similar conclusion. Using the methodology of Fama et al (1969), Ball and Brown (1968) developed an abnormal performance index (API) methodology and examined the market reaction to earnings announcements. They divided their sample into those firms which announced earnings above expectations and those which announced earnings below expectations. Their conclusions supported semi-strong form of efficiency of the market.

In the Indian environment Chaturvedi (2000) studied the behaviour of stock prices around half yearly financial announcements. His study documented that the abnormal returns were not only statistically but also economically significant. The findings suggest that the

earnings information is not assimilated rapidly. In his further study, Chaturvedi (2001) found in an examination of the stock price reaction in relation to the earnings that abnormal returns occur both in the pre and post announcement periods. Thus both his studies document that Indian markets are far from being efficient.

Srinivasan (2002) documents the existence of extremely large positive abnormal returns on ex-bonus and ex-rights dates for equity in Indian capital market. He argues that tax regime can motivate trading strategies around the ex-dates. He concludes that the tax regime can lead to significant positive abnormal performance if long-term investors are the equilibrium price determining investors.

Katati (2001) examined the behaviour of stock price around bonus announcement date and ex bonus date of 115 bonus issues made between January 1995 and March 1999. The study establishes that stock prices rise before the announcement and fall after the announcement. The author is of the opinion that a profitable strategy could be evolved by buying shares cum-bonus and selling them ex-bonus.

Lukose and Rao (2005) investigated the relevance of signalling hypothesis by examining market reaction and operating performance around bonus issues for a large sample of 464 companies listed on the BSE. Their study documents a cumulative abnormal return of 12.73% for an 11 day period surrounding bonus announcements. They also found that the abnormal returns are positively related to bonus ratio and negatively related to the size of the firm, which is consistent with the signalling hypothesis.

A study done by Mishra (2005) on 46 bonus issues (made between June 1988 and August 2004) on companies listed on the NSE, found that in line with the developed markets, Indian capital market exhibited significant abnormal returns for a five day period prior to bonus announcement. The behaviour of the Average Abnormal Returns (AAR) and Cumulative Average Abnormal Returns (CAAR) is found to be in accordance with the expectations, thereby lending support to the hypothesis that Indian stock market is semi-strong efficient.

The uniqueness of the present study consists in application of the event study methodology on the daily share price return surrounding 60 days of the 'announcement' of these price sensitive events as well as the 'record dates' of application of these events. A parametric test (t test) and a non-parametric test (Kolmogorov –Smirnov test) to see the equality in means of the returns before and after the event and distribution patterns of returns before and after the event, respectively, are employed.

### **3. Research Problem**

It is generally perceived that the declaration of bonus shares is the signal by the company of its future growth and earnings potential. From the investors' point of view it is a trigger for an upward revision of the company's future earnings capacity. Hence announcement of bonus issue is highly price sensitive.

The present study on 134 bonus issues intends to examine whether the stock market is so efficient that it incorporates the effect of impending bonus announcements in its share prices in advance, making the actual announcement insignificant or whether the bonus announcements take the market by surprise allowing a few information mongers to take advantage of the situation and earn abnormal profits.

### **4. Objectives of the Study**

1. To study the reaction of the stock prices around the bonus announcement date.
2. To examine the equality of means for the returns before and after announcement of bonus issue.
3. To test whether there is significant difference in the distribution pattern of returns before and after the announcement of bonus issue.

### **5. Methodology**

This study primarily based on event study methodology (Brown and Warner, 1985). The event study methodology enables to compute Cumulative Average Abnormal Returns (CAAR) of the respective share prices during the days surrounding the announcement of price sensitive information. If there is scope to gain abnormal returns or if a trading strategy could be evolved to



earn abnormal returns on the announcement of price sensitive information, then the market is said to be inefficient. The t test to measure the equality of mean returns around the bonus announcement as well as the Kolmogorov – Smirnov test to determine whether there is significant difference in the distribution pattern in the abnormal returns before and after the announcement of bonus issue, are used to supplement the findings of the event study methodology.

### 5.1 Choice of 'events' for the Study

The announcement dates as well as the record dates of Bonus Issues of the companies listed on the NSE and belonging to S&P CNX 500 companies have been procured from three sources - Prowess, Capitaline data base and NSE website. The sample of 134 Bonus Issues is short-listed for analysis applying the following criteria:

- a. The company issuing the bonus shares should belong to S&P CNX 500 companies list.
- b. Daily closing stock price data over a period of 280 days before the announcement date and 30 days after the record dates are available from the databases.
- c. The bonus issue has to be an issue of new ordinary fully paid securities and not issued as rights issue or bonus option issue.
- d. The bonus announcement date is reported in any of the leading financial dailies viz., Financial Express, Economic Times, Business Standard or Business Line.
- e. 134 events of bonus announcements were further broken up into 4 categories.
  - a. companies that issued bonus at the ratio of 2:1 or more
  - b. companies that issued bonus at the ratio of 1:1
  - c. companies that issued bonus at the ratio of 1:2
  - d. companies that issued bonus in the ratio other than the above three categories.

There were 9, 77, 20 and 28 companies respectively in the above four categories of bonus issues under study.

### 5.2. The Application of the Event Study Methodology: Definition of Variables

The dates of the respective board of directors' announcements regarding the issue of bonus shares and record dates of bonus issue were denoted as the 'event day'. 60 days surrounding the event day (30 days before and 30 days after the event) have been denoted as 'event window'. 250 days prior to the last day of the event window (i.e. -280 to -31 days from the event day) has been considered the 'estimation window'. The Nifty index returns were taken as proxy for market index. 250 days of returns during the 'estimation window' of the respective shares were regressed against the Nifty returns to determine the 'constant' and the 'regression coefficient' to calculate the expected returns during the 'event window'. The difference between the actual return and expected return during the event window is considered the abnormal returns. Cumulative Average Abnormal Returns (CAAR) are then calculated and analysed.

Event Study Methodology has been used to test the hypothesis. To measure the abnormal returns, the first order regression is run

$$\bar{R}_{it} = \alpha_i + \beta_i \bar{R}_{mt} + \varepsilon_{it}$$

where

$\bar{R}_{it}$  = expected return on security 'i' on day 't'

$\bar{R}_{mt}$  = return on the market portfolio on day 't' i.e., return on Nifty on day 't'

$\beta_i$  = systematic risk component of security 'i'

$\alpha_i$  = intercept term for security 'i'

$\varepsilon_{it}$  = white noise error term to security 'i' on day 't' having zero mean and constant variance

The deviation of actual return from the expected return is regarded as the abnormal return and is defined as follows

$$AR_{it} = R_{it} - (\alpha_i + \beta_i \bar{R}_{mt})$$



where

$AR_{it}$  = abnormal return on security 'i' on day 't'  
 $R_{it}$  = actual return on security 'i' on day 't'

The average abnormal returns of the securities for each relative day 't' were calculated as

$$AAR_t = \frac{1}{N} \sum_{i=1}^N AR_{it}$$

where, N = number of securities for day 't'

Cumulative Average of Abnormal Returns (CAAR) are the sums of daily average of cumulative abnormal returns over the event time.

The CAAR for period t = a until t = b is defined as follows

$$CAAR_{ab} = \sum_{i=a}^b AAR_t$$

Day '0' is defined as the 'event day' i.e., trading day on which the price sensitive announcement is made.

The  $\alpha_i$  and  $\beta_i$  were estimated from day -280 to day -31 days from the event day to calculate abnormal returns from day -30 to day +30 around the event day. The t statistic that tests whether the average excess return of the portfolio for the day is significantly different from 0 was calculated by

$$^t AAR_t = \frac{AAR_t}{\sqrt{\text{variance of } AAR_t}}$$

Assuming independence across days, the t statistic for CAAR for a period of T days from day 'a' to 'b' was calculated by

$$^t CAAR_t = \frac{CAAR_t}{\sqrt{\text{variance of } AAR_t \times T}}$$

## 6. Findings of the Study

### 6.1 Cumulative Average Abnormal Returns (CAAR) Around Bonus Issue Announcement Date

From 30 trading days prior to the announcement of bonus issue, till the actual date of announcement of

the bonus issue, the average abnormal returns grow at 0.04% per day. For the five days preceding the announcement, the abnormal returns are .08%, 1.2%, 1.2%, 1.6% and 1% respectively. It is also observed that on the announcement day there is an abnormal return of 1.5%. Thus for the 30 trading days leading to the bonus announcement date there is a cumulative abnormal return of 11.5%.

For the 30 days after the announcement of bonus issue, the CAAR is statistically equivalent to zero. This only shows that the market does expect the announcement and adjusts the prices of the shares accordingly. The informational content in the announcement is gradually impounded in the share prices before the actual event of announcement. There is absolutely no possibility of making use of the announcement of the event to form a trading strategy and earn abnormal returns. Thus the CAAR surrounding the 134 bonus announcements support the proposition that the NSE is semi-strong form efficient.

Table No 1 gives the CAAR values around of the entire 134 bonus announcement under study. Table Nos 2, 3, 4 and 5 give the CAAR values of the four sub-groups of the bonus announcements. The figure nos 1 to 5 depict the respective CAAR.

### 6.2 The t Test

The parametric t test for the equality of means for the returns before and after announcement of bonus issue is tested with

$H_0$ : There is no difference in mean of returns

$H_1$ : There is difference in mean of returns

#### 6.2.1 Equality in the mean returns around bonus announcement

The t test for the equality of means at 95% level of confidence, for the abnormal returns during 30 days prior and 30 days after announcement of bonus issue, the t value being 3.690 suggests that the null hypothesis is not accepted when the entire 134 bonus announcements are tested. This leads us to conclude that there is a difference in the mean of the abnormal returns prior to and after the announcement of the bonus issue. This is consistent with the findings of the CAAR (Table 6).

When the test is applied for the sub-groups of the bonus issues under study, it is very clear that when the bonus issue is at the ratio 1:1 the t value is 3.691 which again suggests the non acceptance of the null hypothesis. But in other sub-groups i.e. when the bonus issue is at the ratio of 2:1, 1:2 and 'other' fractional categories, the t values are 1.053, 1.444 and 1.905 respectively which statistically fall within the range of acceptance of the null hypothesis at 95% level of confidence. The differences in the t values of the sub-groups could be ascribed to the size of the sub-groups.

### 6.3 The Kolmogorov – Smirnov test

The Kolmogorov – Smirnov test to determine whether there is significant difference in the distribution pattern of returns before and after the announcement of bonus issue is applied:

$H_0$ : There is no difference in the distribution pattern of the returns

$H_1$ : There is difference in the distribution pattern of returns

#### 6.3.1 Distribution pattern in the abnormal returns surrounding the date of bonus announcement

The Kolmogorov-Smirnov test statistic suggests non-acceptance of the null hypothesis that 'there is no difference in the distribution pattern of the returns between before and after the bonus announcements'. In other words the alternative hypothesis that 'there

is difference in the distribution pattern of returns' is accepted. The result is consistent both when all the abnormal returns pattern surrounding the entire 134 bonus issues is taken as well as when the sub-groups based on the ratio of bonus issue are studied.

### 7. Conclusion

Announcement of bonus issue which theoretically surprise news for the stock market does not appear to be so in reality. The stock market tend to predict the announcement of the news and the prices of the respective shares start moving upwards about 30 days before the actual announcement. The t test for the equality of mean returns before and after the bonus announcement in table 7 shows that there is significant difference. The Kolmogorov – Smirnov test confirms that the patterns in the distribution of returns before and after the bonus announcement date are also dissimilar. Hence the study supports the hypothesis that the NSE is efficient at semi-strong form.

When a market is efficient at semi-strong form, it reinforces the fact that the fundamental analysis may hold good for a long-term investor. The technical analysis may not be useful to an investor if merely on the basis of announcement of bonus issues he seeks to pocket abnormal returns. Prices of the shares incorporate the information content of the impending bonus announcements a few days prior to the actual announcement. Post announcement returns are not attractive enough for an investor to invest.

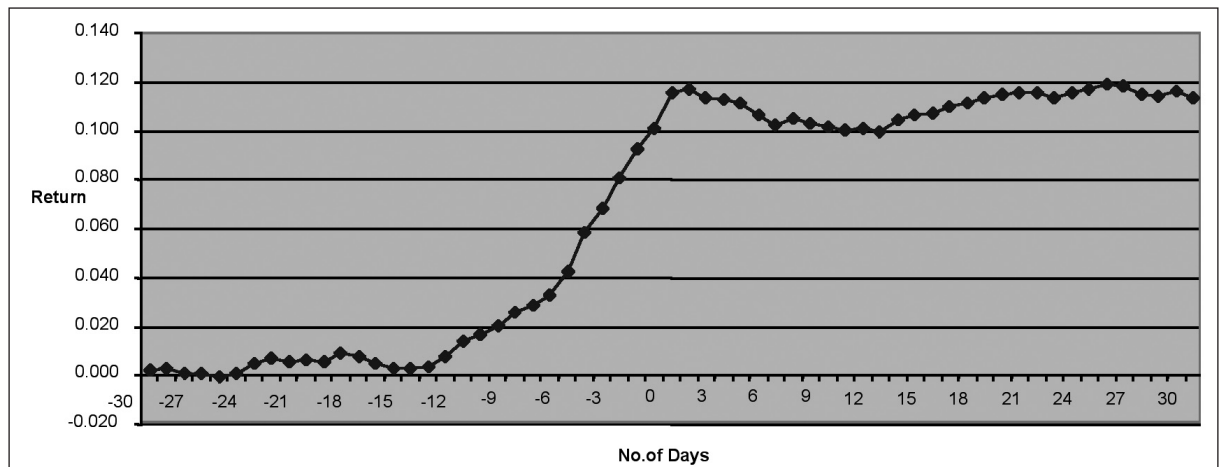
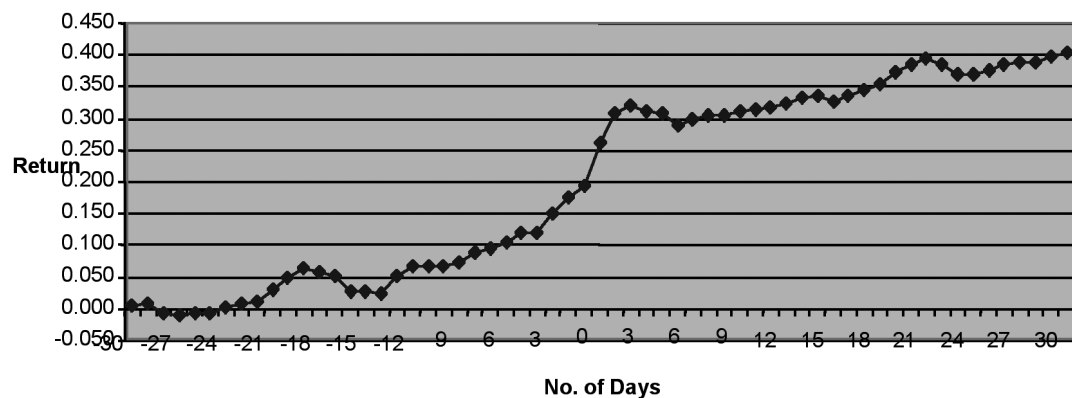
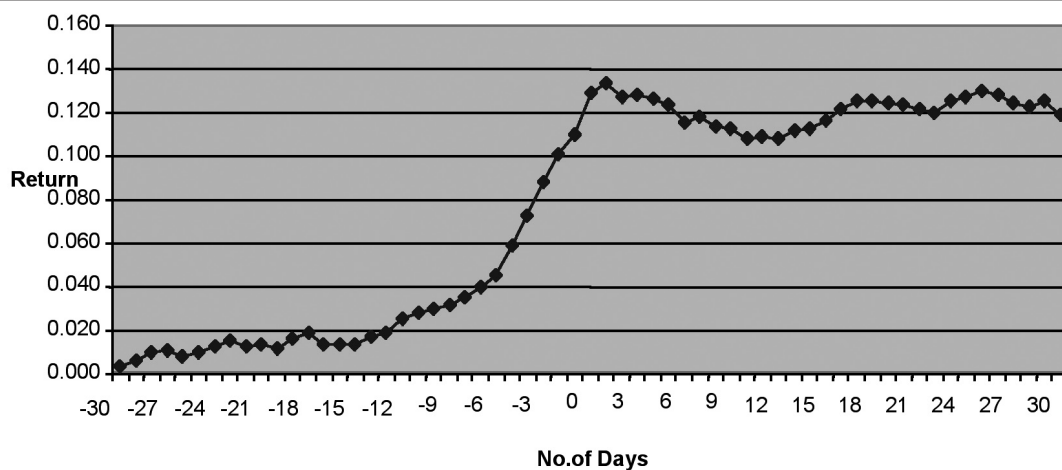


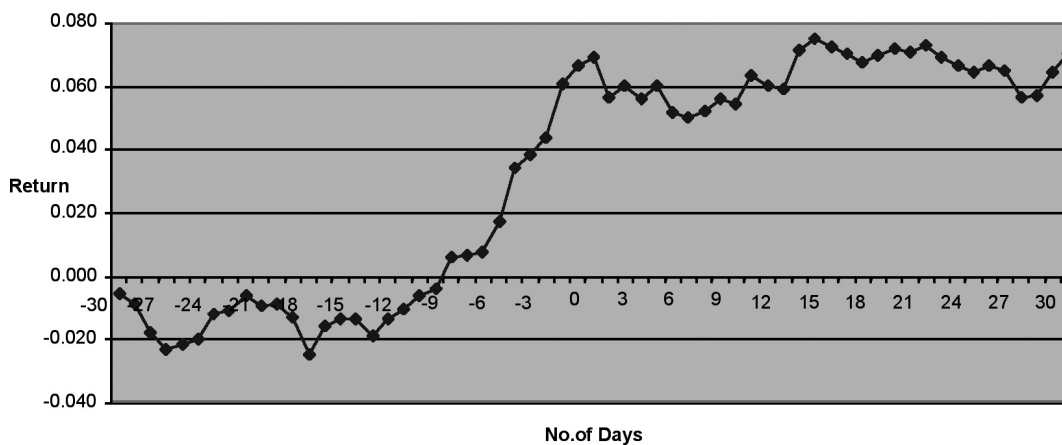
Figure 1 CAAR around Bonus Announcements (All)



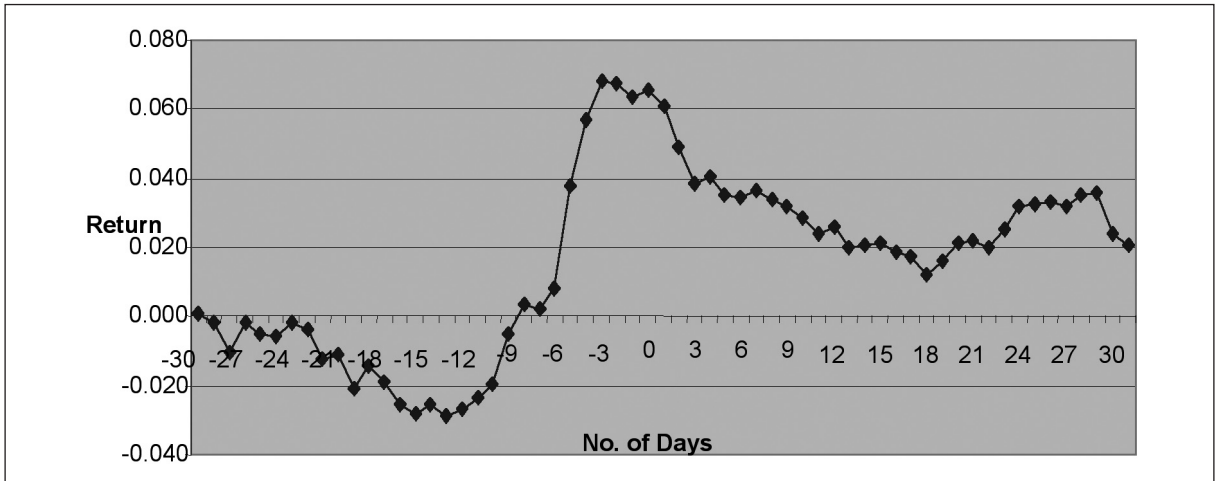
**Figure 2 CAAR around Bonus Announcements (ratio 2:1 or more)**



**Figure 3 CAAR around Bonus Announcements (ratio 1:1)**



**Figure 4 CAAR around Bonus Announcements (ratio 1:2)**



**Figure 5 CAAR around Bonus Announcements (ratio-others)**

Days	AAR	t AAR	CAAR	t CAAR		Days	AAR	t AAR	CAAR	t CAAR
-30	0.0022	0.0609	0.0022	0.0768		1	0.0013	0.0177	0.1168	0.4175
-29	0.0007	0.0186	0.0027	0.0715		2	-0.0029	-0.1004	0.1133	0.5665
-28	-0.0023	-0.0657	0.0006	0.0108		3	-0.0005	-0.0219	0.1126	0.6165
-27	0.0001	0.0015	0.0007	0.0107		4	-0.0012	-0.0435	0.1115	0.7214
-26	-0.0004	-0.0357	-0.0003	-0.0047		5	-0.0047	-0.1357	0.1068	0.5217
-25	0.0104	0.0327	0.0007	0.0094		6	-0.0044	-0.1348	0.1027	0.547
-24	0.0041	0.1661	0.005	0.0722		7	0.0024	0.0839	0.1051	0.5878
-23	0.0023	0.0707	0.0072	0.0811		8	-0.0021	-0.0833	0.103	0.6386
-22	-0.0017	-0.0673	0.0054	0.0657		9	-0.0012	-0.0495	0.1015	0.5546
-21	0.0012	0.0458	0.0066	0.0795		10	-0.001	-0.0371	0.1006	0.5937
-20	-0.0005	-0.0255	0.0058	0.0538		11	0.0002	0.0097	0.1008	0.6769
-19	0.0041	0.1114	0.0092	0.0862		12	-0.001	-0.0457	0.0995	0.5633
-18	-0.0009	-0.0558	0.0076	0.074		13	0.0053	0.1934	0.1048	0.5766
-17	-0.003	-0.0915	0.0047	0.0397		14	0.0021	0.0824	0.1069	0.6372
-16	-0.0013	-0.0525	0.0031	0.0252		15	0.0002	0.0089	0.1071	0.6476
-15	0.0003	0.0075	0.0033	0.0266		16	0.003	0.1259	0.1101	0.6717
-14	0.0006	0.016	0.0038	0.0273		17	0.0011	0.0464	0.1115	0.5607
-13	0.0043	0.1205	0.008	0.0543		18	0.0019	0.0662	0.1132	0.6081
-12	0.0055	0.1835	0.0139	0.0998		19	0.0021	0.0756	0.1152	0.6314
-11	0.0036	0.0927	0.0168	0.1216		20	0.0009	0.0136	0.1157	0.4556
-10	0.0037	0.1233	0.0205	0.1474		21	0.0002	-0.0051	0.1155	0.5882
-9	0.005	0.1588	0.0256	0.1704		22	-0.0016	-0.0726	0.1135	0.5704
-8	0.0027	0.0974	0.0286	0.1938		23	0.0026	0.0764	0.116	0.4966
-7	0.0042	0.1126	0.0328	0.1786		24	0.0011	0.0344	0.117	0.5324
-6	0.0103	0.2261	0.0425	0.1985		25	0.0024	0.0807	0.1192	0.579
-5	0.0164	0.3591	0.0583	0.2594		26	-0.0011	-0.0291	0.1184	0.5585
-4	0.0103	0.2669	0.0684	0.3489		27	-0.003	-0.1116	0.1153	0.5486
-3	0.0123	0.3048	0.0805	0.3808		28	-0.0009	-0.0368	0.1143	0.5841
-2	0.0117	0.2999	0.0924	0.4343		29	0.0023	0.0803	0.1165	0.5611
-1	0.0085	0.2388	0.1008	0.5238		30	-0.0023	-0.0901	0.1137	0.4814
0	0.0149	0.2946	0.1159	0.4051						

**Table 1 t-values of Cumulative Average Abnormal Returns Around Bonus Announcement Date (All Companies)**

Days	AAR	t AAR	CAAR	t CAAR		Days	AAR	t AAR	CAAR	t CAAR
-30	0.0067	0.4715	0.0039	0.4715		1	0.0434	0.6655	0.3039	0.8305
-29	0.0022	0.0752	0.0062	0.2133		2	0.0142	0.2707	0.3181	1.0643
-28	-0.0158	-0.7425	-0.0096	-0.1859		3	-0.011	-0.2707	0.3071	1.309
-27	-0.0038	-0.15	-0.0134	-0.2105		4	-0.0017	-0.0457	0.3055	1.4155
-26	0.003	0.1508	-0.0104	-0.1752		5	-0.0181	-0.6374	0.2874	1.7037
-25	0.0014	0.0566	-0.009	-0.0998		6	0.0097	0.2672	0.297	1.364
-24	0.0073	0.3906	-0.0016	0.0226		7	0.0063	0.1848	0.3033	1.4541
-23	0.0088	0.2859	0.0072	0.1139		8	0.0001	0.0027	0.3034	*2.0759
-22	0.0027	0.123	0.0099	0.1937		9	0.0038	0.2279	0.3072	**2.9337
-21	0.0182	0.7741	0.028	0.4151		10	0.0034	0.2034	0.3107	**2.8862
-20	0.0185	0.4135	0.0465	0.3323		11	0.0024	0.0924	0.3131	1.8801
-19	0.0134	0.3387	0.0599	0.4569		12	0.0073	0.2305	0.3203	1.5662
-18	-0.004	-0.101	0.0559	0.411		13	0.0092	0.3043	0.3295	1.657
-17	-0.0076	-0.1271	0.0484	0.2302		14	0.005	0.2679	0.3345	**2.6711
-16	-0.0245	-0.5021	0.0239	0.1409		15	-0.0106	-0.7146	0.324	**3.2534
-15	-0.0008	-0.0226	0.0231	0.1882		16	0.0084	0.3886	0.3323	*2.2729
-14	-0.0016	-0.031	0.0215	0.1122		17	0.0089	0.1942	0.3412	1.0876
-13	0.0272	0.7181	0.0486	0.3203		18	0.0099	0.2694	0.3511	1.372
-12	0.0153	0.4376	0.064	0.4373		19	0.0205	0.4972	0.3716	1.2845
-11	-0.0003	-0.0054	0.0637	0.284		20	0.0117	0.1868	0.3833	0.8641
-10	0.0011	0.0409	0.0648	0.5314		21	0.0099	0.2468	0.3932	1.3657
-9	0.0059	0.1878	0.0707	0.4994		22	-0.0097	-0.203	0.3836	1.116
-8	0.0157	0.5372	0.0864	0.6367		23	-0.016	-0.3206	0.3676	1.0092
-7	0.0054	0.1123	0.0918	0.4015		24	0.0002	0.0046	0.3677	1.1833
-6	0.0084	0.2473	0.1002	0.6031		25	0.004	0.1307	0.3718	1.6179
-5	0.0168	0.4331	0.117	0.6069		26	0.0116	0.37	0.3834	1.6301
-4	-0.0004	-0.0091	0.1166	0.566		27	0.0013	0.0801	0.3847	**3.1994
-3	0.0314	0.6823	0.148	0.6198		28	-0.0003	-0.0141	0.3843	*2.2390
-2	0.0241	0.8212	0.1721	1.1049		29	0.0098	0.2306	0.3941	1.2097
-1	0.0201	0.5506	0.1922	0.9769		30	0.0062	0.1758	0.4004	1.4517
0	0.0683	0.9265	0.2605	0.6413						

**Table 2 t-values of Cumulative Average Abnormal Returns  
Around Bonus Announcement Date (Companies that issued more than 2:1 Bonus)**

\* Significant at 5% level

\*\* Significant at 1 % level

Days	AAR	t AAR	CAAR	t CAAR		Days	AAR	t AAR	CAAR	t CAAR
-30	0.0039	0.1286	0.0039	0.1286		1	0.0043	0.0852	0.1334	0.4708
-29	0.0025	0.091	0.0064	0.166		2	-0.0065	-0.1858	0.1269	0.6329
-28	0.0037	0.115	0.0101	0.182		3	0.0011	0.0353	0.128	0.675
-27	0.0004	0.0154	0.0105	0.1991		4	-0.0018	-0.0651	0.1262	0.7567
-26	-0.0019	-0.0751	0.0086	0.1532		5	-0.0027	-0.0704	0.1235	0.543
-25	0.0011	0.0385	0.0097	0.1401		6	-0.0084	-0.2516	0.1151	0.5653
-24	0.0027	0.1	0.0124	0.1753		7	0.0035	0.1022	0.1186	0.5653
-23	0.003	0.0905	0.0154	0.1658		8	-0.0046	-0.1615	0.114	0.6351
-22	-0.0029	-0.1044	0.0125	0.1499		9	-0.0015	-0.045	0.1125	0.5389
-21	0.0009	0.033	0.0134	0.158		10	-0.0043	-0.1538	0.1082	0.6085
-20	-0.0013	-0.042	0.0121	0.1218		11	0.0009	0.0365	0.1091	0.6493
-19	0.0042	0.1532	0.0163	0.1704		12	-0.0014	-0.0481	0.1078	0.5819
-18	0.0031	0.1263	0.0194	0.2222		13	0.0037	0.12	0.1114	0.5512
-17	-0.0056	-0.1988	0.0138	0.1299		14	0.0016	0.0578	0.1131	0.6028
-16	-0.0003	-0.0081	0.0135	0.11		15	0.0032	0.1208	0.1163	0.6481
-15	-0.0002	-0.0067	0.0133	0.1096		16	0.0053	0.2158	0.1216	0.7157
-14	0.0041	0.1218	0.0174	0.125		17	0.0037	0.1311	0.1253	0.6424
-13	0.0015	0.0419	0.0189	0.1235		18	0.0001	0.0022	0.1254	0.6661
-12	0.0066	0.1851	0.0255	0.1644		19	-0.0011	-0.0494	0.1242	0.7779
-11	0.0024	0.078	0.0279	0.2026		20	-0.0005	-0.0126	0.1238	0.4635
-10	0.0018	0.0625	0.0297	0.2279		21	-0.0016	-0.0601	0.1222	0.6385
-9	0.0023	0.0781	0.032	0.2325		22	-0.0023	-0.0995	0.1198	0.7036
-8	0.0035	0.104	0.0355	0.2224		23	0.0053	0.1632	0.1252	0.5199
-7	0.0048	0.1246	0.0403	0.2128		24	0.0022	0.0766	0.1274	0.5854
-6	0.0048	0.1137	0.0451	0.2137		25	0.0026	0.0877	0.13	0.5904
-5	0.0144	0.3428	0.0594	0.2779		26	-0.0018	-0.0612	0.1282	0.5687
-4	0.013	0.3343	0.0724	0.3584		27	-0.0032	-0.1077	0.125	0.5475
-3	0.0158	0.3898	0.0882	0.4123		28	-0.0022	-0.0764	0.1228	0.6045
-2	0.0126	0.3327	0.1008	0.4929		29	0.003	0.1108	0.1258	0.5936
-1	0.0096	0.2744	0.1104	0.5781		30	-0.0069	-0.2244	0.119	0.4958
0	0.0187	0.4078	0.1291	0.5058						

**Table 3 t-values of Cumulative Average Abnormal Returns  
Around Bonus Announcement Date (Companies that issued more than 1:1 Bonus)**



Lag	AAR	t AAR	CAAR	t CAAR		Lag	AAR	t AAR	CAAR	t CAAR
-30	-0.0052	-0.1527	-0.0052	-0.1527		1	-0.0126	-0.2937	0.0566	0.2327
-29	-0.0034	-0.1419	-0.0087	-0.2532		2	0.004	0.1285	0.0606	0.3402
-28	-0.0091	-0.2908	-0.0178	-0.3274		3	-0.0042	-0.1272	0.0563	0.2926
-27	-0.0054	-0.1413	-0.0232	-0.3018		4	0.0037	0.1664	0.0601	0.4519
-26	0.0019	0.0676	-0.0213	-0.3333		5	-0.0085	-0.2593	0.0516	0.2636
-25	0.0016	0.0461	-0.0197	-0.2336		6	-0.0012	-0.0464	0.0504	0.3187
-24	0.008	0.2456	-0.0117	-0.1349		7	0.002	0.1018	0.0524	0.433
-23	0.0011	0.0348	-0.0106	-0.1173		8	0.0035	0.1716	0.056	0.4338
-22	0.0045	0.1416	-0.006	-0.0625		9	-0.0014	-0.0559	0.0546	0.3504
-21	-0.0034	-0.1195	-0.0095	-0.1039		10	0.0089	0.3021	0.0635	0.3372
-20	0.0006	0.0173	-0.0088	-0.0738		11	-0.0033	-0.2322	0.0601	0.646
-19	-0.0041	-0.1192	-0.0129	-0.1086		12	-0.0006	-0.021	0.0596	0.3254
-18	-0.0115	-0.3333	-0.0244	-0.1963		13	0.0118	0.5365	0.0713	0.4899
-17	0.0087	0.3035	-0.0157	-0.146		14	0.0037	0.1635	0.075	0.5003
-16	0.0024	0.0788	-0.0134	-0.1156		15	-0.0026	-0.1128	0.0724	0.4598
-15	0.0001	0.0017	-0.0133	-0.0914		16	-0.002	-0.0823	0.0704	0.42
-14	-0.0056	-0.1836	-0.0189	-0.1499		17	-0.0028	-0.1081	0.0676	0.378
-13	0.0056	0.1814	-0.0133	-0.1008		18	0.0022	0.08	0.0698	0.3564
-12	0.0028	0.1134	-0.0105	-0.0994		19	0.0021	0.072	0.0719	0.3568
-11	0.0044	0.1653	-0.0061	-0.0517		20	-0.0008	-0.0269	0.0711	0.3485
-10	0.0023	0.0929	-0.0038	-0.0341		21	0.0022	0.0753	0.0733	0.3534
-9	0.0102	0.2472	0.0063	0.0327		22	-0.0037	-0.1039	0.0696	0.2683
-8	0.0006	0.0187	0.0069	0.047		23	-0.0029	-0.1018	0.0666	0.3168
-7	0.0009	0.0265	0.0078	0.047		24	-0.0019	-0.0564	0.0648	0.263
-6	0.0094	0.2403	0.0172	0.0877		25	0.0017	0.0645	0.0665	0.337
-5	0.017	0.3438	0.0342	0.1357		26	-0.0014	-0.0541	0.065	0.322
-4	0.0046	0.1324	0.0388	0.2144		27	-0.0086	-0.2898	0.0565	0.251
-3	0.0053	0.1704	0.0441	0.2679		28	0.0006	0.02	0.0571	0.2478
-2	0.0168	0.3555	0.0609	0.2393		29	0.0073	0.3198	0.0644	0.3655
-1	0.006	0.1497	0.0669	0.304		30	0.0063	0.195	0.0707	0.279
0	0.0022	0.0436	0.0692	0.2408						

**Table 4 t-values of Cumulative Average Abnormal Returns  
Around Bonus Announcement Date (Companies that issued more than 1:2 Bonus)**

Lag	AAR	t AAR	CAAR	t CAAR		Lag	AAR	t AAR	CAAR	t CAAR
-30	0.001	0.059	0.001	0.059		1	-0.0124	-0.3439	0.0488	0.2383
-29	-0.0024	-0.0828	-0.0014	-0.0345		2	-0.0104	-0.3756	0.0383	0.2404
-28	-0.0086	-0.2422	-0.01	-0.1631		3	0.0018	0.1036	0.0401	0.3939
-27	0.0081	0.2392	-0.002	-0.0292		4	-0.005	-0.3153	0.0351	0.3714
-26	-0.0029	-0.1031	-0.0049	-0.0768		5	-0.0008	-0.0374	0.0343	0.2813
-25	-0.0009	-0.039	-0.0058	-0.1075		6	0.0019	0.0885	0.0362	0.2782
-24	0.0043	0.2803	-0.0015	-0.0364		7	-0.0027	-0.2034	0.0335	0.4061
-23	-0.002	-0.0717	-0.0035	-0.044		8	-0.0015	-0.0725	0.032	0.242
-22	-0.0087	-0.4524	-0.0122	-0.2108		9	-0.0037	-0.1625	0.0283	0.1977
-21	0.0013	0.0655	-0.0109	-0.1758		10	-0.0041	-0.2568	0.0242	0.2351
-20	-0.0099	-0.3544	-0.0208	-0.2252		11	0.0014	0.0715	0.0256	0.1969
-19	0.0063	0.192	-0.0145	-0.1263		12	-0.0055	-0.3085	0.0201	0.1732
-18	-0.0045	-0.1663	-0.019	-0.1933		13	0.0008	0.0423	0.021	0.1632
-17	-0.0066	-0.218	-0.0256	-0.2267		14	0.0002	0.0099	0.0212	0.1616
-16	-0.0023	-0.1299	-0.0279	-0.4071		15	-0.0024	-0.1217	0.0187	0.1383
-15	0.0026	0.1032	-0.0253	-0.2503		16	-0.0014	-0.067	0.0174	0.125
-14	-0.0036	-0.1193	-0.0289	-0.2308		17	-0.0054	-0.2114	0.012	0.068
-13	0.0022	0.0692	-0.0267	-0.1952		18	0.004	0.2186	0.0159	0.1257
-12	0.0031	0.1233	-0.0235	-0.2122		19	0.0053	0.2269	0.0212	0.1294
-11	0.0039	0.1478	-0.0196	-0.1675		20	0.0009	0.0437	0.0221	0.1585
-10	0.0145	0.3345	-0.0051	-0.0258		21	-0.0023	-0.1075	0.0198	0.129
-9	0.0084	0.2903	0.0032	0.0239		22	0.0052	0.3663	0.025	0.2418
-8	-0.0011	-0.0542	0.0021	0.0218		23	0.007	0.4018	0.0319	0.251
-7	0.0061	0.1712	0.0082	0.0472		24	0.0007	0.0369	0.0326	0.2312
-6	0.0294	0.5849	0.0376	0.1497		25	0.0007	0.0346	0.0333	0.2129
-5	0.0193	0.3919	0.0569	0.2263		26	-0.0016	-0.0772	0.0317	0.1996
-4	0.0111	0.3017	0.068	0.3556		27	0.0032	0.1858	0.0349	0.2657
-3	-0.0006	-0.0131	0.0674	0.2909		28	0.0008	0.0512	0.0358	0.2997
-2	-0.0037	-0.1043	0.0637	0.3351		29	-0.0118	-0.7276	0.0239	0.1902
-1	0.0019	0.0673	0.0656	0.4252		30	-0.0034	-0.176	0.0206	0.1365
0	-0.0044	-0.0996	0.0612	0.2474						

**Table 5 t-values of Cumulative Average Abnormal Returns  
Around Bonus Announcement Date (Companies that issued bonus on other ratios)**

	Levene's Test for Equality of Variances		t-test for Equality of Means					
	F	Sig.	t	Sig. (2- tailed)	Mean Difference	Std. Error Differ- ence	95% Confidence Interval of the Difference	
							Lower	Upper
All bonus issues (134)	11.543	.001	3.690	.000	.0038	.00103	.00174	.00586
Bonus issues at 2:1 ratio (9)	1.832	.181	1.053	.297	.0038	.00364	-.00345	.01111
Bonus issues at 1:1 ratio (77)	1.719	.195	3.691	.000	.0045	.00122	.00206	.00694
Bonus issues at 1:2 ratio (20)	.764	.386	1.444	.154	.0022	.00151	-.00084	.00521
Bonus issues at other ratios (28)	4.469	.039	1.905	.062	.0033	.00175	-.00017	.00683

**Table 6 t-test for the Equality of Mean in the Abnormal Returns around the bonus announcement dates**

S.No.	Bonus Issue Ratio	Two Sample Kolmogorov-Smirnov Test				
		Most Extreme Differences			Kolmogorov – Smirnov Z	Asymp. Sig (2-tailed)
		Absolute	Positive	Negative		
1	All (134)	0.449	0.000	-0.449	1.755	.004
2	2:1 or more (9)	0.256	0.085	-0.256	0.999	.271
3	1:1 (77)	0.404	0.000	-0.404	1.579	.014
4	1:2 (20)	0.275	0.091	-0.275	1.075	.198
5	Other ratios (28)	0.285	0.029	-0.285	1.113	.168

**Table 7 Two Sample Kolmogorov-Smirnov Test to Measure the Differences in the Distribution Pattern of Abnormal Returns Before and After the Event**

**Note: Figures in brackets refer to number of bonus issues in the respective category**

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## e-tailing paradigm: A diagnostic and prognostic study of e-tailing practices in Bangalore Metropolitan Area

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### Abstract

*The electronic retailing (e-tailing) market in India is still considered to be in its infancy, despite having been around for one decade. The share of online retailing in the \$180 billion Indian retail market is insignificant despite the deep penetration of the internet incrementally over the years. It has become imperative to convert "online visitors" to "online customers".*

*As the e-tailing concept in India is still relatively new, there is a limitation to availability of information. While substantial amount of research has gone into retailing in India and elsewhere, not much research has been undertaken on the dynamics of the e-tailing paradigm in India. The current literature available appears to be inadequate to cover the entire gamut of the e-tailing paradigm.*

*The e-tailing literature from across the world suggests that understanding the important components of online consumer behavior is the key to success in e-tailing. A clear and thorough understanding of the behavioral components can help e-tailers improve the adoption of consumer online purchasing by implementing methods and technologies that help fill in the gaps between the physical world shopping experience and the experience online.*

*E-tailing is a humongous concept. To understand the various facets of e-tailing it was necessary to adopt a four-pronged approach towards unraveling its many dormant traits. The buyer-oriented first study, focused on e-tail customers for validating the research model. The seller-oriented second study involved making an assessment of "net readiness" across Bangalore-based retailers and e-tailers. The third study, another buyer-oriented study, involved a study of retail visitors in Bangalore city to gain insight into their motivation for visiting physical retail stores and to explore the potential of switching*

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*\* This is the synopsis of PhD thesis accepted for the award of PhD in Management of Symbiosis International University, Pune under the guidance of Prof K.V.Prabhakar in 2009.*

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offline shoppers to an online mode. The technology-oriented fourth study involved benchmarking emulative features of e-tail websites from across the world.

As a part of the first study, a novel model based on the generic "Technology Acceptance Model (TAM)" and Indian idiosyncrasies was developed and empirically tested to understand whether 'credibility', 'security', 'privacy', 'communication', and 'gullibility' affect a customer's 'perceived trust', and whether 'perceived trust', 'perceived value-for-money', 'perceived navigability', and 'perceived quality of e-service features' affect a customer's 'confidence for buying', and whether 'confidence for buying' and 'technological comfort' affect 'actual online buying'. This was done because it was felt that there is a necessity to integrate constructs from e-tailing practices with TAM to present a model of acceptance of e-tailing to provide a rich understanding of the acceptance and technology use of this specific class of technology.

The findings of the first study indicate that 'security', 'communication' and 'gullibility' are the antecedents of 'perceived trust'; 'perceived trust', 'perceived value-for-money', and 'perceived quality of e-services' are the antecedents for 'confidence for buying'; and 'confidence for buying' is an antecedent for 'actual online buying'. The findings further suggest that 'credibility' and 'privacy' do not affect 'perceived trust' and 'perceived navigability' does not affect 'confidence for buying'. Further, 'technological comfort' has no bearing on 'actual online buying'.

The second study on retailers and e-tailers in Bangalore has brought out the first detailed set of net readiness scores. This is probably the first of its kind in India itself. Such studies have been conducted in countries like Bulgaria and New Zealand before. The overall results portray a very dismal picture of net readiness in retail units in Bangalore. This indicates that e-mode of business is not of much significance to this sector. It would require a multi-pronged strategy to change the mindset and bring them under the fold of e-tailing. The level of net readiness for e-tailing units in Bangalore, on the other hand, presented a much more encouraging picture. The results indicate that Bangalore-based e-tailers have as good a technology as compared to the best in the world. However, leadership, organizational competencies, and governance exhibited by them are not upto the international standards.

The third study was designed to capture e-tail perceptions from visitors at retail outlets in Bangalore. The findings of this study isolated some factors and results that can be astutely used by prudent e-tailers to enhance their website sales. The types of products that hold promise in the online world and the maximum amount of money willing to be spent for a single online purchase sale transaction were also revealed in the study. The study also indicated some pointers for driving conversion from offline to online mode.

The fourth study, albeit a qualitative study, was designed to benchmark emulative features of renowned e-tail websites from across the world. The study revealed that no e-tail website is perfect when measured in terms of the parameters prescribed by Website Optimization Inc., a leading 3rd party rater. This was indeed a startling revelation. Qualitative content analysis of 20 short-listed e-tail websites indicated some emulative features of highly reputed e-tailers that can serve as guidelines for design of the "ideal e-tail website".

**Keywords:** E-Tailing, Technology Acceptance Model, Net Readiness

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## 1. Introduction

E-tailing consists of computer-interactive retailing activities over the Internet. It involves a website maintained by the e-tailer for buying and selling of products and services via computer networks.

E-tailing is the electronic version of non-store retailing. Consumers can shop from their homes or offices by using personal computers to interact with retailers using the internet. The number of internet websites, or "store-fronts", where products can be ordered has been growing very rapidly. A few years back, [www.amazon.com](http://www.amazon.com) (the most prolific e-tailer) was only an internet bookstore, but today shoppers can find thousands of items ranging from toys to sporting goods to consumer electronics products at this web site.

The internet, with its worldwide "audience", is dramatically changing the nature of retailing. Its impact is so great that it finds a place in the "focus areas of special importance" in the retailing business. Traditionally, the focus areas of special importance have been merchandise assortment, location, atmospherics, customer service, store image, and database management.

While everyone - expert analyst and eager entrepreneurs alike mourned the demise of the web as a business proposition towards the end of the year 2000, e-tailing has been slowly and steadily growing. And, remarkably, the wildly astronomical predictions and estimates made by analysts during the peak of the dotcom boom have, in fact, turned out to be rather conservative. Forrester Research reported e-commerce worth \$3.9 trillion worldwide in 2003; a figure that is almost double of predictions made back in 1999. More than 40 % of the 450 plus internet companies that went public have turned around and become profitable.

Most of figures that are depicted are not being referred to in the text. Their inclusion is only for consolidated Understanding.

## 2. Problem Statement

The e-tailing concept in India is still relatively new. Not much research work has treaded on this territory and hence, there is a limitation to availability of information. There is a need to study and analyze the problems being faced by e-tailers, their preparedness for conducting

business, and the marketing dynamics involved in the e-tailing process. In order to do so, it is imperative to develop an understanding of the online consumer that can impact marketing and operational strategy for the e-tailer.

The online environment is radically different from the traditional environment because of the dizzying, uncontrollable pace. The present-day business mantras contradict many of the advantages that the pre-digital economy assigned to such strategies as first mover advantage, stability, and linear product development cycles designed to defend existing product lines. In the electronically lubricated digital environment, first mover advantage can be easily offset. As the practice of e-tailing in India matures, a deeper and more complete understanding of the nature and relationships of the three critical components – BUYERS, SELLERS, and TECHNOLOGIES that bring them together has become very essential. While some firms have been led astray by technology, the truly successful have used technology to apply the core concepts of traditional marketing in a novel and potent way. There is a dichotomy here – "customer focus" is traditional thinking, but its application on the internet involves innovative and non-traditional approaches. cursory recognition and even an iota of success may be achieved by technology savvy enterprises, but technology is easy to replicate in the digital world, and is not a sustainable competitive differentiator.

Understanding the important components of online consumer behavior is perhaps the key to success in e-tailing. A clear and thorough understanding of the behavioral components leading to actual online purchase can help e-tailers improve the adoption of consumer online purchasing by implementing methods and technologies that help fill in the gaps between the physical world shopping experience and the experience online. However, in some instances, physical touch can never be substituted. Likewise, human interaction will continue to be desired for social reasons. Nonetheless, Indian e-tailers should discover and capitalize on the unique advantages of the internet over physical world shopping, if e-tailing in India is to achieve staggering growth.

## 3. Significance of the Study

After the late 1990's a majority of dotcoms, including several e-tailers, ceased to exist after a spectacular



spell. Yet, for some e-tailers (e.g. [www.amazon.com](http://www.amazon.com)), the entire effort of setting up an electronic store and engaging in commerce over the net was a runaway success. It is very important from the e-tailer point of view to analyze what could have gone wrong, so that similar mistakes are not made in future.

It is worth noting that despite the resounding resilience in the international markets, Indian e-tailing has met with only moderate success. To match e-tailing success in the west, Indian e-tailers need to revamp their existing business perspectives, gain an in-depth insight into online consumer behavior, and chart out a path towards eventual success. In short, they need to find an answer to the topical question – “What does it take to succeed in this digital, perpetually shifting landscape within the web-centered world of e-tailing?”

While substantial amount of research has gone into retailing in India and elsewhere, not much research has been undertaken on the dynamics of the e-tailing paradigm in India, which includes e-tailing vis-à-vis retailing. The current literature available appears to be inadequate to cover the entire gamut of the e-tailing phenomenon. There is a pressing need to take up serious study to identify the potential pitfalls, the “loose bricks” in the brick-less electronic storefronts, and other typical shortcomings in the e-tailing paradigm. There is a strong need also to strategize the dynamics of e-tailing. It has become imperative to propel e-tailing paradigm into the right orbit using a theoretical framework that is distilled from empirical research. The end goal is to ensure that the e-tailing juggernaut gains momentum and rolls on.

A proper diagnosis of the dynamics will reveal the underlying causes to e-tailing failures and unleash a road map to its eventual success in India. A vital research lacuna truly exists in this critical issue and this is what has encouraged taking up this research investigation.

#### 4. Literature Review

Most of the findings culled from e-tailing literature have been found to be rather fragmented and the impression is that there is a need to glean a holistic, monolithic image from the nuggets of synthesized information on

e-tailing facets, floating about in cyberspace or locked away in research libraries. The following sections illustrate some relevant breakthrough frameworks and issues related to this study that will lay the foundation for the Research Model.

Most empirical studies on e-tailing, per se, the world over converge on a very important frame of reference called as “Technology Acceptance Model” propounded by Fred Davis (1989)<sup>[1]</sup>. The Technology Acceptance Model (TAM) is one of the most extensively used models to explain information technology acceptance behavior. This is apparently the most powerful model that has been widely applied and empirically tested to explain end-users’ acceptance behavior across a wide range of technological innovations. During the last decade, TAM has generated substantial interest, along with empirical reinforcement, amongst the online researcher community - Mathieson (1991)<sup>[2]</sup>, being a pioneering example. A meta-analysis of empirical findings on the TAM conducted by Qingxiong & Liping (2004) reveals that there were around 100 TAM-related studies<sup>[3]</sup>, published in journals, conference proceedings, and technical reports between the years 1989 and 2001. These studies enabled TAM to be comprehensively tested using diverse sample sizes and varying user groups within or across organizations. TAM has been widely applied to various end-user technologies such as email (Adams, Nelson & Todd, 1992)<sup>[4]</sup>, word processors (Davis, Bagozzi & Warshaw, 1989)<sup>[5]</sup>, groupware (Taylor & Todd, 1995)<sup>[6]</sup>, spreadsheets (Agarwal, Sambamurthy & Stair, 2000)<sup>[7]</sup>, and the World Wide Web (Lederer, Maupin, Sena & Zhuang, 2000)<sup>[8]</sup>. A few studies have also extended TAM by considering additional elements such as gender, culture, experience, and self-efficacy. Some of the prominent technological contexts on which TAM has been tested for end-user acceptance include online banking<sup>[9]</sup>, e-learning<sup>[10]</sup>, mobile commerce<sup>[11]</sup>, website revisits<sup>[12]</sup>, and alternative technologies<sup>[13]</sup>.

TAM is rooted in social psychology theory, in general, and the Theory of Reasoned Action (TRA) in particular. The Theory of Reasoned Action (TRA), endeavors to envisage and comprehend an individual’s intended behavior (Ajzen & Fishbein, 1980)<sup>[14]</sup>. An individual displays a unique behavior that is determined by his or

her behavioral intention (BI), which in turn is governed by his or her attitude (A) and a subjective norm (SN), defined as an appraisal of the social pressures exerted on an individual to indulge or not to indulge in the behavior under consideration. TRA also postulated that external variables impact a person's acceptance behavior.

The Technology Acceptance Model<sup>[15]</sup>, based on the TRA Model, is an information systems framework that represents how users reach the stage of accepting and using a technology. The model indicates that whenever users are offered a new software application, several factors combine together to influence their decision regarding how and when they will use it. Two factors were considered to be of utmost significance, when they were introduced by Davis in 1989, namely:

- Perceived usefulness (PU) – Davis defined this construct as “the degree to which a person believes that using a particular system would enhance his or her job performance”.
- Perceived ease-of-use (PEOU) – This construct was defined by Davis as “the degree to which a person believes that using a particular system would be free from effort”.

Coherent with the TRA model, the TAM indicates that the two constructs (PU and PEOU) that form an enduser's beliefs on a technology, influence the attitude towards using the information system in question. The attitude, in turn, affects the behavioral intention to use the information system. Behavioral intention to use, finally, leads to acceptance (i.e., actual information system use).

Akin to TRA, TAM also postulated that external variables impact a person's acceptance behavior. Some of the external variables that have been identified and tested are as follows:

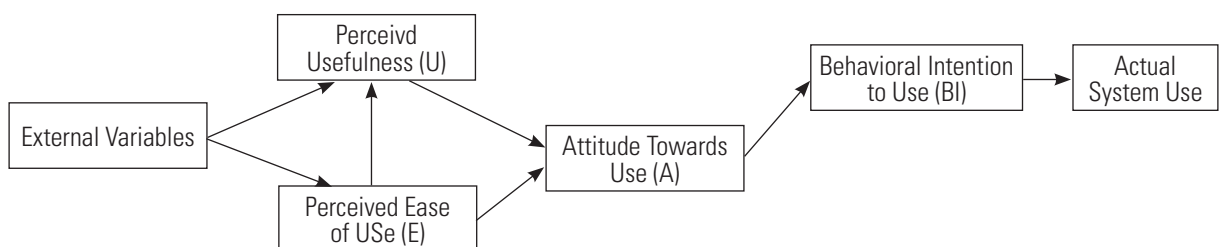
- “Computer self-efficacy<sup>[16]</sup>” for web-based learning, defined as “an individual's belief in his ability to perform a particular task”.
- “Security planning<sup>[17]</sup>” for information security, defined as “a process leading to protection of business assets behind a gateway that allows detailed access control”.
- “Trust<sup>[18]</sup>” for online banking, defined as “the willingness to be vulnerable to the actions of another person or people”.

These external variables have demonstrated substantial impact on “behavioral intention to use” in their respective empirical studies.

Various extensions and adaptations of the TAM have also been considered while deriving the research model, e.g. A Model of Customer Trust (Jarvenpaa, 2000), Consumer Trust in E-Commerce Transaction Model (Chellappa et al, 2002), Trust Enhanced Technology Acceptance Model (Dahlberg, et al, 2003), Extended Technology Acceptance Model (Heijden et al, 2003), Augmented Technology Acceptance Model (Vijayarathna, 2004)

## 5. Literature Review: Identification of Vital Research Gaps

An evaluation of empirical research results on information systems acceptance and adoption indicates that TAM has emerged as one of the most dominant frames of reference in this branch of research.



**Fig 1 Technology Acceptance Model (TAM) - (Davis, 1989)**

TAM has been tested on a wide array of technologies and has been very prognostic of individual user acceptance and technology usage. However, one common criticism faced by TAM is that although it can successfully provide insights into system acceptance, it is not particularly useful in offering elucidations that can be used to design interfaces that promote acceptance. Although it is widely accepted that 'perceived usefulness' and 'perceived ease of use' affect user acceptance, it will be difficult to provide actionable and realistic guidance from TAM till the antecedents that affect perceived usefulness and perceived ease of use are understood. Some attempts have been made to carry out research on a set of general antecedents that encompass a wide range of technologies and various classes of technologies, as well. However, in using TAM for practical guidance, it is necessary to ascertain antecedents that are tailored to specific classes of technologies that capture the nuances of the class of technologies and/or business processes (Benbasat and Zmud 2002)<sup>[19]</sup>. Hence, as a first step, it is essential to extend TAM towards specific classes of technologies (Dennis and Reinicke, 2004)<sup>[20]</sup>. A model concentrating on an explicit class of technology will produce a constricted but richer model rather than a universal model that tries to cater to several classes of technologies concurrently. Keeping this background in mind, there is a need to integrate constructs from e-tailing practices in India with TAM elements. The resultant of such an attempt would be to synthesize a model ofetail acceptance that provides a rich understanding of the acceptance and technology use of this specific class of technology.

Technologies that enable interactions through digital media have become an essential ingredient of everyday life. Hence, it is of no surprise that this class of technology has received substantial research attention over the past few years. However, several pioneering studies have been mainly in the area of collaboration technologies such as voice mail, e-mail, and group support systems and not online shopping, per se. These studies are nevertheless important because they instituted TAM as one of the keystones of information systems literature. The studies also established TAM as a theoretical framework applicable to a broad range of technologies.

A detailed investigation into the available literature has revealed that no specific framework pertaining to etailing phenomenon in India has been espoused. Beside its potential theoretical contributions, a framework that clubs TAM with the nature of Indian e-tailing is also useful to information technology (IT) management practice. By comprehending the important precursors to user acceptance, IT managers can design more effective interventions to accomplish greater technology acceptance and usage.

*A unifying model that integrates technology acceptance with e-tailing phenomenon in India is lacking, a void that this research seeks to address. This is truly a vital research gap, which has been suitably addressed in this study.*

### **5.1 Research Model (Synthesized from Literature Review)**

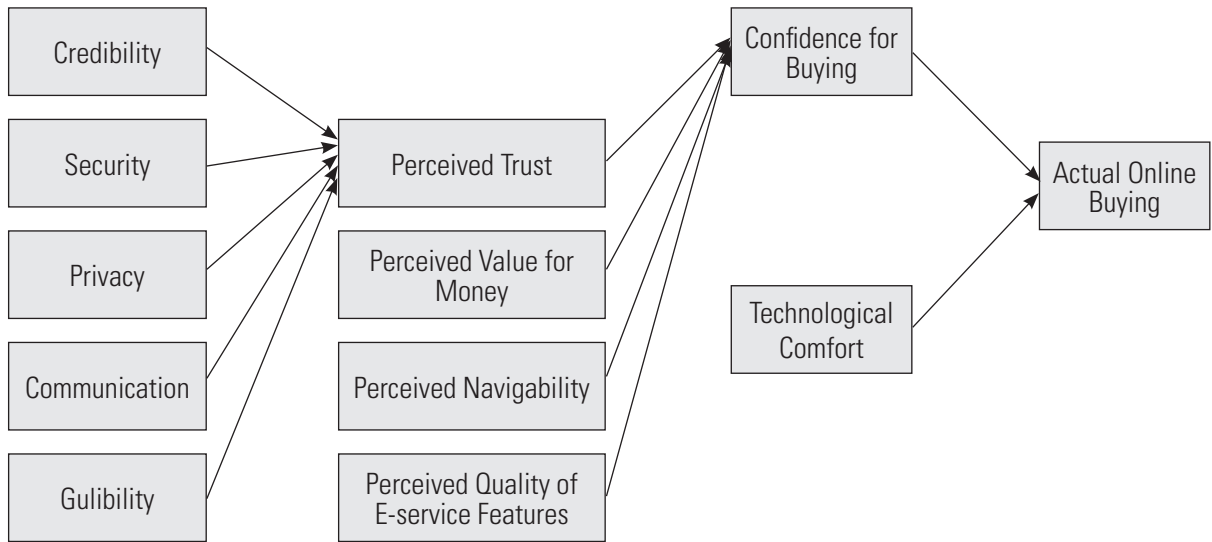
The conceptual research model, drawn from the Technology Acceptance Model (Fig 1), shown in Fig 2, is an extension of the above-mentioned models and their enhancements, customized to the specific and unique characteristics of e-tailing in India.

The research model given below posits that the antecedents of "actual online buying" are "confidence for buying", and "technological comfort". The antecedents of "confidence for buying", in turn, are "perceived trust", "perceived value-for-money", "perceived navigability", and "perceived quality of E-service features". The antecedents of "perceived trust", in turn, are credibility, security, privacy, communication and gullibility.

### **6. Research Objectives**

The failure of a large number of e-tail companies during the "dotcom bust" period epitomizes the challenges of operating through electronic channels and underscores the need to better understand key drivers of online consumer behavior

A deeper and more complete understanding of the nature and relationships of three critical components – Buyers, Sellers, and Technologies that bring them together, has become essential. *Hence, the focus of this research is on the e-tail customers (current customers, potential customers, and non-customers), e-tailing companies (current and also those with future*



**Fig 2 Proposed Research Model**

*potential) and the “technology bridges” (i.e., websites), wherever applicable.*

The specific objectives of this research study are as follows:

1. To identify the antecedents of customer confidence in e-tailing, leading to actual online purchase
2. To identify the critical success factors of making successful online sales
3. To identify the product profiles that hold promise in the online mode
4. To examine, analyze, and evaluate the important marketing issues facing firms that want to compete in this revolutionary and dynamic new media environment
5. To benchmark (external) features of e-tailing websites across the world which embody world's best e-tail website features
6. To capture and evaluate perceptions of physical shoppers regarding the 'approach goals' and 'avoidance goals' that drive consumers towards or away from retail and e-tail stores
7. To measure current levels of preparedness of Indian e-tailing companies as well as retailing units to perform and compete in the new internet-based economy

## 7. Formulation of Hypotheses

There are multiple definitions and enunciations of trust, which makes the concept prone to creating confusion across research areas. The definition of trust has been adapted from Mayer (1995)<sup>[21]</sup> in this study as *“the willingness of a consumer to be vulnerable to the actions of an online store based on the expectation that the online store will perform a particular action important to the consumer, irrespective of the ability to monitor or control the online store”*. The following antecedents of perceived trust have been identified:

### a. Credibility

This is defined as the extent to which the reliability, trustworthiness, existence of physical store and reputation of the e-tailer is ensured.

#### Derived Hypothesis:

*H<sub>1</sub>: There exists a positive association between credibility and perceived trust.*

### b. Security

This is defined as the extent to which protection of customers' sensitive data from “hackers” and “crackers” is ensured.

### Derived Hypothesis:

*H<sub>2</sub>: There exists a positive association between security and perceived trust.*

### c. Privacy

This is defined as the extent to which customer's belief that the e-tailer will not divulge his/her personal information to 3rd parties, willy-nilly, is maintained.

### Derived Hypothesis:

*H<sub>3</sub>: There exists a positive association between privacy and perceived trust.*

### d. Communication

This is defined as the extent to which customer's belief that the e-tailer will be in constant communication with him/her before, during, and after the e-tail sale transaction is maintained.

### Derived Hypothesis:

*H<sub>4</sub>: There exists a positive association between communication and perceived trust.*

### e. Gullibility

This is defined as the extent to which customers get influenced and form opinions based on word-of-mouth communication from others.

### Derived Hypothesis:

*H<sub>5</sub>: There exists a positive association between the individual's gullibility and perceived trust.*

The second stage of the research model posits that perceived trust, perceived value-for-money, perceived navigability and perceived quality of E-service features are the antecedents to establishment of confidence for buying.

### f. Perceived Trust

As explained earlier, perceived trust is defined as the extent to which the consumer is willing to be vulnerable to the actions of an e-tailer, based on the expectation that the e-tailer will perform a particular action important to the consumer, irrespective of the ability to monitor or control the e-tailer.

### Derived Hypothesis:

*H<sub>6</sub>: There exists a positive association between perceived trust and confidence for buying.*

### g. Perceived Value-for-Money (VFM)

This is defined as the extent to which the consumer's belief that e-tail purchase would offer more convenience, faster processes, better bargains etc. as compared to any other form of purchase is maintained.

### Derived Hypothesis:

*H<sub>7</sub>: There exists a positive association between perceived value-for-money and confidence for buying.*

### h. Perceived avigability

This is defined as the extent to which the consumer's belief that the e-tail purchase process is "easy-to-use" is maintained.

### Derived Hypothesis:

*H<sub>8</sub>: There exists a positive association between perceived navigability and confidence for buying*

### i. Perceived Quality of E-service Features

This is defined as the extent to which consumer's belief in quality of the e-tailer's E-service features in terms of fulfillment, efficiency, responsiveness, grievance-handling, interactive decision aids (presence technology, 3D presentation, online help, etc.) is maintained

### Derived Hypothesis:

*H<sub>9</sub>: There exists a positive association between perceived quality of E-services and confidence for buying.*

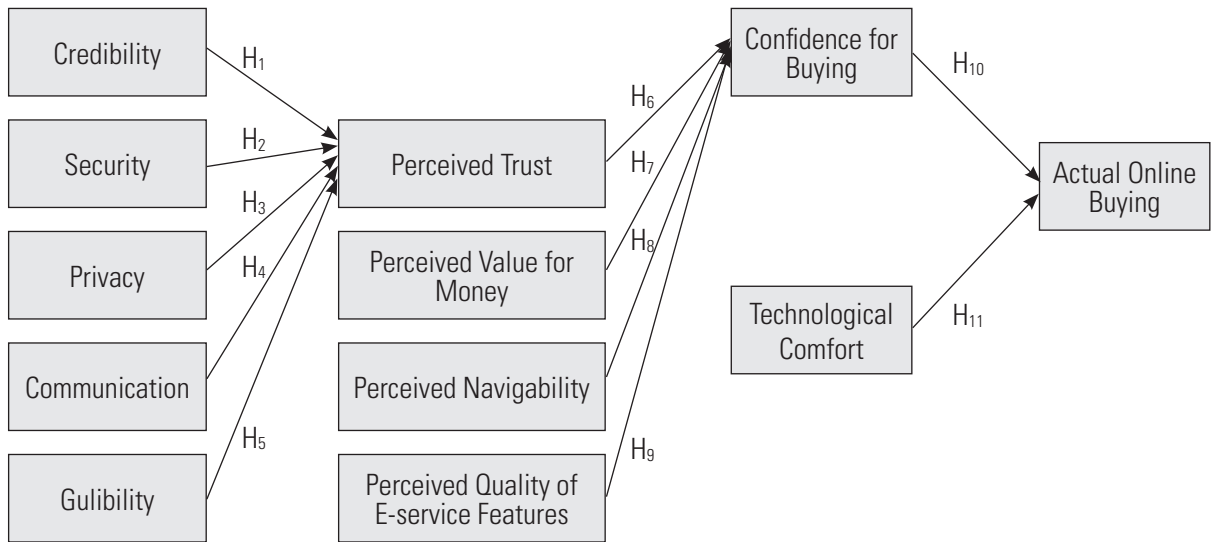
The third stage of the research model posits that confidence for buying is an antecedent for actual online purchase.

### j. Confidence for Buying

This is defined as the extent to which the consumer's confidence in making a purchase in an e-tailing environment is established

### Derived Hypothesis:

*H<sub>10</sub>: There exists a positive association between confidence for buying and actual online buying.*



**Fig 3 Proposed Research Model showing the Derived Hypotheses**

### k. Technological Comfort

This is defined as the extent to which the consumer is comfortable using the computer and other electronic gadgets relevant to E- tailing

#### Derived Hypothesis:

*H<sub>11</sub>: There exists a positive association between technological comfort and actual online buying.*

### 8. Research Methodology

E-tailing is a humungous concept. To understand the various facets of E-tailing it was necessary to adopt a four-pronged approach towards unraveling its many dormant traits and hence, four independent empirical studies were devised, that explored 'e-tailing paradigm' from multiple dimensions.

The buyer-oriented first study, focusing on the e-tail customers, aimed at validating the research model. The seller-oriented second study involved making an assessment of "Net Readiness" across Bangalore-based retailers and e-tailers. The third study, another buyer-oriented study, involved a study of retail visitors in Bangalore city to gain insight into their motivation for visiting physical retail stores and to explore the potential of switching offline shoppers to an online mode. The technology-oriented fourth study involved

benchmarking emulative features of e-tail websites from across the world.

The methodology adopted for each of the four independent studies is elucidated in the following sections.

### 8.1 Methodology for Study of E-tail Customers (current as well as potential customers) for Validating the Research Model

Online consumer behavior was the focal point of this study, as it was important to understand the dynamics of purchase decisions made over the Internet. Hence, the major focus of the study was to understand whether credibility, security, privacy, communication, and gullibility affected a customer's perceived trust, and whether perceived trust, perceived value-for-money, perceived navigability, and perceived quality of Eservice features affected a customer's confidence for buying, and whether confidence for buying and technological comfort affected the actual online buying.

#### 8.1.1. Data Collection Instrument

The aim of this segment of the research was to empirically validate the eleven hypotheses generated in the "E-tail Acceptance Model" that was developed to enhance and customize the traditional technology acceptance model to the Indian context. One of the



foremost challenges in collecting primary data for research is the design of a questionnaire. In order to achieve the best possible questionnaire design, a preliminary questionnaire was created on the basis of 13 online focus group chats held between March and May, 2006 (using yahoo messenger). Each of these discussions had between six to eight participating members. The members were drawn at random from a pool of tech-savvy friends and colleagues, depending on their availability and willingness to log onto yahoo messenger at the pre-designated time. A pre-requisite for participation in the discussions was that each member had to have some degree of familiarity with online shopping. This constraint was imposed to ensure that the final questionnaire is based on the actual experiences, rather than on normative beliefs about online shopping. All the online discussions were guided by a 'discussion guide', whose creation preceded the actual discussions.

The discussions resulted in a preliminary questionnaire that contained 98 close-ended questions to measure the various constructs depicted in the research model. This was distributed to a pilot group of 25 subjects, selected on the basis of convenience sampling. This pilot group not only answered the questionnaire, but also suggested changes in nebulous, fuzzy areas of the questionnaire. The group also made suggestions in the order of the questions. This process had a significant impact on the original questionnaire, narrowing the scope of the questions and eliminating redundant and irrelevant questions. This brought down the number of questions to 83.

The final close-ended questionnaire that was distilled from the preliminary questionnaire was then administered to the respondents in an Excel spreadsheet with red background that had two important "caution-features" - any value provided outside the range of 1 - 5, including null values, would retain the red background in the cell, and secondly, a check-list box was provided as a last column that cautioned the respondent in case the same answer was given more than one response. This enabled respondents to answer questions quickly, yet objectively, with sufficient visual cues in case of

mistakes. The perceptions of the respondents were collected objectively using 5-point Likert scales, thus reducing the complexity involved in collecting subjective data. Various questions within the same construct group were randomized to reduce systemic response bias. An e-mail survey method was selected to float the questionnaire to allow respondents to answer leisurely without time pressure.

### 8.1.2 Sample Frame

The population for this research comprised Bangalore-based internet-savvy consumers, who are all working professionals.

### 8.1.3 Sample Size

Sample size has a direct bearing on the accuracy of the findings relative to the true values in the population. Therefore, determining an appropriate sample size for this research was considered to be of paramount importance.

The required sample size was calculated using a software titled "Sample Size Calculator", provided by the Canada-based research company, 'MaCorr Research Solutions Online<sup>[22]</sup>'. MaCorr is a full-service, online market research firm that provides complete quantitative (e-mail and web page surveys, web panel research) and qualitative (online focus groups) research services across the world. It employs professionals who are fully experienced in a wide variety of research and statistical methodologies. The software uses the following formula for calculating sample size:

$$\text{Sample Size} = \frac{\{(Z^2) * (p) * (1-p)\}}{C^2}$$

where:

Z = no. of std. deviations a point on a distribution is away from the mean (e.g. 1.96 for 95% Confidence Level)

p = percentage picking a choice, expressed as a decimal (p = 0.5 is used for calculating required sample size)

C = confidence interval expressed as decimal (e.g. 0.05 = + 5%)



Assuming, the most widely used values for Confidence Level = 95% & Confidence Interval = 5%, the required sample size identified was:

$$\frac{1.96^2 * 0.5 * 0.5}{0.05^2} = 384$$

A response rate from an e-mail survey might be normally expected between 10% and 50% (Neuman, 2000) [23]. Therefore, to ensure that sufficient data could be collected to allow in-depth analysis, and accurate inferences could be drawn from the data, it was decided to send emailed questionnaires to five times of the sample size (approximately to 1900 subjects).

### 8.1.4 Sampling Method

The concept of e-tailing is of recent origin in India. Hence, e-tail database of consumers is not publicly available (ala directories). Individual e-tailers do have their own customer databases but generally, they are not at liberty to disclose the list due to the security issues involved in the e-tail purchases.

As a result of the stringent privacy policies adopted by the e-tailers it was extremely difficult to locate samples by absolutely random means. The sampling method chosen was "snowball sampling" (sometimes referred to as "network sampling"). Snowball sampling is a non-probability method used when the desired sample characteristic is rare. It may be extremely difficult or cost-prohibitive to locate respondents in these situations. Snowball sampling relies on referrals from initial subjects to generate additional subjects. In the absence of a publicly available database, this was the only technique that could be used. Snowball sampling came at the expense of introducing bias because the technique itself reduces the likelihood that the sample will represent a good cross section from the population.

It was practically impossible to track the number of respondents who finally received the questionnaire, as the questionnaire was sent as an email attachment with a request to forward it to as many Bangalore-based potential respondents as possible. Initially, it was sent to 137 respondents directly but there is no way that one

can estimate how many subjects ended up with a copy of the questionnaire in their mailbox.

522 responses were received till November 15, 2007. Out of these, 62 responses were rejected, as they were grossly incomplete and hence, of little use. The balance 460 responses were retained for data analysis.

### 8.1.5 Data Analysis

The data was then subjected to rigorous quantitative analysis using SPSS 11.0. Factor Analysis was used to reduce the number of variables to the principal components for each construct. The hypothesized relationships depicted in the research model were then tested using multiple linear regressions. Three models were generated and tested.

**Model 1:** The dependent variable (perceived trust) and independent variables (credibility, security, privacy, communication, and gullibility) were entered into a hierarchy for testing hypotheses (H1, H2, H3, H4, and H5). The hypothesized relationships were represented in terms of the following regression equation:

$$PT = \alpha + \beta_1 CRE + \beta_2 SEC + \beta_3 PRI + \beta_4 COM + \beta_5 GUL$$

where: PT = Perceived Trust, CRE = Credibility, SEC = Security, PRI = Privacy, GUL = Gullibility.

**Model 2:** The dependent variable (confidence for buying) and independent variables (perceived trust, perceived value-for-money, perceived navigability, and perceived quality of E-service features) were entered into a hierarchy for testing hypotheses (H6, H7, H8, and H9). The hypothesized relationships were represented in terms of the following regression equation:

$$CB = \alpha + \gamma_1 PT + \gamma_2 PVFM + \gamma_3 PN + \gamma_4 PQ$$

where: CB = Confidence for Buying, PT = Perceived Trust, PVFM = Perceived Value-for-Money, PN = Perceived Navigability, PQ = Perceived Quality of E-services Features.

**Model 3:** The dependent variable (actual online buying) and independent variables (confidence for buying, and technological comfort) were entered into a hierarchy for testing hypotheses (H10, and H11). The hypothesized

relationships were represented in terms of the following regression equation:

$$AOB = \alpha + \zeta_1 CB + \zeta_2 TC$$

where: AOB = Actual Online Buying, CB = Confidence for Buying, TC = Technological Comfort.

## **8.2 Net Readiness Study in Retailing and E-tailing Units in Bangalore Metropolitan Area**

The Net Readiness scorecard, developed by Hartman, Sifonis and Kador (2000) from their in-depth analysis of Cisco Systems and other “net” companies, was adopted for the Bangalore-based business context to measure the ability of the e-tailers / retailers to perform and compete in an internet-based economy. 14 Bangalore-based e-tailing units were selected through convenience sampling and the net readiness questionnaire was administered to each of them. Till January 20, 2007, 9 responses were received (response rate = 64.29%).

In addition to e-tailing units, 20 other categories of Bangalore-based retail units were identified - Branded Stores, Computers & Peripherals, Departmental Stores, Fitness, Florists, Footwear Shops, Furnishing & Furniture, Games & Toys Stores, Gift Shops, Home Electronics, Jewelry & Watches, Kitchenware, Leather Stores, Lens & Optics, Luggage & Accessories, Malls & Shopping Centers, Musical Instruments, Pharmacies, Photography, Sports.

25 units were chosen at random from each of the above 20 categories (i.e. a total selection of 500 units) using “Sulekha Yellow Pages”, and during October and November, 2006, a questionnaire was sent to each of the selected unit, and a follow-up reminder call made later. A total of 126 responses were received by January 20, 2007 (response rate = 25.2%); out of these 104 were complete and usable for analysis (final response rate = 20.8%). There were no respondents from the categories of “jewellery & watches”, “luggage & accessories”, and “musical instruments” and hence, these categories were eliminated from the final analysis.

## **8.3 Methodology for Study of E-tail Perceptions through Retail Visitors**

The aim of this segment of the research was to understand the perceptions of online shopping from

shoppers who visit retail stores. It was intended to capture valuable insights from the shoppers at physical stores that would lead to an understanding of the perceptions and potential regarding e-tailing.

### **8.3.1 Data Collection Instrument**

A questionnaire was used for the survey that contained 7 close-ended questions with multiple sub-sections. Out of these, 5 were used to explore the facets of online shopping from different angles. The balance 2 questions were used to gauge the potential of e-tail products and transaction value. The perceptions of the respondents were collected objectively using 5-point Likert scales, thus reducing the complexity involved in collecting subjective data.

### **8.3.2 Sample Frame**

The population for this research comprised visitors to retail outlets across Bangalore city.

### **8.3.3 Sample Size**

The required sample size was calculated using the same software that was used to calculate sample size for validating the research model. As before, the required sample size was calculated as 384.

### **8.3.4 Sampling Method**

The respondents in this segment of the research study comprised visitors in various retail outlets in Bangalore Metropolitan Area, selected through convenience sampling. Time and accessibility were the two constraints in selecting the outlets. The methodology adopted includes accosting visitors at the retail outlets and requesting them for a response.

This study was conducted over a period of eight weekends, during July – September, 2007. Till September 23, 2007, 439 responses were collected, out of which 31 were rejected as they were grossly incomplete and unusable. The balance 408 responses were retained for data analysis.

### **8.3.5 Data Analysis**

The data was then subjected to rigorous quantitative analysis using SPSS 11.0. Factor Analysis was used to reduce the number of variables to the principal components for each construct.

## 8.4 Methodology for Conducting “Emulative Features Benchmarking Study”

Benchmarking is the process of identifying innovative and/or outstanding features that create and sustain exemplary E-tailing websites, and then emulating them. The aim was to reduce duplication by learning from others who have already found the solution. The purpose of this study was to benchmark outstanding features of websites, from throughout the world for a set of identified parameters:

**Website Atmospherics :** Aesthetic appeal (Look & Feel)

**User Interface & Navigation :** Ease of use

**Search :** Simple and advanced input, presentation of results, and search refinement

**Content :** Product Information, overall content

**Payment :** Payment modes, security issues

**Confidence-building Measures:** Third party trust seal, warranties, free trial period, presence technology, product reviews etc.

The objective of this segment of the research study was to gain valuable high-level insights distilled from content analysis of short-listed e-tail websites, which could help drive the design of “the ideal website” for e-tailers.

The methodology employed for conducting the benchmark study is illustrated in the diagram below. This methodology is an adaptation and modification of a similar study conducted by The Hiser Group, Australia in 2001, titled as “Best Practices Benchmarking Study”.

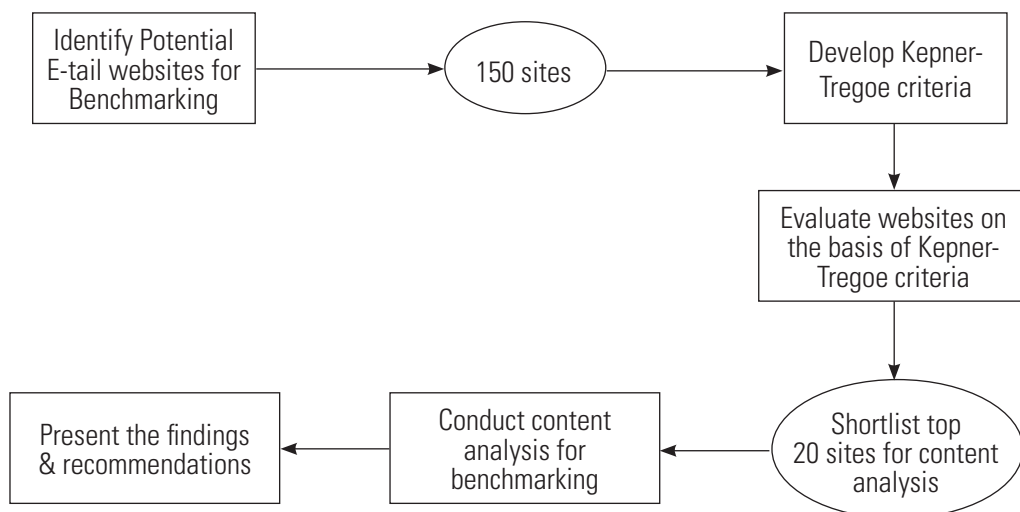
### *Identify Potential Best Practices Sites:*

Discussions with experts, 3rd party website ratings, Hiser Group Study Report, and independent website reviews helped to identify potential sites for benchmarking. 150 sites were identified in this process.

### *Kepner-Tregoe Methodology<sup>[24]</sup>:*

Kepner-Tregoe is a decision analysis methodology that was developed by Kepner-Tregoe Inc. (KT) based in New Jersey, USA. KT is a comprehensive technique for comparatively evaluating solutions, and is particularly applicable for comparing between candidate options. The technique has been widely used for evaluating competing software packages and web sites for satisfying a business need. The KT criteria and the associated weights were developed in consultation with people adept in online shopping. The scale chosen had a range from 1 (“Nice to have”) to 5 (“Essential”).

50 respondents were chosen from a pool of net-savvy friends and colleagues to conduct KT evaluation. Each respondent was mapped to 3 websites picked at random,



**Fig 4: Methodology for Emulative Features Benchmarking Study**

and they were requested to conduct KT evaluation based on the KT criteria and weights provided. All the responses were sorted and the top 20 websites were chosen for content analysis, namely:

www.amazon.com, www.circuitcity.com,  
www.buy.com, www.illuminations.com,  
www.jcpenney.com, www.gxonlinestore.com,  
www.wallmart.com, www.hallmark.com,  
www.netmarket.com, www.shopping.rediff.com,  
www.bluenile.com, www.barnesandnoble.com,  
www.linensnthings.com, www.etoys.com,  
www.travelocity.com, www.kmart.com,  
www.tigerdirect.com, www.lampsusa.com,  
www.shopping.indiatimes.com, www.egghead.com

The 20 short-listed e-tail websites were then subjected to content analysis through the content analyzer website, [www.websiteoptimization.com](http://www.websiteoptimization.com)<sup>[25]</sup>. Website Optimization, LLC is a web performance and internet marketing firm dedicated to increasing bottom line through the optimization of existing web sites.

Each of the websites was tested on the following 11 parameters, wherever present:

- TOTAL\_HTML (the total number of HTML files)
- TOTAL\_OBJECTS (the total number of objects)
- TOTAL\_IMAGES (the total number of images)
- TOTAL\_CSS (the total number of cascading style sheets)
- TOTAL\_SIZE (the total size of the page, in bytes)
- TOTAL\_SCRIPT (the total number of scripts)
- HTML\_SIZE (the total size of the HTML file, in bytes)
- IMAGES\_SIZE (the total size of the images, in bytes)
- SCRIPT\_SIZE (the total size of the scripts, in bytes)
- CSS\_SIZE (the total size of the cascading style sheets, in bytes)
- MULTIM\_SIZE (the total size of the multimedia files, in bytes)

Website Optimization also provided a rating for each of these parameters, as follows:

A => "Congratulation"

B => "Caution"

C => "Warning"

After obtaining the results from Website Optimization, visual content analysis was conducted to elicit the emulative features from the above 20 websites by critically studying them individually.

## 9. Summary of Major Findings

### 9.1 Results of the Empirical Study of E-tail Customers (current as well as potential customers) for Validating the Research Model

Factor analysis helped in reducing the data complexity from 83 variables to 71 variables contained in 22 extracted factors,

#### Model 1:

- The regression equation for Model 1 is:  

$$PT = 0.141 + 0.018(CRE) + 0.197(SEC) + 0.039(PRI) + 0.402(COM) + 0.386(GUL)$$
- Model 1 is statistically significant at 1% level, as observed from the ANOVA table. In other words, the overall F-test for the model is significant at 99% confidence level. This indicates that the model is powerful. Since the significance value of the F statistic is small it signifies that the independent variables have done a good job in explaining the variation in the dependent variable.
- PT (perceived trust) showed positive association with SEC (security), COM (communication), and GUL (gullibility) @ 1% significance level. *Thus, hypotheses  $H_2$ ,  $H_4$ , and  $H_5$  are supported. Hypotheses  $H_1$  and  $H_3$  are rejected.*

#### Model 2:

- The regression equation for Model 2 is:  

$$CB = 1.905 + 0.290(PT) + 0.210(PVFM) + 0.0002(PN) + 0.3262(PQ)$$
- Model 2 is statistically significant at 1% level, as observed from the ANOVA table. In other words, the overall F-test for the model is significant at 99% confidence level. This indicates that the model is powerful. Since the significance value of the F statistic is small it signifies that the independent variables have done a good job in explaining the variation in the dependent variable.

- CB(confidence for buying) showed positive association with PT (perceived trust), PVFM (perceived value-for-money), and PQ (perceived quality of E-service features) @ 1% significance level. *Thus, hypotheses  $H_6$ ,  $H_7$ , and  $H_9$  are supported. Hypotheses  $H_8$  is rejected.*

### Model 3:

- The regression equation for Model 3 is:  

$$AOB = 2.411 + 0.603(CB) + 0.045(TC)$$
- Model 3 is statistically significant at 1% level, as observed from the ANOVA table. In other words, the overall F-test for the model is significant at 99% confidence level. This indicates that the model is powerful. Since the significance value of the F statistic is small it signifies that the independent variables have done a good job in explaining the variation in the dependent variable.
- AOB (actual online buying) showed positive association with CB (confidence for buying) @ 1% significance level. *Thus, hypothesis  $H_{10}$  is supported. Hypotheses  $H_{11}$  is rejected.*

## 9.2 Discussions pertaining to the Results of the Study for Validating Research Model

As hypotheses  $H_1$  and  $H_3$  have been rejected, it can be inferred that perceived trust in the Indian online shopping context is not dependant on credibility or privacy. One important aspect regarding credibility is that in the developed nations, credibility is often equated to the presence (or absence) of a physical store by the same e-tailer <sup>[26]</sup>. In the Indian context, perhaps, such a consideration does not exist in the mindset of consumers. The findings regarding privacy are in line with an average Indian's callous attitude towards privacy. It is a known fact that Indians have very little respect for privacy, in general. That explains why telemarketers have no compunctions in making unsolicited marketing calls to customers, irrespective of the time of the day. It is shocking note that the "National Do-Not-Call Registry", launched by TRAI, Govt. of India, has met with a very tepid response, ever since it commenced in September, 2007<sup>[27]</sup>. Overall, it can be concluded that ensuring credibility and privacy

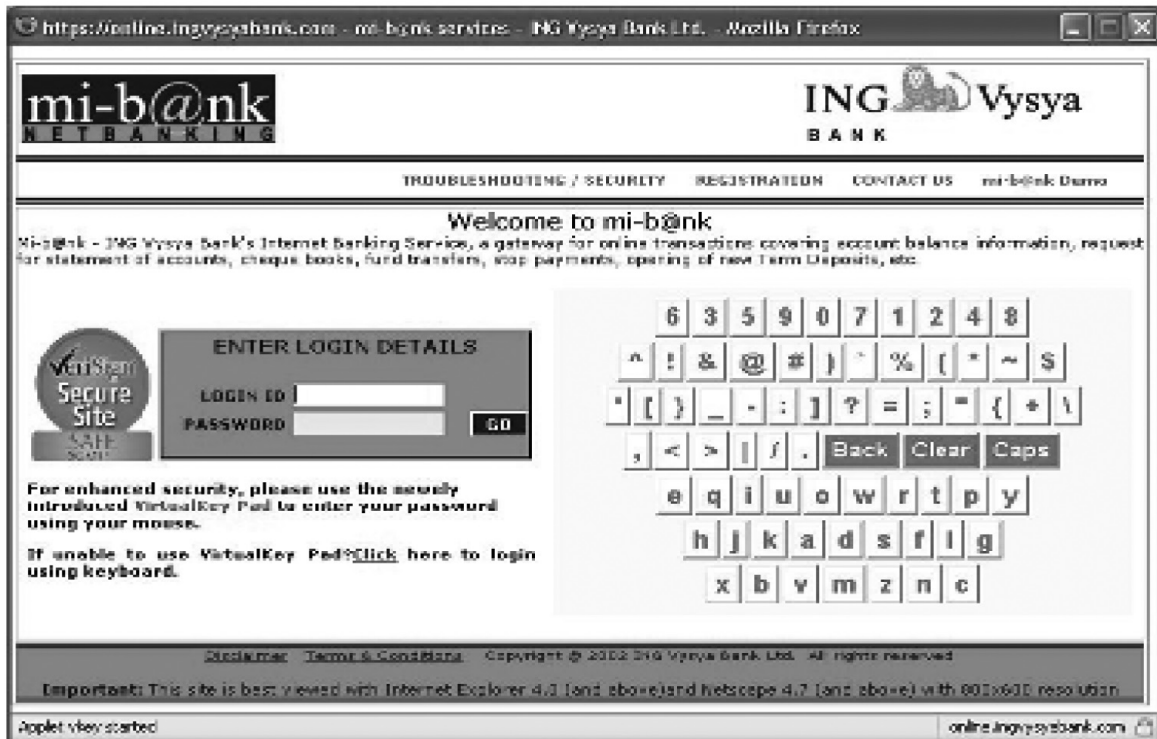
may not be successful USPs per se.

A positive association has been established between security and perceived trust. Thus, e-tailers need to beef up their website security measures to instill confidence in the buyers. The following measures are suggested:

- Online fraud is a dynamic activity. E-tailers need to enforce latest security measures on their websites on an ongoing basis to prevent security threats. It must be borne in mind that even one single incident of security compromise is enough to detract a consumer from making further online purchases. It is analogical to the fact that even a tiny bird hit can crash a jumbo aircraft. E-tailers need to make a collective, collaborative effort to ensure that latest security measures are made available to the entire e-tail community.
- The e-tailers need to procure "security certifications" from trusted third parties like "VERISIGN" for their website transactions, and display them prominently on their website.
- Warnings of new fraudulent means adopted by hackers like phishing, etc. need to be displayed prominently on the website on a regular basis, as is being done by leading online banks.
- Listings in comparative shopping sites like FROOGLE, BIZRATE, SHOPPING, SHOPZILLA etc. need to be considered.
- Dynamic electronic keyboards should be provided on the website to prevent "keyboard stroke capturing". An example of such a key board is given below:

The sequence of alphabets and numbers keep on changing dynamically whenever the page is refreshed. The user needs to fill in the login ID and password, using only mouse clicks on the electronic keyboard. This is a very safe way to ensure that physical keyboard strokes, used otherwise, cannot reveal the combination of login ID and password. Such security features are being provided by the e-banks for online banking transactions only. E-tailers need to adopt this feature on their websites too to ensure that spyware running inside the computer cannot capture and transmit sensitive information to the outside world.





**Fig 5 Example of an Electronic Keyboard (Source: ING Vysya Bank) [28]**

Credit card is the most popular means of making online payments. However, a major problem with a typical credit card is that all information required for completing an online transaction, including payment, are embossed on the card itself, i.e. card number, expiry date, and CVV number. This is a major concern as card theft has become very rampant. Furthermore, in merchant establishments, very often the cards are taken out of view of the customer for swiping. Any unscrupulous person can note down the above three details and make fraudulent online purchases. It is suggested that appropriate biometric technologies be brought in to authenticate the person making the online purchase. This would give a major boost to trust in online sale transactions. Till then, the e-tail website should automatically generate a password and send it to the email ID / mobile number of the concerned person. No transaction should be completed without the password being entered on the e-tail website. Recently, Citibank introduced this feature to authenticate online transfer of money from banking accounts.



**Fig. 6 A Typical Credit Card with all Details Embossed**

Mobile phones can be integrated into the e-tailing paradigm, as mobile phones are much more personal than computers. The huge penetration of mobile phones could be tapped and channelized into an efficient e-tailing service.

A positive association has been established between communication and perceived trust. This indicates that the e-tailers must be in constant communication with customers before, during, and after the sale transaction. The e-tailers need to inform customers about the payment status as soon as it is over through automated email.

A positive association has been established between gullibility and perceived trust. This indicates that the e-tailers must cultivate opinion leaders and consider mass advertising.

A positive association has been established between perceived value-for-money and confidence for buying. This indicates that the e-tailers must offer better bargains; better bulk discounts vis-à-vis retailers. In other words, there should always be a price differential in favor of online purchases. The price advantage should be prominently displayed on the website. Other cost savings like transportation, parking, time costs, etc. should also be highlighted. Institutional membership maybe considered, wherein a member-institute's employees could be offered good deals if they shop online.

A positive association has been established between perceived quality of e-services features and confidence for buying. This indicates that the e-tailers need to provide efficient e-services that are superior to offline mode. The following measures are suggested:

- E-tailers need to ensure that order fulfillment takes place on or before the promised date. This is a serious

concern as the results of one delayed receipt could adversely affect future online purchases.

- The e-tailers need to continuously invest in innovative technologies to provide better and better quality e-services. Presence technology, 3D presentations of products, interactive decision aids, etc. should be considered as starters.

The findings of the study indicate that perceived navigability and technological comfort are not important factors that lead to actual online purchase. This is also in line with the intuitive understanding that innovative user-friendly interfaces are already in existence that are guiding online consumers towards successful purchase without any hassle. Thus, navigating a website nowadays is very easy and is not related to the level of technological comfort that could act as an impediment in making online purchases.

### 9.3 E-tail Readiness Study in Retailing and E-tailing Units in Bangalore Metropolitan Area

It is interesting to note that in the retail units category, competencies received the highest score in each category except for photography. Similarly, governance received the lowest score in each category except for footwear. In the e-tail units category, technology received the highest scores whereas governance received the least scores.

The “E-tail Retail Gap”, as indicated by the net readiness average scores is given below:

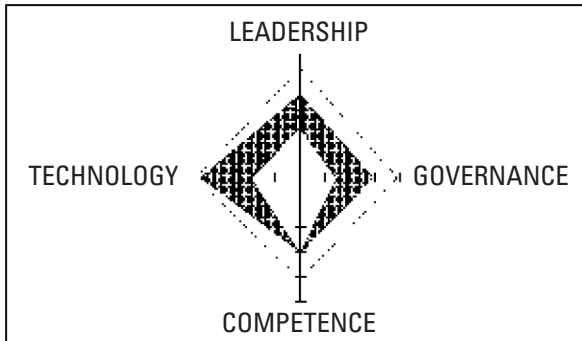
The shaded portions in diagram below show the gap between E-tail and retail units. The dotted lines show the best-of-breed values. It is an interesting observation that both E-tail and retail units have exhibited almost equal competencies. E-tail units are far ahead in technology, whereas the leadership gap and governance gap seem to converge.

Catagory	Leadership	Governance	Competencies	Technology
E-tail Units	3.36	2.92	3.06	3.98
Retail Units	2.00	1.47	3.06	1.99
<b>GAP (E-TAIL - RETAIL)</b>	<b>1.47</b>	<b>1.71</b>	<b>0.21</b>	<b>2.10</b>

**Table 1: The E-tail Retail Gap**



This suggests that retail units will need a fundamental change in the leadership mindset and governance method to move towards an E-tailing mode of operation.



**Fig. 7 The E-tail Retail Gap**

The overall results portray a very dismal picture of net readiness in retail units in Bangalore. "Net Agnostic" companies comprise a whopping 71%, whereas there is not even a single "Net Visionary" company. This indicates that e-mode of business is not of much significance to this sector. It would require a multi-pronged strategy to change the mindset and bring them under the fold of E-tailing.

To start with, it is suggested that the retailers be encouraged to add a website as an additional channel for taking orders, just as telephone was treated as another means of booking orders, without the customer having to physically visit the store. Over time, the websites can be updated to full-scale E-tail websites.

The level of net readiness for e-tailing units in Bangalore, on the other hand, presents a much more encouraging picture. When compared to best-of-breed values it is seen that for e-tailing units the gaps are: leadership (0.93), governance (0.72), competencies (0.93), and technology (0.01). This implies that Bangalore-based e-tailers have as good a technology as compared to the best in the world. However, leadership and competencies are not upto the international mark. E-tailers need to strive hard to close the gaps in each of these areas to ensure that they are world-class, not only in the products but also in the process. This would benefit them a lot as they can easily graduate to a successful international e-tailer, because getting foreign

customers then will not be a problem. Even governance has to be addressed properly, as poor governance can play spoilsport to honest efforts attempted at widening the e-tailing net.

### 9.3 Results of Empirical Study of Understanding E-tail Perceptions through Retail Visitors

All the findings in this particular study relate to the perceptions of physical visitors who were accosted at various retail establishments in Bangalore. The results can be judiciously used by e-tailers to spruce up their offerings and marketing communications.

It can be observed from the findings of the first segment of the study that the individual reasons, per se, that spur people to visit retail stores are - making pre-planned purchases, window-shopping, socializing, checking out new electronic gadgets, checking out new CDs/ DVDs in the market, new fashion, enjoying the ambience, watching movies, getting best bargains, and enjoying the sight of attractive people in the retail centre. Surprisingly, checking out new fashion received the highest response at more than 70%. Many of these reasons like socializing; enjoying the ambience, and enjoying the sight of attractive people cannot be replicated at all in the digital world of online shopping. That goes to show that online shopping can never actually replace physical shopping in India, not in the near future at least. However, some of the other reasons can be replicated in the online world either totally or partially. The onus of simulating the real world onto a digital screen clearly rests with the e-tailers, who have to invest in technologies that can bridge the gap between the physical world and the online world. Probably having a me-too website may not be sufficient, as customers may not be able to distinguish between two websites with similar features.

Factor Analysis helps to classify the principal factors for visiting retail establishments as "facilities", "new products display", "recreation", "time-pass", "actual purchase", "dining", and "bargains and discounts". Etailers could benefit by exploring the feasibility of replicating the above factors in the online world, wherever possible.

The second segment of the study reveals some interesting results that can be used by e-tailers as strong reasons for weaning away people from physical shopping to online shopping. The major reasons for avoiding physical stores appear to be parking problems, transportation problems, long check-out queues, crowd problems, traffic woes, indecent visitors, and the need to carry large amounts of cash for heavy shopping. All these problems can be negated in the online shopping mode. It needs to be pointed out that many retail establishments accept credit card payments, but many of them impose an additional 2.5% charge from the customers, leading to an increase in the price of the product. Hence, the need for carrying cash into the retail establishment arises. E-tailers need to integrate these findings in their marketing communication.

Factor Analysis helps to classify the principal factors for avoiding visiting retail establishments as “cumbersome sales completion process”, “decency expectation”, “uncomfortable transit”, and “visit-oriented woes”. Such factors should be highlighted by the e-tailers as strong reasons to make shoppers adopt online shopping mode.

The results of the third segment of the study reveal some reasons that make people eschew online shopping. Lack of credit card appears to be a major reason and hence, e-tailers have to devise alternative means of payment. Although some e-tailers have provided this option, the general impression is that online shopping cannot be done without possessing credit cards. It is upto the e-tailers to break this myth and communicate to the public that credit card is just one of the many ways of making a payment. Another reason that seems to be strong is that people need to see the product before buying. It may be a good idea to encourage the idea of collecting payment after the product is received by the customer and used for a pre-specified trial period. It is suggested that although credit card details be collected and authenticated on day zero, the actual debit take place only on a stipulated post-delivery date. This would boost the trust factor. Technology phobia has also been cited as a major reason for avoiding online shopping. To this extent, e-tailers have to ensure that the entire process of online shopping is simple and relatively free-of-effort. A case in point is the usage of

mobile phones in India – although Internet and mobile phones hit the Indian market almost simultaneously, the penetration achieved by mobile phones is phenomenal and has overtaken Internet penetration by leaps and bounds. One possible reason could be the ease of using a mobile phone. E-tailers need to take a cue from mobile phone vendors who have ensured that despite advanced functionalities; any person with a very basic understanding of alphabets and numbers can also use the phones easily, using visual imageries. This requires a concerted collective effort on the part of e-tailers to educate consumers about how to go about online shopping in a hassle-free manner.

Factor Analysis helps to classify the principal factors for avoiding online shopping as “product quality paranoia”, “technology-ignoramus”, “technology-destitute”, and “gregarious factor”. E-tailers should strive to address all these issues appropriately, barring the gregarious factor, which is probably something that is inherent cannot be changed.

The fourth segment of the study indicates the categories of products that are likely to be purchased online. It appears that products like CDs/DVDs, stationery items, computers and peripherals, consumer electronic items, kitchenware, home appliances, and gifts have potential for being sold online. Products like groceries/fruits, jewellery, children’s products, healthcare, beauty, medicines, cosmetics, beverages, confectionery, food items, footwear, and apparels do not seem to have caught the fancy of online shoppers. It may have nothing to do with the pricing alone – cheap products like groceries along with expensive products like jewellery have been cast into the same bracket in terms of non-popularity in online purchases. It could be a pre-conceived notion that such kinds of products are best bought at physical stores where the quality can be gauged first-hand before purchasing them. E-tailers need to break such mental blocks if the spectrum of successful online sales has to be broadened.

The fifth segment of the study reveals that, as expected, almost 30% of the respondents are willing to shop online for less than Rs. 1000 for a single transaction. 26% of the respondents are willing to spend upto Rs. 2500, whereas 21% are willing to go upto Rs. 5000. It is worth probing as to why this mind-set exists. After

all, a Rs.100 online transaction holds the same security risks as a Rs. 1 lakh transaction (post-revealing the credit card details). It is absurd to think that a Rs. 1 lakh transaction is 1000 times more risky than a Rs. 100 transaction – but that could be a mind-set, that calls for serious efforts on the e-tailer's part. They need to devise strategies for making consumers spend larger amounts in single online transactions.

The fifth segment of the study indicates that the major perceived problems in online shopping are lost orders, security and privacy getting compromised, unsatisfactory quality of products, inadequate grievance-handling mechanisms, delay in obtaining products, and a non-existing goods return policy. E-tailers need to exorcise these perceptions and ensure that all these are issues adequately dealt with.

Factor Analysis helps to classify the principal factors for perceived problems in online shopping as “perceived product/process problems”, and “perceived appraisal”. In reality such problems may not be significant, but the fact that such perceptions exist can damage the efforts of e-tailers in promoting adoption of online shopping. E-tailers have to ensure that such negative perceptions are dispelled; otherwise e-tailing as a preferred mode of shopping in India will remain a pipe-dream.

The final segment of the study indicates some of the reasons that could perhaps make physical shoppers graduate to an online mode, namely, alternative payment methods, payment after receipt of goods, simple and user-friendly online shopping process, big price advantage, effective grievance-handling mechanism, full refund for unsatisfactory products, free trial period, and bigger and better bargains / offers.

Factor Analysis helps to classify the principal factors that could make shoppers willing to switch to online mode as “confidence booster”, and “E-service faith booster”. It would be worthwhile for the e-tailers to pay heed to these factors as they can drive conversion from offline to online mode.

#### **9.4 Results of the qualitative “Emulative Features Benchmarking Study”**

Extensive qualitative content analysis was conducted on each of the short-listed 20 websites, on the 6 identified

parameters mentioned earlier. The findings have been crystallized into a scheme of recommendations.

It is believed that the high-level insights distilled from content analysis of the 20 short-listed e-tail websites can drive the design of “the ideal website” for E-tailers.

A few observations on the findings of the content analysis of the 20 websites is presented below. All the reports have been generated from the independent 3rd party website [www.websiteoptimization.com](http://www.websiteoptimization.com) on December 15, 2007.

- In 95% cases, the number of HTML files is less and has got a rating of ‘A’ congratulation, which most browsers can multithread. This can lead to minimizing HTTP requests, which is a key for website optimization.
- In 85% cases, the number of objects is observed to be high with a rating of ‘C’ (warning), which makes it cumbersome for some browsers to multithread.
- In 85% cases, the number of images is observed to be high with a rating of ‘C’ (warning), which impedes speed of downloading.
- In 56% cases, the number of external CSS is observed to be less with a rating of ‘A’ (congratulation).
- In 80% cases, the total size of the page is observed to be high with a rating of ‘C’ (warning), which impedes speed of downloading. Ideally, page size should be less than 30,000 bytes to achieve sub-eight second response times on 56 kbps connections.
- In 76% cases, the total number of external script files is observed to be on the higher side with a rating of ‘B’ (caution).
- In 60% cases, the total size of the HTML file is observed to be less with a rating of ‘A’ (congratulation).
- In 83% cases, the total size of the images is observed to be high with a rating of ‘C’ (warning).
- In 76% cases, the total size of external CSS is observed to be high with a rating of ‘C’ (warning).
- In 90% cases, the total size of external multimedia files is observed to be less with a rating of ‘A’ (congratulation).

One obvious conclusion that can be drawn from the above is that no e-tail website is perfect. A case in point is the pioneer, [www.amazon.com](http://www.amazon.com) – the website has got an 'A' rating (congratulation) in only 33% of the parameters, and whereas it has got a 'C' rating (warning) in 42% of the parameters. Perhaps the "ideal e-tail website" is yet to appear on the digital horizon. Nevertheless, as the above 20 websites are highly regardedetail websites, it was considered worthwhile to conduct a qualitative content analysis to elicit emulative features that could go a long way in helping e-tailers design their websites for maximum impact.

The following section provides a commentary on the general observations made from the visual qualitative analysis conducted on the 20 short-listed websites. Some suggestions with reference to the 6 parameters chosen earlier are also provided after the commentary. These are intended to serve as general guidelines for the design of the "ideal e-tail website".

- The index page uses visually appealing contrasting colors and fits completely on the computer screen without having to scroll down or to the side.
- Web pages begin with the most important or introductory information first that are then followed by pages that contain specific details.
- Hierarchical menu leads the visitor to a product category and not to an exclusive product per se.
- It is very easy to locate a desired product intuitively with the tools provided at the website with minimum number of clicks.
- Common parlance has been used with scanty technical jargons.
- Page layout is simple, elegant, and uncluttered.
- Most of the applications and operations look identical that makes the website appear consistent.
- Each page downloads quickly and does not make the visitor wait unnecessarily.
- Orphan or dead-end pages have not been encountered.
- Only few clicks were required to locate the desired product

- Very helpful "Help menu" in the tool bar to assist the buyer complete a task
- Graphics are optimized and do not convey the feeling of unnecessary graphics having been used
- Clear "merchandise return policy" and "privacy policy" are displayed prominently.
- Information is provided about the security of the transaction.
- Information appears to be current as a last update date is present.

It should be borne in mind that the website acts as a storefront for the online products and services. Most site visitors are, for the most part, window shoppers and net surfers. The aim of E-tail websites should be to convert these surfers into online customers. Shoppers usually make up their mind about a site instantly as soon as they land on it and consequently, an attractive product layout is critical. "Attractive" is a subjective term and is dependent on a lot of factors, outside the scope of this study. Nevertheless, it is important to strive towards achieving an overall attractive website.

The website should aim at "gently piloting" the visitor through the learning and sales process. Keeping the home page simple and elegant without cluttering could aid this endeavor. Use of frames should be discouraged as individual pages become difficult to bookmark. Furthermore, designers who would like to benchmark this particular website for designing may find frames to be very confusing.

Aesthetic utilization of white space, easily readable fonts, visually appealing color schemes, universally understood symbols, and un-distracting backgrounds are simple, yet powerful means of ensuring pleasant website atmospherics. Not every user can access sounds or animation on their computers. Hence, alternative methods need to be provided to display information. Music, if used, should be euphony and not cacophony.

To provide a "live" feel to the website, a different photo of the product may be looped at pre-fixed intervals. This could be eye-catching and reduce the overall monotony. To sustain interest in a particular website it is necessary to keep the online visitor engaged with

dynamic environments. The visitor must be made to experience the site and not just browse it. Elements like chat features, forums, solicited feedback, and database delivery of custom content goes a long way in promoting the website atmospherics.

The aim of providing a user interface and navigation should be to prevent user frustration while making a purchase. Site navigation should be kept simple and consistent, and all the doubts that may arise in a consumer's mind should be clarified along the way. The "3-click rule" (wherein a visitor is able to access any information regarding the offering within 3 mouse clicks) should be adhered to as far as possible. Crossbrowser compatibility issues need to be addressed appropriately, as complicated menu systems often play havoc with different browsers.

It may be worthwhile to consider the use of "bread-crumbs navigation links", wherein a user can find his exact page location in relation to the overall site. For example, if a user has drilled down from the "DVD page" to the "Hindi Films page" to the "Family Drama page", the bread crumbs links look like this: DVD>Hindi Films> Family Drama.

Information should be organized in such a way that the user can understand what is available from the home page, and then referenced with links to others pages. Intelligent use of imagery can act as effective guides for online navigation. Using common browsing elements like tabs and folder / tree style navigation will be helpful as surfers can intuitively understand their way through the website.

It has been often cited that time constraint <sup>[29]</sup> is one of the major reasons that make people make online purchases. To ensure parity with this line of reasoning, it is important to ensure that shoppers are not made to waste their time searching for whatever they want. One tool that could help shoppers find products faster would be a "fly out" navigational menu, which displays a deeper category menu when a shopper moves their cursor over a link. Fly out menus can be designed to show second or even third level site navigation.

Integrating browsing with searching can be a very good way of transforming simple surfing into serious searches

for online products and services. Providing online guidance tools can help users to search faster. It should be ensured that users can easily fine-tune an existing search by entering additional search keywords.

Intelligent spread of content across the entire website can go a long way in conveying simplicity and logicity. Cluttering pages with too much information and images leads to confusion and so the designers have to strike a balance between quantity and comprehensibility of contents on the webpage. Consistent use of fonts and colors in displaying content would be helpful for intuitive understanding of subsequent web pages from the home page. It would be a good idea to combine information into useful groupings. Providing advanced functionality at regular intervals is definitely desirable but it must be assumed that most users will be intimidated by new features. The trick here would be to present the functionality in a user-friendly manner. User-customization for frequent visitors could be considered.

"Shopping cart abandonment" has been found to be an anathema for E-tailers. In other words, many prospective online purchases come to an abrupt end when the user is directed to the "payments" page. It may be possible that users get confused after reaching this page and so they opt out. To discourage this practice the E-tailers have to ensure that the payment process is very simple and transparent, by providing clear confirmation of all outcomes of actions made at this particular page. To build trust, users must be provided with a clear path for aborting the process at any time. As Indians are generally paranoid about revealing credit / debit card details, E-tailers must provide alternate payment methods like DD, COD, etc.

E-tailers should strive to instill confidence in online sales transactions. Even small errors can obliterate the efforts of E-tailers in acquiring and retaining customers. A lot of endeavor has to be made to ensure that customers do not shy away. To start with, the "About Us" page is mandatory and crucial to boosting customer confidence. It provides a summary of the business, the commitments and direction. Spellings and other factual data should be accurate, as poor spelling and incorrect data act as major trustbusters. Slow downloading



pages should also be optimized for optimum download time. Dynamically changing electronic keyboards for inputting data would be an ideal way to prevent spyware from capturing physical keyboard key strokes. All online sales transactions above a certain amount (say Rs. 3000/-) should be verified physically by the E-tailers by sending an automatic request to the credit card issuing bank to authenticate the buyer by calling him up on his contact number. Alternatively, "password-on-mobile-phone service" for every E-tailing transaction to be completed, can also be considered. A well-monitored grievance-handling mechanism should be put into place to inculcate a feeling of confidence in the website. Privacy and other policies should be clearly displayed on the website. Trusted Third party certifications should be procured and displayed prominently. Maintaining constant communication with customers even after the sale transaction is completed may lead to a boost in customer confidence. It may be worthwhile to consider a FAQ (Frequently asked questions) page. Many questions that surface in surfers' minds tend to be repetitive, which can be compiled into the FAQ page. This could promote customer confidence and save precious time for executives manning the helpline. A prospective client may be somewhat hesitant in asking questions and this hesitancy may translate into a lost sale. A well constructed FAQ can help coax these online customers into purchasing. Testimonials page is another important tool for instilling confidence. For new outfits it is suggested that free samples be given to a select group of prospective customers and take their feedback in the form of a testimonial. This could act as a strong confidence-building measure.

In summary, the following points should be considered by E-tailers for the design of their websites:

- The layout should be easy to understand and use,
- It should reflect the "personal touch" of the traditional store,
- It should provide customer services beyond what is expected,
- The website should be fast to use,
- The home page should be attractive and effective,
- It should allow product to be quickly and easily located,

- It should have a consistent design across all pages,
- It should allow the purchasing process to be fast and easy,
- It should describe products effectively along with attractive pictures,
- It should have easily-readable pages
- It should instill confidence in customers about the safety of online sales transactions.

## **10. Conclusion & Futuristic Note**

### **10.1 Fulfillment of Objectives and Contribution to the Body of Knowledge**

The extent to which the research objectives have been fulfilled can be evaluated by identifying and reviewing the contributions made by this research towards the body of knowledge.

#### **10.1.1 Study of E-tail Customers for Validating the Research Model**

The 'E-tail Acceptance Model' was generated mostly to address the first objective of identifying the antecedents of customer confidence in e-tailing, leading to actual online purchase. This new model has identified the critical factors leading to customer confidence and eventual purchase in an Indian e-tailing environment, thereby contributing to the rising body of knowledge. Its main contribution lies in the fact that it extends the traditional technology acceptance model to accommodate Indian idiosyncrasies like gregariousness and gullibility. None of the reviewed model extensions considered technology or website features, per se, which has been suitably incorporated in the research model. Contemporary terms have been used to replace the earlier terms like "perceived ease of use" and "perceived usefulness", which is another important feature of the research model.

The results of this study provide at least two theoretical contributions to e-tail adoption research. First, the study presents four new empirically tested, reliable, and valid constructs that were found significant in predicting e-tail use, namely 'gullibility', 'perceived value-for-money', 'perceived quality of e-service features', and 'technological comfort'. Second, the results corroborate the fact that specific technology acceptance models

have to be developed for specific classes of technology use. The general model, as advocated by Davis, may not be adequate enough to explain the adoption and use of different types of technologies wherein the specific features of the technology itself play an important role.

This particular study has helped to fulfill the first objective totally and the second objective partially.

### **10.1.2 Net Readiness Study in Retailing and E-tailing Units in Bangalore Metropolitan Area**

The study on retailers and e-tailers in Bangalore has provided the first detailed set of Net Readiness scores. This is probably the first of its kind in India itself. Such studies have been conducted in countries like Bulgaria [30] and New Zealand [31] before. The results contribute to the body of knowledge by providing a snapshot of the state of preparedness for conducting e-mode of business for Bangalore-based retailers and e-tailers. They capture elements of the four essential drivers (leadership, governance, competencies, and technology) of e-business and provide overall picture vis-à-vis best-of-breed companies. The study needs to be repeated over time. Time series data would provide trends within each category of retailer as well as e-tailer to understand progress towards attainment of Net Readiness.

This particular study has helped to fulfill the seventh objective.

### **10.1.3 Study of E-tail Perceptions through Retail Visitors**

This study has revealed a paradox - on one side customers have expressed willingness to shop online subject to certain conditions being fulfilled. On the other side, they have shown reluctance to purchase big ticket items online. This paradox indicates that there is a perceived threat in the customer mindset that prevents them from buying expensive items online, despite the fact that security risks are absolutely the same, be it a cheap item or an expensive item. This would definitely be of use to e-tailers as this bit of knowledge exhorts them to rework their communication

strategy to highlight that all credit card transactions at the website are secure, irrespective of the amount being doled out.

The other contributions made by this particular study are that it has identified factors that explain what drives customers to visit retail establishments, factors that explain why customers avoid visiting retail establishments, factors that act as impediments to the adoption of online shopping, factors that identify major perceived problems in online shopping, and finally factors that could drive conversion from offline mode to online mode of shopping. Further, the types of products that hold potential in the e-tail world have also been identified. These set of findings will be more useful for practitioners than for researchers as the aim was to build up substantive knowledge rather than validate the findings through a theoretical model. For researchers, this can serve as a starting point for further research and building up of research models pertaining to e-tail perceptions through retail customers.

This particular study has helped to fulfill the third and sixth objective totally, and the second and fourth objective partially.

### **10.1.4 Emulative Features Benchmarking Study**

The benchmarking study does not make any original contribution to the body of knowledge because the general guidelines laid down for design of the "ideal e-tail website" have been distilled from content analysis of existing e-tail websites. Nonetheless, the findings can be considered as a compendium for the practitioner.

This particular study has helped to fulfill the fifth objective.

Thus, it is seen that all the objectives with which the research work commenced have been attained.

Regarding contribution, it can be said that in other countries, studies of online consumer behavior in the e-tailing area have been conducted mostly by commercial organizations. This is probably the first systematic study of the e-tailing paradigm in the Indian context conducted by an academic and non-biased researcher. This fact itself can be regarded as a contributing factor.



## 10.2 Limitations of the Study

Although this research makes contributions to the body of knowledge in the e-tailing domain, there are a number of limitations associated with it. This section highlights the limitations.

### 10.2.1 Scope

The main limitation of this research can be ascribed to the research model's coverage in terms of 'perceived trust'. The model attempted to include as many trust-enhancing factors as possible without trying to zero in on one particular factor. The high-level model that resulted might therefore appear to be too general when viewed from only one dimension.

Another major limitation is that e-tailers were not segmented and were treated as generic. For example, there might be a significant difference in perceived trust between a customer buying a laptop from a generic site like [www.bangaloreestore.com](http://www.bangaloreestore.com) and a computer-specific site like [www.computerwarehousepricelist.com](http://www.computerwarehousepricelist.com).

Only English language websites were selected for the "Emulative Features Benchmarking Study" and hence, the desire to choose world's best e-tailing websites could not be fulfilled. Superior websites in other languages have been consciously excluded due to the researcher's illiteracy in those languages.

### 10.2.2 Internal Validity

Internal validity issues refer to the ubiquitous question – "Are the changes in the dependent variable exclusively due to the independent variables that were identified?" The main threats to internal validity in the first study involve the possibility of extraneous or confounding variables. It might be possible that the research model missed one crucial factor that had a significant effect on respondents' responses. One apparent omission in the research model is 'previous experiences'. A previous interaction with an e-tailer or a brand could be an obvious factor that could impact one's trust in the website. Less obvious are cases of brand associations. This refers to situations where a person may not have directly interacted with an e-tailer before but where this e-tailer's website bears resemblance to some other website the person is familiar with, be it trusted or not.

Such a situation would bring forth another factor into the 'perceived trust' equation that would be difficult to comprehend, let alone quantify.

History effect is another aspect that could have resulted in biased responses, as incidents of fraudulent online sales transactions get published whenever it happens. In fact, during the survey period there was an incident in Bangalore where a lady was shocked to find that air tickets worth Rs. 93,000/- had been fraudulently purchased on her credit card, which was very much in her possession! Such reported incidents could have affected the respondent's state of mind, especially while answering questions on 'perceived trust'.

A possible maturation effect might have also played a role in the first study. 83 questions apparently is a large number for a questionnaire, which took anywhere between 45 minutes to 1 hour to complete. Because of the length of the questionnaire, respondents might have been less motivated and less alert towards the end.

There is a possibility that the benchmarking study could have missed some new features that were introduced later. Given that live e-tail sites were subjected to content analysis, it is always possible that a lot of features might have changed from one day to the next, because of the dynamics of web authoring. This could have been countered if all the short-listed e-tail websites were subjected to content analysis all at once, which was not a feasible option, considering the constraint on resources.

### 10.2.3 External Validity

External validity is concerned with the generalizability of the results. The sample selection using snowball sampling in the first study has limited the ability to generalize the finding to the overall population, due to its non-random nature. This sample had to necessarily be tech-savvy with some degree of familiarity with the concept of e-tailing, because it was felt that they would be in a better position to provide proper responses as opposed to novices who may not have understood the contents of the questionnaire. However, more people are increasingly getting attracted by the convenience of online shopping. It is unclear as to what extent the findings would apply to a technology-novice user group.

who are also interested in online shopping but take the help of other people to do the actual purchasing.

An interesting question that arises is whether the results can be generalized to future times. Although the basic concepts of the constructs will certainly not change over time, technology changes at a staggering pace and so does people's attitude to novel and innovative website features. Furthermore, the legal fabric for e-tail transactions might also change in a manner that would give customers more rights and more protection. In that case, customer perceptions can change in favor of e-tailing. However, it is hoped that the basic framework of the 'E-tail Acceptance Model' was articulated at a high enough level to remain applicable to different flavors of electronically-mediated retailing.

Website design is a dynamic activity. Thus, the 'shelf-life' of the identified emulative features of best e-tail stores is only temporal and may not be sustainable for too long a time.

#### **10.2.4 Ecological Validity**

Ecological validity refers to the similarity of the test situation to the real situation. In the 'Emulative Features Benchmarking Study', each selected respondent was asked to provide a response for three websites based on the Kepner-Tregoe criteria. In this case, a pertinent question that arises is – "was the participant's behavior during the evaluation similar to that in a real online shopping situation?" The main limitation in this particular study stems from the fact that none of the respondents were really about to make a purchase from the respective websites they were evaluating. This lack of intrinsic motivation might have affected the quality of the feedback with respect to the Kepner-Tregoe parameters.

#### **10.3 Future of e-tailing – What is needed?**

The four empirical studies have captured shortfalls as well as unaddressed potentials in the e-tailing paradigm in India, using Bangalore as a representative city. To generate a spurt in e-tailing activities e-tailers need to abide by the validated research model. The concepts and applications of 'security', 'communication', and 'gullibility' need to be appropriately addressed

to generate the desired level of 'perceived trust'. Suggestions derived from the benchmarking study of e-tail websites from across the world, if implemented judiciously, can go a long way in achieving this. Proper thrust needs to be provided to the perceptions regarding 'value-for-money' and 'quality of e-service features' in an e-tail offering. The suggestions emanating from the study of e-tail perceptions through retail visitors, if implemented, can drive conversions. E-tailers of the present as well as the future need to upgrade their business processes, their leadership skills, governance modes, organizational competencies and technologies on an ongoing basis to scale the pinnacle of net readiness. Only when these aspects are taken care of, will the Indian psyche witness a paradigm shift from offline to online mode of shopping and there will be manifold growth in e-tailing business.

While discussing the future of e-tailing one must not have unrealistic expectations. Net-net, it is difficult for e-tailing to establish as a 'complete business', even if the internet users increase. The reason: the Internet itself. Internet, from a technological perspective, is a network of heterogeneous network topologies. Just as telephone brought a network into business, Internet brings 'yet another channel' to sell--just like any other non-store channel! Organized retailing will gain the edge till the market dynamics are in favor. And yes, e-tailing will remain an auxiliary channel to provide hard-to-find content in a cost-efficient way. Internet, for e-tailers would also build the advantage of interactivity around selling products/services.

#### **10.4 Directions for Future Research**

As expounded in an earlier section, this study does have some limitations that have been acknowledged and need to be addressed in future studies:

First, though the results provide a good understanding of the online purchasing behavior of the tech-savvy population, they may not provide insights into the behavior of a consumer who is not necessarily a regular computer user, but is all the same purchasing online. As Internet use is increasing across all demographics, it would be interesting to compare the buying behavior of these two types of populations – 'tech-savvy' and 'tech-novice'.

Second, specific categories of e-tailers need to be considered to check whether the empirically tested 'E-tail Acceptance Model' is valid across all categories. In other words, it needs to be checked whether the model displays the same results when the participants are asked to provide their responses in relation to say, a website that sells only flowers, or only apparels.

Third, the Net Readiness study was only a starting point in understanding the level of preparedness for conducting e-mode of business. Future researchers are encouraged to build up the concept and devise strategies that could bridge the "E-tail Retail Gap."

Finally, the art of website design is akin to the art of fashion. It would be interesting for future researchers to conduct research studies to understand the nature and impact of the "fashion factor" and its relationship to overall e-tail success.

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