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K. L. Mohana Varma

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Overview

Urbanisation is considered to be an integral part of the economic development of a country. The level of urbanisation is often referred to as an index of economic development. Migration of labour from the rural to the urban settlements seems to be a common phenomenon of the urbanisation process of several countries. It has been reported that around two-fifth of the total urban growth in the Third World has materialised through rural-urban migration.

Although Nepal today ranks among the poorest and the least developed countries in the world, the economy is slowly picking up and showing signs of getting transformed from rural to urban based.

The lead article in this issue, co-authored by Dr. Kishore G. Kulkarni, Professor, Metropolitan State College of Denver, US, Editor, Indian Journal of Economics and Business, US, and a member of the Editorial Board of our journal, is a study paper on the rural urban migration trend in Nepal.

Export of a country plays an important role in the economy. However, there has been a lot of debate among development economists on the relationship between export growth and economic growth. Empirical evidences are there to show that export promotion leads to economic growth and economic growth leads to expansion of export.

The second lead article in this edition is a study paper making an attempt to reinvestigate the dynamics of relationship between exports and economic growth in India.

As usual, this issue brings to you a collection of informative articles that will provide useful insights into a variety of topics like workforce diversity, fast fashion retailing, women's self help groups, customer relationship management, brand loyalty management and so on.

Dr. G. P. C. NAYAR
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Editorial

Psychic patterns in Business space

'Psychic" is a word relating to the particular nature in man. This helps man perceive spatiality through senses. No sense can operate independently. It has to function with brain as a coordinating and associating factor. The brain relates touch, sight, smell, hearing and taste to thought related images. This is the key point in perception. Brain formats the visual images in the mind. It may predict the future. The mind functions as the centre of thought, emotion, and behaviour. It consciously adjusts or mediates man's responses to the social and physical environment. The word 'psychic' means relating to or being influenced by the human mind or psyche. It attempts to convey the working of the human psyche, in all its perceptional, psychological and prognosticating features. These features form patterns in minds. A pattern is a composition of traits and features characteristics of an individual or group.

Space can be segregated into the vistas of exterior space and those of interior space. Exterior space encompasses the spaces that can be grasped and perceived by the five senses, or the faculties of sight, taste, touch, hearing and smell. Interior space is perceived through the sense of the mind: metaphysical, psychological, artistic, narrative and virtual spaces. Space requires a societal and cultural background in order to be clearly conjectured. Space in this context can be broadly seen as occupying three broad areas: physical, philosophical, and experiential. These wide spectrums include manifold spatial constructs that can be identified in terms like cosmological, architectural, artistic, narrative, psychological, narrative, and business.

Man is crazy for progress. Progress depends on the growth of business too. He is yearning for newer and newer businesses: either through innovating the present or establishing the new. Understanding the present state of already existing ones will be required for that. Business can be understood ontologically if one succeeds in discovering the psychic patterns in business space. Man is always trying to innovate and improve the already existing businesses. Poor grasp of this will not let one innovate business. The innovation is taking place first in the psychic patterns in the mind. This shows that the study and evaluation of businesses are possible using the ontological existence of business: it would make the manager feel the nature and the function of business. Such a comprehension will help entrepreneurs to continuously innovate and enhance the quality of business. Innovation comprises selection and substitution. By innovation, one can select an item which demands substitution. Such an item will be substituted with the best possible from among the new ones. A continuous process of innovation would improve the quality of businesses.

Dr. D. Radhakrishnan Nair

Lewis' Two Sector Model

Nepalese Economy

Shreesh Bhattarai and Kishore G. Kulkarni

Abstract

This paper, using Arthur Lewis' Two-Sector Model, tests the rural urban migration trend in Nepal. Additionally, using empirical data, it analyzes the patterns, processes, and characteristics of urbanization in Nepal. The two-sector model explains the transition of labor and focuses on the impact of this transition on the economic development of a country. Nepal in recent years has seen immense migration of workers from rural to urban areas. Mostly driven by higher wages, this migration trend is slowly taking Nepal from a rural agricultural based economy to an urban industrial based economy. Analysis of the various labour mobility trends and other economic data reveal that Nepal is going through this transformation. With the expansion of the industrial sector, majority of the Nepalese population has experienced a higher standard of living.

Nepal is a small landlocked country sandwiched between China and India. A country mainly known for the infamous Mount Everest and the Himalayas, Nepal is also known for its highly diverse and rich geography, culture, and religion. Hinduism is practised by the majority of the people. Also, birth place of the God Buddha, Buddhism is practised by the minority of the people. Despite its natural beauty and unique culture, Nepal is the poorest country in South Asia (World Bank, 2009). Despite being neighbours to two of the biggest developing countries in the world, India and China, Nepal has struggled to transform from a traditional economy to a modern economy. Thanks to constant political instability and

a recent ten year civil war, Nepal has taken a step backward to become an underprivileged country.

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Historically, Nepal has been predominantly an agricultural society. In other words, agricultural sector has been the core of the Nepalese economy, providing a livelihood for three-fourths of the population and accounting for about one-third of its Gross Domestic Product (GDP) (CIA, 2010). However, over the last few years, Nepal has started to transform from a rural based economy to an urban based economy. According to the CIA Fact Book, the agricultural sector accounted for 76 percent of the Nepali work force in 2009 compared to 93 percent in 1981. Also, in 2009,

only 35 percent of the country's GDP was derived from the agricultural sector compared to 62 percent in 1981 (Sharma, 1989, p. 2). This 17 percent change in the work force and almost double the change in Nepal's GDP in three decades shows that Nepal is slowly but steadily transforming into an urban based economy.

People have been migrating to the capital city of Kathmandu in hopes of earning higher wages in the urban sector. Nepal had seen urban growth before the current trend but at a different pace. From the early 1950s to 1981, urban growth in Nepal was relatively rapid; however, the level of urbanization remained very low (Sharma, 1989, p.3). The migration trend was also a little different from what is prevalent now. In other words, the **urbanization was mostly observed in the *Tarai* (plain) region in** Nepal. The existence of an open border with India had given an incentive to people in the hilly region to migrate to the *Tarai* in order to exploit the increasing commercial opportunities with India (Sharma, 1989, p. 7).

This paper aims to evaluate the policies and trends in the rural-urban migration in Nepal. In order to accomplish this research, the basic economic theories that address this issue must be understood. The most important economic theory that applies to the rural-urban transformation is the Arthur Lewis Two-Sector Model. This model states that developing countries' economies are comprised of two main sectors: the rural agriculture sector and the urban industrial sector. The rural agriculture sector is the largest and initially employs the majority of the workforce. This sector entails low wages, low productivity and low income. On the other hand, the modern industrial sector is characterized by higher wage rates than the agricultural sector, higher marginal productivity of labour and an initial demand for more workers. This model predicts that workers will migrate from the rural areas to urban areas because of the potential of earning higher wages in the industrial sector. This paper will test to see if this transformation is really happening in Nepal. Also, this paper will try to analyze the patterns, processes, and characteristics of urbanization and urban growth in the predominantly agricultural and underdeveloped areas in Nepal. Additionally, it will try to examine the impact of urbanization in the development process of Nepal.

An Examination of Arthur Lewis's Two-Sector Development Model

The general characteristics of less developed countries (LDC) include low income, inadequate infrastructure, poor health care system, poor educational system as well as unstable economic and political system. It has been a global challenge, especially for developed countries to try to tackle these complex issues. Since World War II, it has been a big interest in the economics field to determine the best economic policies that can provide higher standards of living in less developed countries (Hendricks and Kulkarni, 2008, p. 6). Various economists and scholars, over the years have proposed different theories as a paramount to achieving economic development. American economic historian Walt W. Rostow proposed *The Stages of Economic Growth*. According to Rostow, for any economy to grow, it had to go through sequential stages. However, he was not explicit of how economic growth would occur. This model was followed by the Harrod-Domar Growth Model which concluded that economic development is a direct result of increase in savings rate. However, in order to increase the savings rate, the model proposed increasing savings by external borrowing from international lending institutions such as the Asian Development Bank, the World Bank and the International Monetary Fund. The biggest problem of this approach was that it could cause repayment problems later which has been the case in many developing countries (Todaro and Smith, pt 115).

In 1954, in an article entitled *Economic Development with Unlimited Supplies of Labour*, Nobel Prize winner Sir Arthur Lewis described a mechanism that drives economic development. The Lewis two-sector model focused on the structural transformation of a primarily subsistence economy (Todaro and Smith, 2009, p. 115). The model became the general theory of the development process in developing countries with surplus-labour during the 1960s and early 1970s. Arthur Lewis described economic development as a result of structural change in two major sectors of a developing economy. A traditional agricultural sector, which is characterized by an abundant, unskilled, and overpopulated labour force whose marginal productivity of labour (MPL) is close to zero and a modern sector which is characterized by higher wages, advanced technique of production and a positive marginal productivity of labour.

Agricultural Sector

The main assumption that the two-sector model makes is the existence of unlimited supply of labour at a subsistence wage rate in the agricultural sector. For many developing countries, this assumption may be very close to reality. For example: a country like India, with a large population compared to capital and natural

resources, has an abundance of labour where the marginal productivity of labour is close to zero (Lewis, 1954, p. 140).

The Agricultural sector, primarily composed of small family-owned farms, operates for non-commercial purposes. Also, family members are the main labourers that help in the production process. This implies that both the labour required to grow the food grains and the wages received from the farm's outputs are shared by all members of the family (Hendricks and Kulkarni, 2008, p. 7). This leads to a very low marginal productivity because each additional unit of labour fails to increase the productivity of the farm, which drives down the wages to a subsistence level. For example, if there were ten people working

in the field to produce 600 units of food, but only six of them were actually needed to produce it, the additional four labourers would not increase the production and therefore would have a zero marginal product. Also, the additional four labourers would drive down the wage to subsistence level (Hendricks and Kulkarni, 2008, p.7). According to Lewis, if the four extra labourers were relocated to work in the industrial sector, the marginal productivity of those individuals would be positive leading to a higher wage than subsistence level. The positive marginal productivity would help increase the country's gross domestic product leading to economic development (Hendricks and Kulkarni, 2008, p.7). The traditional sector is illustrated in the figure below:

Figure 1.1
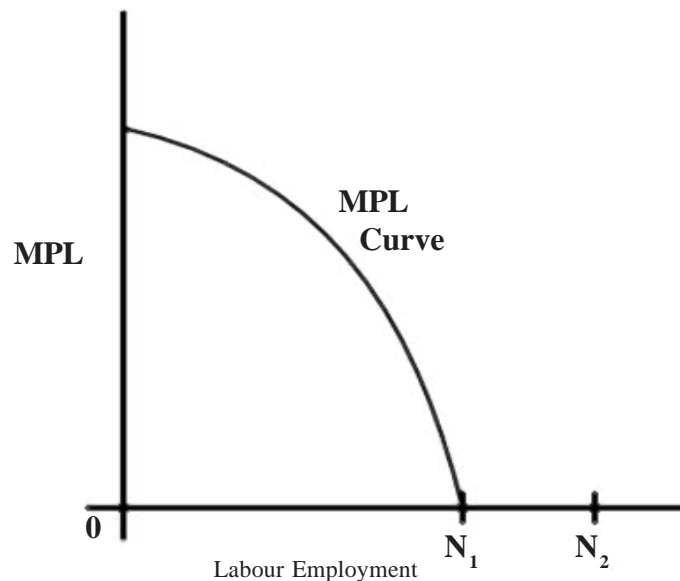
In figure 1.1, the y-axis represents the marginal productivity of labour in the Agricultural sector. The x-axis represents the labour employment. This sector is assumed to have unlimited supply of labour. The MPL in this sector is close to zero. In other words, with the increase in labour from N_1 to N_2, there will be no effect on the total product. Lewis argues that there is no benefit of these excess workers in the agricultural sector. Not only are these excess workers not helping in the total product, but they are also driving down the wage rate in the agricultural sector. Therefore, if the difference between N_2 and N_1 could be sent to the industrial sector, then they would help in the total production.

Industrial Sector

The industrial sector is one where a country uses its raw materials to manufacture goods for consumption or further production. In this sector, the wage rate is higher than subsistence level, the technology of production is more advanced and the marginal productivity of labour (MPL) is positive. As the economy starts to develop in a LDC, its industrial sector gains an inflow of labour from the agricultural sector and causes a rapid increase in the total product due to the positive labour productivity. Positive labour productivity pressures industry to utilize more labour, which

drives up wage rate in a limited urban labour pool. This encourages labour migration from the rural agricultural sector into the industrial sector. The increase in total product due to the addition of productive labour would lead to higher profits. Lewis argues that the industrialists re-invest increased profit to improve technologies or to purchase new capital assets (Todaro and Smith, 2009, p.

115). With re-investment into the business, production keeps growing. This process will ultimately result in a balance between the agricultural and industrial sectors, while also strengthening the economy's diversification and GDP (Hendricks and Kulkarni, 2008, p.7). The illustration of the industrial sector can be found in figure 1.2:

Figure 1.2
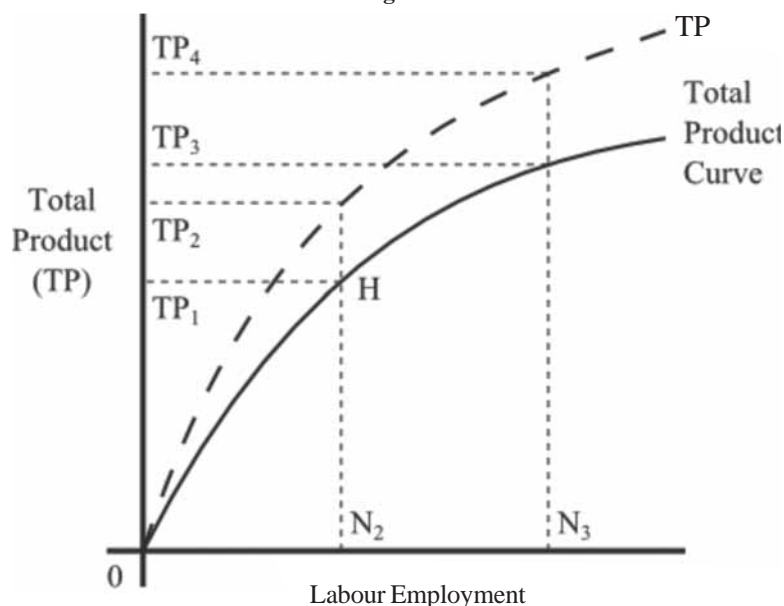
In figure 1.2, the y-axis represents the Total Product (TP) and the x-axis represents the Labour Employment. The total product curve is increasing at a decreasing rate implying diminishing marginal product of labour. The Marginal Product of Labour (MPL) is positive at N_2 and N_3- the industrial sector attracts labour from the rural sector with higher wages, migration begins, and as labour employment increases from N_2 to N_3 in the above figure, total product will increase from TP_1 to TP_3. However, the total product will increase at a decreasing rate due to the diminishing marginal returns of labour. With increased total products, industrialist will earn higher profits, which they re-invest to improve the technology of the industrial sector. In the long run as the technology improves, it shifts the total product curve upward from TP to TP^1 shown by the dotted line in the figure 1.2. With the labour employment staying at N_3, but with a more improved technology, the total product increase from TP_3 to TP_4. The total production keeps increasing with better technology and economic development continues.

The key to economic development after the transformation from the agricultural sector to the industrial sector depends on how the surplus generated by capital production is used (Kulkarni, 2010a, p. 235). One of the key assumptions that Lewis makes in the industrial sector is that the profit is re-invested. If this assumption holds true, the industrial sector expands as capital stock increases. The increase in capital stock creates an increase in the total production creating higher profits. This expansion encourages more migration from the agriculture sector resulting in higher labour productivity. The capital formation continues till the surplus of labour disappears (Lewis, 1954, p. 152). In the end, the surplus of rural labour is absorbed into the industrial sector and economic growth is experienced with higher profits.

Criticisms of the Lewis Model

Lewis bases the success of the two-sector model in the growth of western countries. Many western countries including the United States experienced economic growth when it transformed from an

agricultural economy to an industrial one. Workers in the agricultural sector migrated to the urban areas to work in industries that had higher wage rate. While this phenonomenon worked perfectly for many western countries, the same formula is not applicable to many developing countries. The reason is that many developing countries are not institutionally equipped for a rapid transformation. Even if rural-urban migration takes place and profits are made, political and economic vulnerability prevents the urban sector from being consistently successful.

Lewis assumes that the profit generated is re-investeted back into the sector. The model neglects the fact that capitalists may invest profits in more sophisticated labour saving capital equipment rather than investing back in the existing capital. This strategy may be beneficial to capitalists as it reduces the demand for workers. Also, due to the vulnerability of the local financial institutions, capitalists may decide to invest their money in developed countries, which leads to capital flight. Finally, the profits may be used in high mass consumption as an alternate to re-investment.

The second assumption that Lewis makes is that surplus labour exists in rural areas while full employment is experienced in the urban areas. Rural areas in many developing countries tend to have surplus of labour but only seasonally. During the harvest season, majority of the workers are employed with hardly any surplus of labour. Studies have shown that there is little excess rural labour in many developing countries (Todaro and Smith, 2009).

The third problem is the assumption of a competitive modern-sector-labour market that guarantees the existence of constant real urban wages up to the point where the rural surplus labour supply is exhausted. Todaro and Smith (2009) point out a striking feature of urban labour markets and wage determination prior to the 1980s. Their analysis revealed that in many less developing countries, wages tend to rise substantially over time both in absolute terms, and relative to average rural incomes. This result held true even in the presence of rising levels of open modern-sector unemployment and low or zero marginal productivity in agriculture (Todaro and Smith, 2009, pp. 115-121). In LDCs, the existence of union bargaining power, civil service wage scales, and multinational corporations' hiring practices tend to negate competitive forces in the modern-sector labour markets.

The model also ignores the fact that urbanization can lead to social problems that would not have existed otherwise. Many LDCs face the problem of slums, high crime rates because of excess labour in the urban sector. The Lewis model fails to look at the negative externalities of urbanization. In Nepal, problems such as traffic congestion, lack of drinking water and unplanned growth have degraded quality of life, adversely affected tourism prospects and reduced related employment opportunities, and threatened cultural and heritage sites (Thapa, Murayama, and Ale, 2008, p. 46).

The model assumes that all the profits are invested in the modern sector and that there are no technological changes in the agricultural sector. These may have been true in the early years of agricultural production but it does not hold true today. The Green Revolution (mid-20th century after World War II), with the use of industrial fertilizers and new irrigation facilities greatly increased the world's agricultural output. These new measures of production have led to positive marginal productivity in the agricultural sector.

Despite these criticisms, Lewis' two-sector model explains the foundation of the mass migration to urban areas that can be seen in many developing countries. It points out the steps of how economic growth can be achieved after the transformation from the rural to the urban sector. Even though urban migration has had negative social problems, it has helped majority of people in the labour force involved in industrial production. Recent examples can be seen in countries like India, China, Malaysia, and South Korea. These countries experienced tremendous economic growth after transforming from an agricultural economy to an industrial economy.

Two-Sector Model Application to Nepal

This section applies the two-sector model to Nepal. The model predicts that the labour in a developing country, who are mostly employed in the agricultural sector, migrate to the urban sector to seek higher wages. As this migration trend continues, the urban sector will continue to grow by absorbing the surplus of labour from the agricultural sector. Since the MPL is close to zero, the agricultural sector will not lose productivity due to the migration of workers. Migration should continue until the surplus rural labour is absorbed by the urban sector.

Nepal is a prime example of a developing economy that is experiencing a structural change from a rural agricultural sector to an urban industrial sector. Therefore, it is a perfect place to test the two-sector model. Historically, the country has been

agriculture based, but recently has been taking small steps in transforming into an urban sector. Most of the rural urban migration has been to the major cities such as Biratnagar and Birgunj but the capital city of Nepal, Kathmandu, has been the major recipient of these migrants (UNESCAP, 1995, p. 61).

During the mid 1970s leading up to the early 1980s, majority of the Nepali population was unskilled and primarily employed in agriculture. In 1981, nearly 93 percent of the economically active population was engaged in agricultural activity (Sharma, 1989, p. 5). Only half a percent of the labour force was involved in the manufacturing sector, which is normal for a less developed country that is solely depended on agriculture. Also, 6.4 percent of the then 15 million populations lived in the urban areas. As can be seen in table 1, all other countries had urbanization levels in excess of 15 percent (Sharma, 1989, p. 2).

Table 1: Level of Urbanization (Sharma, 1989, p.2)

Countries	% of Urban Population-1981
Bangladesh	21.5
India	23.7
Nepal	**6.4**
Pakistan	28.3
Sri Lanka	15.2

In the recent years, Nepal has seen an economic growth in terms of GDP and GDP per capita. In 1980, Nepal's per capita income was 297.3 US dollars compared to 1196.9 US dollars in 2009. That is approximately a three percent annual increase over three decades. Since 1995, the country's GDP has been growing by approximately three to four percent. Most of this growth is attributed to the emergence of the industrial sector. The industrial sector has expanded as a percentage of GDP from 11.9 percent in 1980 to 16.7 percent in 2008 (CIA, 2010). With the population of nearly 28 million and an estimated workforce of 18 million, the labour sector is still primarily employed in agriculture. However, in the last two decades, this has changed slightly. In 1989, 91 percent of the workers were employed in the agriculture sector; by 2004 that percentage had dropped to 76 percent. Despite being dependent primarily on agriculture, Nepal is slowly taking steps to make a structural change toward the urban sector.

In order for Lewis' Two-Sector Model to work in the case of Nepal, the model's main assumptions have to be relevant in the country. First, Nepal needs to experience a migration of the rural population to urban areas. Second, as labour makes a transition from the agriculture sector to the urban sector and experience a wage increase, the general level of saving in the country should rise. Third, if MPL is zero in the agriculture sector like Lewis proclaims, then the output in the agriculture sector needs to remain constant as workers make the transition. Fourth, if the profit generated from the industrial sector is to be reinvested into the industrial sector, then there needs to be evidence that the industrial sector is expanding at an increasing rate. Finally, if the structural change from a rural agricultural sector to an industrial urban sector truly leads to economic development, then the standard of living of the Nepalese people should be on the rise. These assumptions of the two-sector model, for the most part meet the condition of Nepal. Now, we will support this claim through empirical evidence.

Over the last three decades, Nepal has experienced massive internal migration. Most of the migration trends have been rural to urban migration. A higher wage rate and a better standard of living have given an incentive for people to make the transition. Figure 1.3 shows the rural- urban migration data in Nepal from 1961-2008.

After looking at the figures 1.3, it is clear that internal migration has taken place in Nepal over the last four decades. The rural population growth in Nepal over the years has been gradually declining as shown by the downward sloping curve. On the other hand, the upward sloping curve shows the continuous increase in urban population. In 2008, 17.24 percent of the population lived in the urban areas, compared to 6.36 percent in 1981. Kathmandu

Figure 1.3

NEPAL- RURAL POPULATION(% OF TOTAL POPULATION)

NEPAL- URBAN POPULATION (% OF TOTAL)

Source: Trading Economics, http://www.tradingeconomics.com
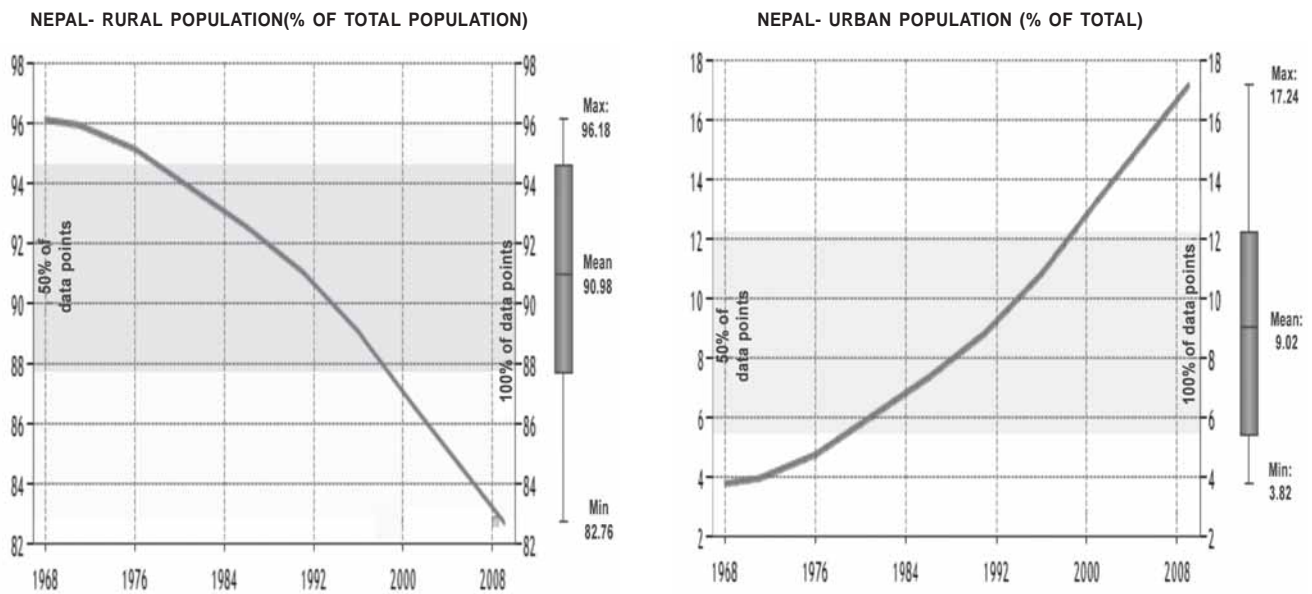
has been the main recipient of these migrants. It is the main political and administrative center, a major tourist gateway, and an economically strategic location in the country (Thapa/ Murayama, 71). People do not have access to these services at other locations in the country, which forces them to either migrate or commute on a regular basis.

Apart from the higher wages, people have chosen to move to the urban areas for variety of other reasons. Other urban growth drivers have been attributed to public service accessibility, land market and most importantly for political situations.

Migration to Kathmandu is appealing for public service accessibility. Services available in Kathmandu such as transportation, electricity, education, drinking water, health services, commercial services, waste disposal, etc are important factors that people take into consideration before migrating (Thapa and Murayama, 2010, p. 75). These services are very hard to find in other areas in the country. Land market over the last decade has also been a very important reason for migration. With urbanization, the price of land has increased exceptionally in the Kathmandu

Valley. People are moving to Kathmandu to speculate in the real estate market by acquiring the undeveloped lands with scattered ownerships, and later develop the land and put on sale (Thapa and Murayama, 2010, p. 75).

The most significant driver of migration to Kathmandu besides economic opportunities has been the political situation of the country. Between 1996 and 2006, Nepal was engaged in the so called "People's War," a war between the government forces and the Maoists, now the communist party of Nepal. The Maoist' objectives were to establish a people's republic and draft a new constitution (Do and Iyer, 4). In order to complete their objectives, Maoist activists used guerilla warfare to attack government facilities and officials. The conflict quickly spread to all regions of Nepal, resulting in more than 13,000 casualties (Do and Iyer, 2007, p. 2). Kathmandu was the safest place during a decade long conflict. Lots of people migrated to Kathmandu to seek security during this time as the situation in the rest of the country was vulnerable. People with wealth that originally lived in the rural areas migrated to the urban areas because of constant harassment by the Maoists. Also, for many, migrating to Kathmandu opened

Figure 1.4

NEPAL - ADJUSTED SAVINGS : NET NATIONAL SAVINGS (%OF GNI)

Source: Trading Economics, http://www.tradingeconomics.com

Figure 1.5

NEPAL - ADJUSTED SAVINGS: NET NATIONAL SAVINGS (US DOLLAR)
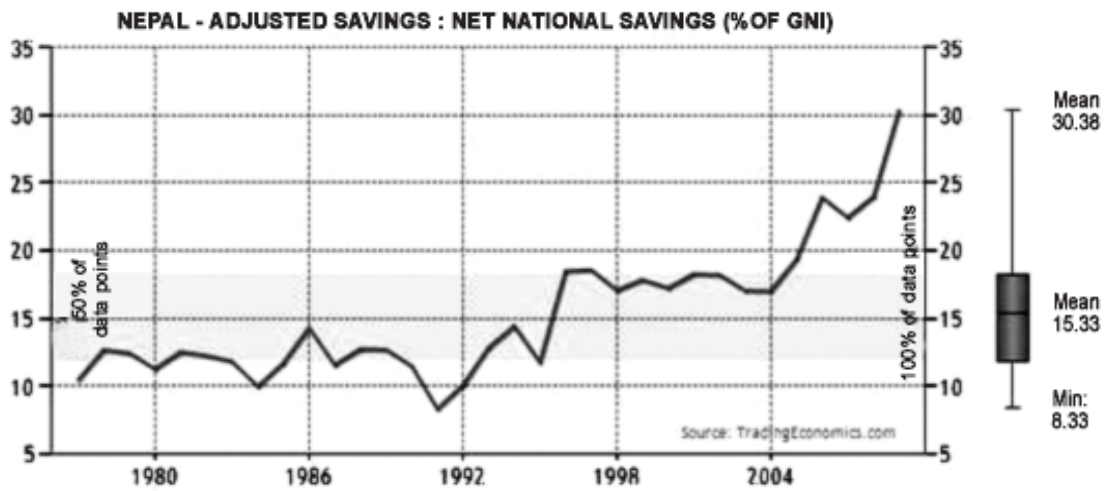
Source: Trading Economics, http://www.tradingeconomics.com
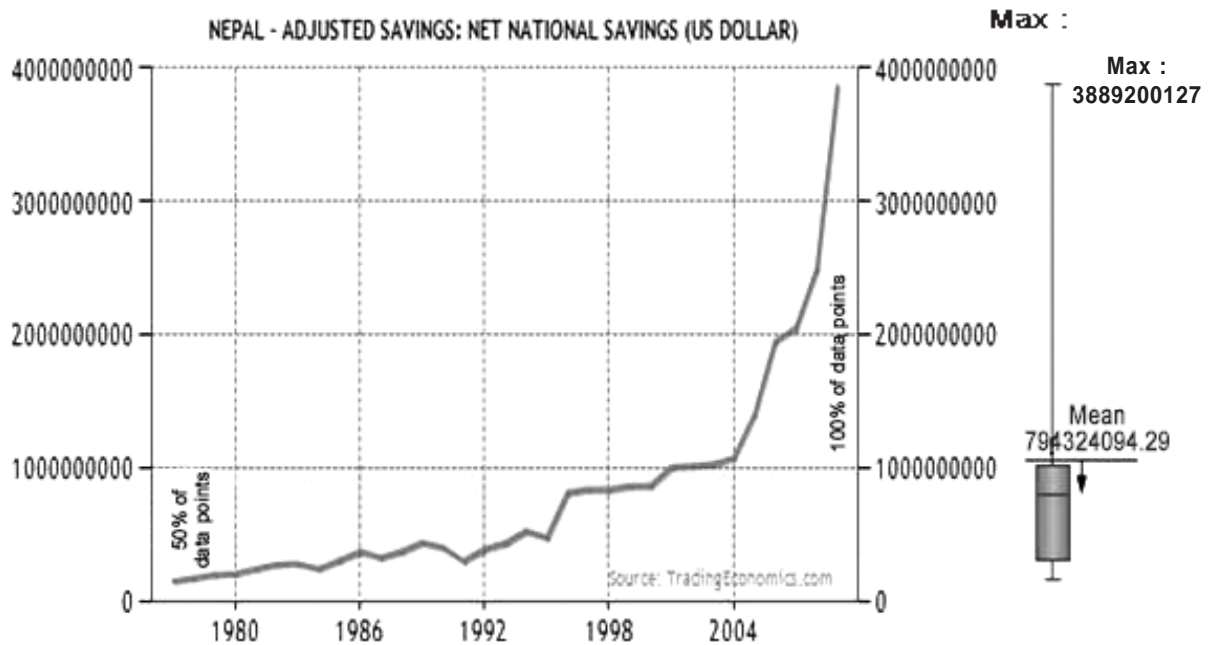
up business opportunities that were not allowed by the Maoists in rural areas.

According to the model, the rise in wages due to industrial employment should raise the level of national savings. Lewis argues that the profit generated from the industrial sector is reinvested causing an increase in the capital stock. Figure 1.4 shows the net national savings as a percentage of Gross National Income (GNI).

From figure 1.4, we can see that the net national savings in Nepal have gradually increased in the time period of 1980-2008. In 1980, the net national savings was only 12.27 percent of GNI compared to 30.38 percent in 2008. The increase in national savings can be attributed to higher wages in the industrial sector. As wages increased in the industrial sector, workers started saving part of the income partly for future security. The labourers did not have the luxury to save in the agriculture sector because they were hardly earning enough to live at a subsistence level. However, in the industrial sector they had the option to save part of their income. The domestic savings in real US dollars have increased even more dramatically in Nepal in this time period as can be seen from Figure 1.5.

Here, we can see that the domestic savings has dramatically increased in the last thirty years. Specifically, from 2004-2008,

the net national savings increased by a very high percentage. It can be observed from the data that the structural change from the rural agriculture sector to the urban industrial sector has led to a rise in domestic savings.

The rise in domestic savings has had a positive effect on the private sector in Nepal. Harrod Domar (H-D) model pointed out that for a developing country to have economic prosperity; it had to increase its savings rate. An increase in the savings rate would increase the rate of investment as H-D theory proved that savings equal investment. With higher savings, Nepal is experiencing higher investment in the private sector than ever before. Just like what Lewis predicted, more and more domestic savings have been used to fund the industrial production. Figure 1.6 illustrates this point.

In 2008, the domestic credit to private sector (as percent of GDP) in Nepal was reported at 40.80 compared to 13.35 in 1991 and 30.67 in 2000. Domestic credit to private sector refers to financial resources provided to the private sector, such as loans, purchases or non-equity securities and trade credits and other accounts relievable that establish a claim for repayment (World Bank, 2009). This increase in domestic credit has helped to boost investment in Nepal.

According to the Lewis model, the loss of workers in the agricultural sector should not have any effect on the agriculture

Figure: 1.6
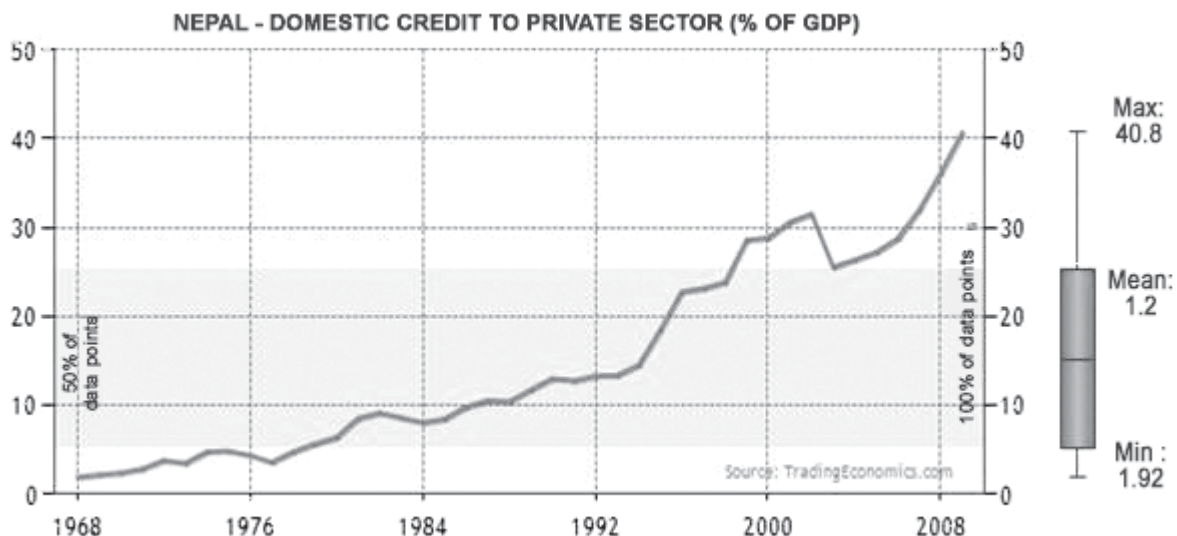
Source: Trading Economics, http://www.tradingeconomics.com
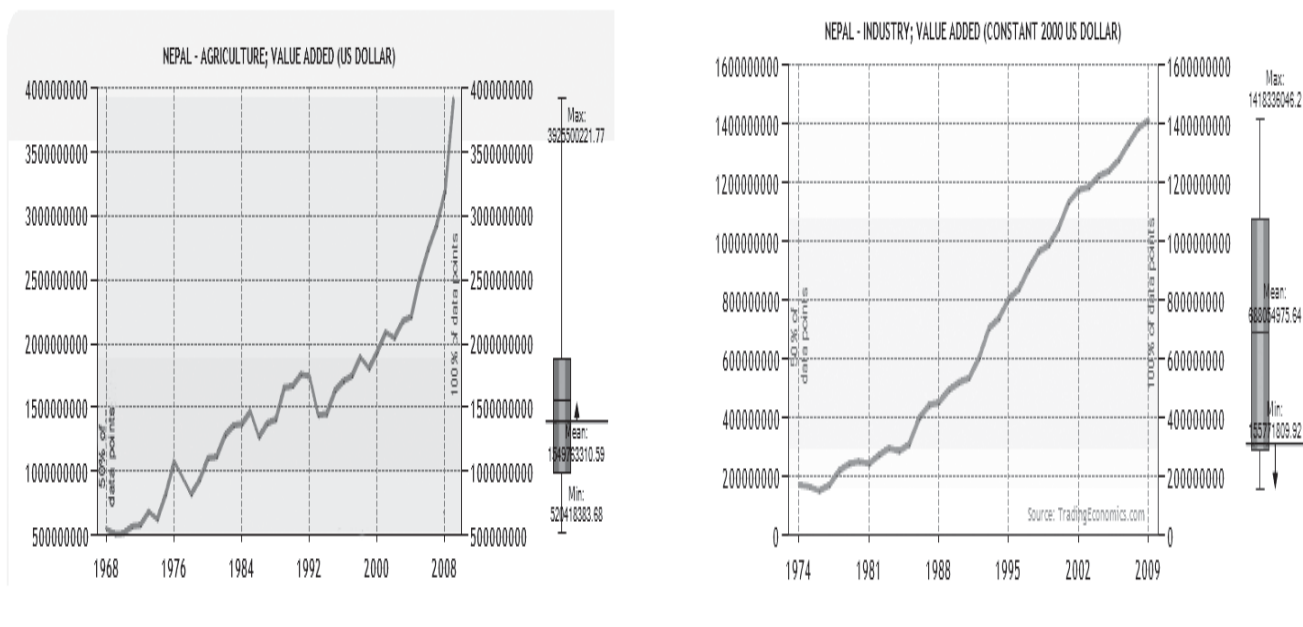
Figure: 1.7

output of the country. Figure 1.7 explores this assumption in the case of Nepal by looking at the industrial and agricultural value added as a percentage of total GDP.

Figure 1.7 shows that the value added by the industrial sector is increasing at an increasing rate. In other words, from 1974-2009, the value added by the industrial sector has been growing at a rapid rate as shown by the steep slope of the curve. The model predicted that the value added by the agriculture should remain constant since the marginal product of labour is close to zero. However, from the figure above we see the opposite. This result is attributed to the improvement in agricultural technology. Over the years, new agriculture production has benefited from effective fertilizers, better irrigation facilities, and the green revolution. Even though the agricultural product has not remained constant, it has not decreased.

Lewis claims that the capitalists reinvest their profits back into the industrial sector. The figure below confirms this prediction. As can be seen from figure 1.8, the industrial sector in Nepal has expanded in the last three decades. In 2001, the value added (percent of GDP) was 21.98 percent compared to 16.17 in 1988 (World Bank, 2009). However, it is to be noted that workers

migrating to urban areas are not primarily employed in the industrial sector as can be seen in figure 1.8. The decline in the value added in the industrial sector has been taken over by the increase in value added in the service sector. Service sector is a part of an economy that specializes in services rather than goods. Education, finance, communications, retail trade, transportation are a few examples of a service sector. Since 1976, the service sector in Nepal has gradually increased accounting for 18 percent of the labour force in 2004 (CIA, 2010). Even with the increase in the service sector, industrial sector has helped to boost the Nepalese economy.

Finally, an important question is left to be answered. Is rural urban migration coupled with higher national savings and an expanding industrial sector, leading to economic development in Nepal? In other words, has this transition resulted in higher standard of living for the Nepalese population? Nepal has certainly seen a GDP growth over the last three decades and mostly because of the expansion in the industrial sector. However it is not clear if the rise in GDP has necessarily transformed into a higher standard of living for the Nepalese people.

Despite the increase in GDP, Nepal remains the poorest country in South Asia with 24 percent living below the poverty line (CIA,

2010). In 2009 the GDP per capita was USD 1,200 compared to the world average of 10,400 USD (CIA, 2010). Nepal still lacks basic infrastructure, reliable financial institutions, access to basic healthcare, and stable government, which have been the key factors for lack of improvement in the quality of life in Nepal. Until these measures are addressed, a higher GDP will not transform into a higher standard of living for average Nepalese.

Conclusion and Summary

Lewis' two sector model explains the growth of a developing county's economy in terms of labour transition between the traditional agricultural sector and a modern industrial sector. A developing economy is primarily based in the agriculture sector. The agriculture sector is characterized by abundance of labour, low wages, and primitive ways of production. On the other hand, the modern industrial sector is defined by higher marginal productivity, a higher wage rates than the agricultural sector and a demand for more workers in the initial period of production.

The modern industrial sector is assumed to use a capital intensive production process. Investment and capital formation in the manufacturing sector are possible over time as profits are reinvested in the capital stock. In the agriculture sector, due to the surplus of unskilled labours, the marginal productivity of labour is assumed to be close to zero. With an incentive of higher wages, industrial sector starts to attract labour from the rural sector and migration begins. As migration continues, agriculture output remains constant and the additional workers increase the profit of the industrial sector. The capitalists will reinvest their profits to improve production technology. As improvement in technology results in higher output, economic growth continues. Lewis' model fits the case in Nepal. Rural workers over the last three decades have been moving to urban areas to seek higher wages. Despite the decrease in the agricultural workers, the output has not decreased. In fact, the output from the agricultural sector has grown over time due to the green revolution. The industrial sector has been expanding at an increasing rate causing higher economic growth in Nepal. Most of the profit generated from the industrial sector has been invested in the private sector generating even higher economic growth. However, unlike Lewis predicted, industrial sector has not been the dominant sector as part of urbanization. In fact, there has been an emergence of a service sector. With the implementation of labour saving technologies in industry, the service sector has been growing rapidly in Nepal.

Additionally, the model did not account for the negative externalities of urbanization in Nepal. Social problems such as high caste disparity, high crime rates, and existence of slums have been persistent in Kathmandu. Also, a majority of workers are unemployed in the industrial sector, unlike the model's predictions. Despite some of the drawbacks of the model, it provides a good framework to illustrate the rural urban migration in Nepal. The model was correct in predicting higher national savings with the expansion of the industrial sector. Nepal has seen a boost in national savings over the last three decades and this can be attributed to increased employment in the industrial sector. The model needs to take into account the consequences of the mass migration, labour saving technology in the industrial sector, and the emergence of the service sector in a developing country.

The two-sector model argues that a developing country will reach a stage where the marginal productivity of labour in the agriculture sector is equal to the marginal productivity of labour in the industrial sector. In reality, Nepal may not be able to reach this equilibrium. However, from the research above we can see that the industrial sector has helped boost the economic growth in Nepal. Now it is up to the policy makers to make sure the surplus of income translates into higher wages for the workers in the agricultural, industrial and the service sector, leading to a higher standard of living for the Nepalese people.

Key Terms: Industrial Sector, Agricultural Sector, Urbanization, Standard of Living.

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Exports and Economic Growth
Indian Scene

P.K. Mishra

A b s t r a c t

Since a long time, rapid growth of real income has been the most important objective of any economy, developed or underdeveloped. There are various approaches to achieve this target of which one strategy is to promote exports of the country. With this backdrop, this paper is an attempt to reinvestigate the dynamics of the relationship between exports and economic growth for India over the period 1970 to 2009. Applying the cointegration and vector error correction estimation techniques, the study provides the evidence of stationarity of time series variables, existence of long-run equilibrium relation and finally, and the rejection of export-led growth hypothesis for India by the Granger causality test.

In this era of open economy, nations are concerned with increasing the quality of life of their citizens. And, the quality of life mainly comes from the macro-economic prosperity. Thus, increasing the Gross Domestic Product is the most important objective of any economy. There are many different approaches to achieve this target of which one possibility is to promote exports. At this juncture, an important issue immediately cracks the minds of economists and researchers that whether export promotion leads to higher economic growth or economic growth promotes export growth. Thus, economists came up with different views at different times and the literature puts forward a debate for researchers and policy makers since last few decades. One school of thought argues in favour of export-led growth hypothesis while the other school advocates for growth-driven export

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hypothesis. Still empirical evidences are there that export promotion leads to economic growth and economic growth leads to export promotion, i.e., the bi-directional causality between exports and economic growth.

The export-led growth hypothesis generally reflects the relationship between exports and economic growth. The proponents of such hypothesis argue that export promotion through policies such as export subsidies or exchange rate depreciation will increase economic growth. The substance of the neo-classical arguments underlying the export-led growth hypothesis is that competition in international markets promotes economies of scale and increases efficiency by concentrating resources in sectors in which the country has a comparative advantage. These positive externalities promote

economic growth (Bhagwati, 1978; Balassa, 1978; Krueger, 1978; Feder, 1982; Krueger, 1990; Vohra, 2001; Ullah *et al* 2009). On the contrary, the argument that economic growth promotes export growth stands on the idea that gains in productivity, gives rise to comparative advantages in certain sectors that lead naturally to export growth. Also, countries with high growth rates and relatively low absorption rates must necessarily export the excess output (Arnade and Vasavada, 1995; Fosu, 1996; Thornton, 1996; Henriques and Sadorsky, 1996; Sharma and Panagiotidis, 2005). In addition, some studies demonstrate that there exists a bi-directional relationship between these variables such that export causes economic growth and economic growth causes export (Dutt and Ghosh, 1994; Thornton, 1997; Shan and Sun, 1998; Khalafalla and Webb, 2001).

It is due to such contradicting evidences regarding the relationship between exports and economic growth, many developing countries are still in dilemma whether to open up their economies to promote international trade or whether they should concentrate on economic activities which will lead to the growth of international trade. A lot of debate has been going on in the world today such as Doha Development Agenda; trade for aid discussion, etc; this is because some researchers and policy makers believe that developing countries can achieve economic growth through free market while others believe that developing countries should protect their industries from imported goods and promote their economic activities which will lead to the economic growth.

Recently the fast growth of China and India is believed to have contributed among other things by the expansion of their export. "The success of China and India largely caused by both the export-led growth and access to technology through globalization" (Stiglitz, 2007). Exports imply access to the global market and permit increased production while trade encourages efficient allocation of resources; and trade contributes to economic growth by generating long-run gains (Easterly, 2007). Thus, India can be an interesting case study of the export and economic growth relationship.

It is with this backdrop, this paper is an attempt to revisit the issue of the relationship between export growth and economic growth in case of India for the period 1970-71 to 2008-09. The rest of the paper is organised as follows: Section II reviews the theoretical as well as empirical literature; Section III discusses the data and methodology; Section IV makes the empirical analysis; and Section V concludes.

Literature Review

The argument concerning the role of exports as one of the main deterministic factors of economic growth is not new. It goes back to the classical economic theories by Adam Smith and David Ricardo, who argued that international trade plays an important role in economic growth and that there are economic gains from specialization.

The arguments of the neo-classical economists are that competition in international markets promotes scale economies and increases efficiency by concentrating resources in sectors in which the country has a comparative advantage. These positive externalities promote economic growth.

These theoretical arguments regarding export - economic growth nexus have been empirically verified by economists and researchers at different times. A number of studies including Jung and Marshall (1985), Chow (1987), Darrat (1987), Hsiao (1987), Bahmani-Oskooee et al (1991), Kugler (1991), Dodaro (1993), Van den Berg and Schmidt (1994), Greenaway and Sapsford (1994), and Islam (1998) had adopted time series analysis for exploring the causal liaison between export growth and output growth. Using the Granger (1969), Sims (1972), and Hsiao (1987) causality procedures, these studies failed to provide a uniform conclusion about the export-led growth hypothesis. However, these time series studies were not free from disparagement. Although standard Granger or Sims tests are only valid if the original time series are not cointegrated, none of these studies checked the cointegrating properties of the time-series variables involved. When time series are cointegrated, inferences based on traditional time-series modelling techniques will be misleading, as pointed out by Granger (1988), this is because traditional causality tests would miss some of the "forecastability" and, hence, reach incorrect conclusions about causality. Moreover, all the studies reviewed above used growth of GDP and that of exports which is akin to first differencing and filters out long-run information. In order to remedy this situation cointegration and error-correction modelling have been recommended to combine the short-term as well as long run information. Bahmani-Oskooee and Alse (1993) took all these issues into account and employed quarterly instead of annual data for the eight countries studied. They found strong empirical support for two-way causality between export growth and GDP growth in eight out of nine countries.

Darrat (1986) worked on four Asian (Hong Kong, South Korea, Singapore, and Taiwan) countries, found no evidence of unidirectional causality from exports to economic growth in all

the four economies. In the case of Taiwan, however, the study detected unidirectional causality from economic growth to export growth.

Kim (1993) has examined the major trends of key macroeconomic variables in South Korea and Chile and related them to export performance. Kim identified exports as a major source of economic growth and provided evidence of the validity of the claim that an open, trade-oriented economy is not only the best guarantee for long–term economic growth, but it also lightens the initial impacts of external shocks. Also, he mentioned that there are factors other than trade which increase economic growth.

Erfani (1999) examined the causal relationship between economic performance and exports over the period of 1965 to 1995 for several developing countries in Asia and Latin America. The result showed the significant positive relationship between export and economic growth. This study also provides the evidence about the hypothesis that exports lead to higher output.

Vohra (2001) showed the relationship between the export and growth in India, Pakistan, the Philippines, Malaysia, and Thailand for 1973 to 1993. The empirical results indicated that when a country has achieved some level of economic development than the exports have a positive and significant impact on economic growth. The study also showed the importance of liberal market policies by pursuing export expansion strategies and by attracting foreign investments.

Subasat (2002) investigated the empirical linkages between exports and economic growth. The analysis suggested the more export oriented countries like middle-income countries grow faster than the relatively less export oriented countries. The study also showed that export promotion does not have any significant impact on economic growth for low and high income countries.

Amavilah (2003) determined the role of exports in economic growth by analyzing Namibia's data from 1968 to 1992. Results explained the general importance of exports, but find no discernible sign of accelerated growth because of exports.

Lin (2003) stated that ten percent increase in exports causes one percent increase in GDP in the 1990s in China on the basis of new proposed estimation method, when both direct and indirect contributions are considered.

Shirazi et al (2004) studied the short run and long run relationship among real export, real import and economic growth on the basis of co-integration and multivariate Granger causality developed by

Toda and Yamamoto (1995) for the period 1960 to 2003. This study showed a long-run relationship among import, export and economic growth, and found unidirectional causality from export to output while did not find any significant causality between import and export.

Thurayia (2004) studied the relationship between exports and economic growth experience in Saudi Arabia and Sudan. Results showed that the growth rate in total exports in Saudi Arabia had an active role in achieving economic growth while it had a weak influence in Sudan. The results of cointegration and error correction tests showed a positive effect of exports on GDP in the short and long term, which confirms the validity of the hypothesis of export-led growth in Saudi Arabia and Sudan.

Mah (2005) studied the long-run causality between export and growth with the help of significance of error correction term, ECt-1. This study also indicated that export expansion is insufficient to explain the patterns of real economic growth.

Tang (2006) stated that there is no long run relationship among export, real Gross Domestic product and imports. This study further shows no long-run and short-run causality between export expansion and economic growth in China on the basis of Granger causality, while economic growth does Granger-cause imports in the short run.

Jordaan (2007) analyzed the causality between exports and GDP of Namibia for the period 1970 to 2005. The hypothesis of growth led by export is tested through Granger causality and cointegration. It tests whether there is unidirectional or bi-directional causality between export and GDP. The results revealed that exports Granger cause GDP and GDP per capita and suggested that the export-led growth strategy through various incentives has a positive influence on growth.

Rangasamy (2008) examines the exports and economic growth relationship for South Africa and the results show that the unidirectional Granger Causality runs from exports to economic growth.

Pazim (2009) tested the validity of export-led growth hypothesis in three countries by using panel data analysis. It is concluded that there is no significant relationship between the size on national income and amount of export for these countries on the basis of one-way random effect model. The panel unit root test shows that the process for both GDP and Export at first difference is not stationary while the panel co-integration test indicates that there is no co-integration relationship between the export and economic growth for these countries.

Ullah *et al* (2009) reinvestigated the export-led-growth hypothesis by time series econometric techniques over the period of 1970 to 2008 for Pakistan. The results reveal that export expansion leads to economic growth.

Elbeydi, Hamuda and Gazda (2010) investigate the relationships between export and economic growth in Libya for the period 1980 to 2007. The findings indicate that the long run bi-directional causality between the exports and income growth exists and the export promotion policy contributes to the economic growth in Libya.

Lee (2010) examines the short-run and long-run dynamic interactions between exports, imports and income for Pakistan within a multivariate framework. It shows that with the use of imports as an additional relevant variable in the empirical model, the researchers can have a better understanding on the effects of exports on economic growth. However, the study does not find the evidence to support import-led growth and export-led growth hypotheses in the long-run. In the short-run, the study finds the evidence to support export-led growth, growth-led exports, import-led growth and growth-led imports hypotheses. This study suggests that exports and imports are important in fuelling the economic growth of Pakistan in the short run.

The export - economic growth nexus issue has been addressed by a number of studies for India. Nandi and Biswas (1991) found evidence of unidirectional causality from export growth to economic growth. This study does not test for stationarity and conducts Sims causality tests on the levels of the income and export variables. Given that the levels of the income and export variables are usually non-stationary, the results are unreliable.

Sharma and Dhakal (1994) offer some evidence of the export-led growth hypothesis for India but the empirical evidence offered by it is unreliable. The study concludes that the income and export series for India are non-stationary using the Phillips Perron test. It tests for causality but does not test for cointegration. However, the correct application of Granger tests requires the identification of a possible cointegrating relationship.

Bhat (1995) re-examines the export - economic growth nexus for India, and finds evidence of bi-directional causality between export growth and economic growth. Xu (1996) confirms rejection of the export–led growth hypothesis for India. Ghatak and Price (1997) conclude that export growth is caused by output growth in India. Dhawan and Biswal (1999) examine the period 1961 to 1993 and find that growth in GDP causes growth in exports while causality from exports to GDP appears to be a short-run phenomenon.

Nidugala (2000) finds that exports had a crucial role in influencing GDP growth in the 1980s. Anwar and Sampath (2000) examine the export-led growth hypothesis for 97 countries (including India, Pakistan and Sri Lanka) for the period 1960 to 1992. They find evidence of unidirectional causality in the case of Pakistan and Sri Lanka, and no causality in the case of India. However, Kemal *et al* (2002) find a positive association between exports and economic growth for India as well as for other economies of South Asia.

In case of India, Chandra (2000, 2002) found bi-directional causal relationship between export growth and GDP growth which is short-run causal relation, as cointegration between export growth and GDP growth was not found.

Sharma and Panagiotidis (2004) test the export-led growth hypothesis for the case of India and the results strengthen the arguments against the export-led growth hypothesis for the case of India.

Raju and Kurien (2005) analyze the relationship between exports and economic growth in India over the pre-liberalization period 1960-1992 and find strong support for uni-directional causality from exports to economic growth using Granger causality regressions based on stationary variables, with and without an error-correction term.

Dash (2009) analyzes the causal relationship between export growth and economic growth in India for post-liberalization period 1992-2007 and the results indicate that there exists a long-term relationship between output and exports, and it is unidirectional, running from exports to output growth.

It is therefore clear from the above literature review that the evidences regarding export economic growth nexus is rather mixed. A number of studies support the export-led economic growth while others do not. Furthermore, studies on this issue in the context of India are only a few and again provide mixed evidences. Also, the literature lacks studies including the period of recent global financial crisis. Therefore, this paper is an attempt to re-investigate the exports – economic growth nexus for India considering the period of recent global financial downsizing. This study shall provide the useful information helpful to policy makers. It can serve as a reference to subsequent research works on the issue 'exports – economic growth nexus' in the context of India.

Data and Methodology

The objective of this paper is to investigate the dynamics of the relationship between exports and economic growth in India sing

the annual data for the period 1970-71 to 2008-09. In this study the variables are total Exports by India (EX) and Economic Growth (EG). Total Exports by India is the sum of oil and non-oil exports expressed in crore of rupees. And, the real Gross Domestic Product (GDP) is used as the proxy for economic growth in India. All necessary data for the sample period are obtained from the *Handbook of Statistics on Indian Economy* published by Reserve Bank of India. All the variables are taken in their natural logarithms to avoid the problems of heteroscedasticity.

The estimation methodology employed in this study is the cointegration and error correction modeling technique. The entire estimation procedure consists of three steps: first, unit root test; second, cointegration test; third, the error correction estimation. The unit root test captures the stationarity of data. The cointegration test examines whether a long-run equilibrium relation exists between the considered time series. Once the cointegration is confirmed to exist between variables, then the third step requires the construction of error correction mechanism to model dynamic relationship. The purpose of the error correction model is to indicate the speed of adjustment from the short-run equilibrium to the long-run equilibrium state.

Empirical Analysis

At the outset, the Pearson's correlation coefficient between exports and real GDP has been calculated over the sample period and its significance has been tested by the t-test. The value of Pearson's correlation coefficient (r) between these two time series over the sample period is 0.99. It shows that exports and real GDP are positively related in India and that to a very high degree of correlation is evident between these two variables. To test whether this value of 'r' shows a significant relationship between two time series, student's t-test has been used. The null hypothesis of the test is r = 0 against the alternative of r $\neq$ 0. Since the t-statistic at 37 degrees of freedom is 42.68 and the critical value of 't' at five percent level of significance is less than it, the null hypothesis is rejected. So, it can be said that the correlation between exports and real GDP is statistically significant. Correlation, however, does not say anything about long-run relationship and thus, leaves unsettled the debate concerning the long-run relationship between exports and real GDP.

Before proceeding with the empirical analysis, it is required to determine the order of integration for each of the two variables

Table 1: Results of Unit Root Test

Variables in their First Differences with intercept and Linear Trend	ADF Statistic	Critical Values	Decision
LEX_1	-4.94	At 1% : -4.22 At 5% : -3.53 At 10% : -3.20	Reject Null hypothesis of no unit root
$LGDP_1$	-4.51	At 1% : -4.22 At 5% : -3.53 At 10% : -3.20	Reject Null hypothesis of no unit root

used in the analysis. The Augmented Dickey-Fuller unit root test has been used for this purpose. And, the results of such test are reported in Table -1.

It is clear from the Table-1 that the null hypothesis of no unit roots for both the time series are rejected at their first differences since the ADF test statistic values are less than the critical values at 10 percent, five percent and one percent levels of significances. Thus, the variables are stationary and integrated of same order, i.e., I(1).

In the next step, the cointegration between the stationary variables has been tested by the Johansen's Trace and Maximum Eigenvalue tests. The results of these tests are shown in Table-2.

The Trace test indicates the existence of one cointegrating equations at five percent level of significance. And, the maximum eigenvalue test makes the confirmation of this result. Thus, the two variables of the study have long-run equilibrium relationship between them. But in the short-run there may be deviations from this equilibrium and we have to verify whether such

Table 2: Results of Cointegration Test

Hypothesized Number of Cointegrating Equations	Eigen Value	Trace Statistics	Critical Value at 5% (p-value)	Maximum Eigen statistics	Critical Value at 5%(p-value)
None*	0.432	26.465	20.261(0.006)	20.421	15.892(0.009)
At Most 1	0.154	6.044	9.164(0.187)	6.044	9.164(0.187)

* denotes rejection of the hypothesis at the 0.05 level

disequilibrium converges to the long-run equilibrium or not. And, Vector Error Correction Model can be used to generate this short-run dynamics. Error correction mechanism provides a means whereby a proportion of the disequilibrium is corrected in the next period. Thus, error correction mechanism is a means to reconcile the short-run and long-run behaviour.

The estimation of a Vector Error Correction Model (VECM) requires selection of an appropriate lag length. The number of lags in the model has been determined according to Schwarz Information Criterion (SIC). The lag length that minimizes the SIC is 1. Then an error correction model with the computed t-values of the regression coefficients is estimated and the results are reported in Table-3.

Table 3: Estimates for VECM Regression

$$\Delta LEX_t = 0.081 - 0.167 EC^1_{t-1} + 0.205 \Delta LEX_{t-1} + 0.411 \Delta LGNP_{t-1}$$

$$\Delta LGDP_t = 0.082 - 0.0143 EC^2_{t-1} + 0.103 \Delta LEX_{t-1} + 0.216 \Delta LGDP_{t-1}$$

Independent Variable	ΔLEX_t	$\Delta LGDP_t$
Constant [t-statistic] (p-value)	0.081 [1.591] (0.120)	0.082 [4.014] (0.00027)
EC_{t-1} [t-statistic] (p-value)	$EC^1_{t-1} = -0.167$ [-1.836] (0.074)	$EC^2_{t-1} = 0.0143$ [-0.393] (0.696)
ΔLEX_{t-1} [t-statistic] (p-value)	0.205 [1.242] (0.222)	0.103 [1.557] (0.127)
$\Delta LGDP_{t-1}$ [t-statistic] (p-value)	0.411 [1.010] (0.319)	0.216 [1.325] (0.193)

The estimated coefficient of error-correction term (EC^1_{t-1}) in the LEX equation is statistically significant and has a negative sign, which confirms that there is not only any problem in the long-run equilibrium relation between the independent and dependent variables in 10 percent level of significance, but its relative value (-0.167) for India shows the rate of convergence to the equilibrium state per year. Precisely, the speed of adjustment of any disequilibrium towards a long-run equilibrium is that about 16.7 percent of the disequilibrium in exports is corrected each year. Furthermore, the negative and statistically significant value of error correction coefficient indicates the existence of a long-run causality between the variables of the study. And, this causality is unidirectional in our model being running from the real GDP to exports. In other words, the changes in exports can be explained by real GDP.

The existence of Cointegration implies the existence of Granger causality at least in one direction (Granger, 1988). The long-run causality test from the VECM indicates that causality runs from real GDP to exports, since the coefficient of the error term in LEX equation is statistically significant and negative based on standard t-test which means that the error term(EC^1_{t-1}) contributes in explaining the changes in exports. However, the coefficient of the error term in the GDP equation is negative, but statistically insignificant which means that the error term (EC^2_{t-1}) does not contribute in explaining the changes in real GDP. Therefore, there is unidirectional causality running from the real GDP to the exports.

The coefficients of the first difference of LEX and LGDP lagged one period in LEX equation in Table-3 are statistically insignificant which indicate the absence of short-run causality from real GDP to exports based on VECM estimates. In order to confirm the result of the short-run causality between the ΔLEX and the ΔLGDP based on VECM estimates, a standard Granger causality test has been performed based on F-statistics.

Table 4: Results of Granger Causality Test

Null Hypothesis	F-Statistic	Probability	Decision
ΔLEX does not Granger Cause ΔLGDP	2.522	0.096	Accept
ΔLGDP does not Granger Cause ΔLEX	1.324	0.280	Accept

(Number of lags = 2)

The result in Table-4 indicates real GDP does not Granger because the exports at the five percent level of significance. This result supports the previous result obtained from VECM that there is no short-run causality at the five percent level of significance. Based on this causality tests, changes in the real GDP cause changes in exports in the long-run, but not in the short run.

Summary and Conclusion

In this paper, the relationship between exports and economic growth in a developing country like India has been investigated using popular time series methodologies. The data properties are analyzed to determine the stationarity of time series using the Augmented Dickey-Fuller unit root test which indicates that the two series are I(1). The results of the Cointegration test based on Johansen's procedure indicate the existence of the Cointegration between exports and real GDP. Therefore, the two variables have a long-run equilibrium relationship exists, although they may be in disequilibrium in the short-run. The vector error correction model based on VAR indicates that about 16.7 percent of disequilibrium is corrected each year. In addition, the negative and significant error correction term in LEX equation supports the existence of a long-run equilibrium relationship between real GDP and exports. Furthermore, the estimates of the VECM indicate the existence of a unidirectional causality running from real GDP to exports. The Granger causality test indicates that there is a causal relationship running from GDP to exports in the long-run, but not in the short-run.

The results of the empirical analysis lead to the conclusion that both exports and economic growth are related to past deviations (error correction terms) from the empirical long-run relationship. It implies that all variables in the system have a tendency to quickly revert back to their equilibrium relationship. This means

that any increase in real GDP would have a positive impact on the growth of exports in the long-run. In other words, India provides the evidence of growth-driven exports over the sample period. This finding, thus rejects the export-led growth hypothesis in India and corroborates the studies of Xu (1996), Ghatak and Price (1997), and Dhawan and Biswal (1999).

Keywords: Export-led Growth Hypothesis, India, GDP, Granger Causality, Error Correction Model.

JEL Classification Code: C22, C32, F43.

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Leveraging the Power of Differences
Workforce Diversity

Ajaya and Prakash Pinto

Abstract

It is a fact that the increasing global economic integration coupled with liberalisation has spelled myriad challenges and opportunities for business corporations. This has enticed many forward looking organisations to spread their wings across the globe and usher in a revolution in workplace practices. The initiative was, indeed, viewed as both business necessity and opportunity. Organisations worldwide began to beckon talented human resources regardless of their country and background. The need for making organisations culturally sensitive and internationally focused to seize the global opportunities was increasingly realised. This paper examines the various dimensions of diversity initiatives with global perspective.

There is an old saying that "if you keep looking at the world through the same window, you will keep seeing only what you have already seen before." The same holds true for thinking and opinion. If a person only listens to the same people or the same kind of people to whom he/she has always listened, then there is a limited possibility for new or revolutionary thinking or action. Organisational synergy is dependent on both inclusion and diversity. It is beyond doubt that without these elements, an organisation becomes stagnant, insular, and defensive (Boyd). Added to this, the famous work entitled, "A Peacock in the Land of Penguins" illustrates the

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vitality of diversity, stating that birds of the same feather when assemble together, become poorer in their outlook. It is perhaps due to these reasons, today, organisations are becoming increasingly diverse across the globe. It is true that diversity management is not an easy affair to embrace instantly. Nevertheless, many organisations across the globe are progressively turning to be diversity-friendly. The pressing reason for the changing organisational demography is the benefits reaped by the organisations practising workforce diversity. As a result, today, workforce diversity has become a hot-button issue and many of the organisations are using workforce diversity as a strategic HR tool to gain competitive advantage in the global market place.

Diversity: A Conceptual Framework

Diversity is an increasingly important factor in organisational life as organisations worldwide are more diverse in terms of the gender, race, ethnicity, age, national origin and other personal characteristics of their members (Shaw and Barrett-Power, 1998). Today, the workforce comprises people who are different and share different attitudes, needs, desires, values and work behaviours (Deluca and McDowell, 1992; Morrison, 1992; Rosen and Lovelace, 1991). Thus, diversity, may defined as acknowledging, understanding, accepting, valuing, and celebrating differences among people with respect to age, class, ethnicity, gender, physical and mental ability, race, sexual orientation, spiritual practice, and public assistance status (Esty, et al., 1995). Put simply, diversity refers to the co-existence of employees from various socio-cultural backgrounds within the company (Wentling and Palma- Rivas, 2000).

It is indisputable fact that diversity requires a type of organisational culture in which each employee can pursue his or her career aspirations without being inhibited by gender, race, nationality, religion, or other factors that are irrelevant to performance (Bryan, 1999). Diversity brings with it the heterogeneity that needs to be nurtured, cultivated and appreciated as means of increasing organisational effectiveness in this competitive world (Henry and Evans 2007).

Dimensions of Workforce Diversity

The term 'workforce diversity' in its broadest sense encompasses many dimensions. The researchers have classified such dimensions into many categories. According to the study (Sponsored by U.S. Department of Commerce and Vice President Al Gore's National Partnership for Reinventing Government Benchmarking Study) entitled, 'Best Practices in Achieving Workforce Diversity,' the diversity includes the entire spectrum of primary dimensions of an individual, including Race, Ethnicity, Gender, Age, Religion, Disability, and Sexual orientation (referred to by the Diversity Task Force as "REGARDS"). Secondary dimensions commonly include: communication style, work style, organisational role/level, economic status, and geographic origin. By the same token, Anderson and Metcalf (2003) have described workforce diversity using the following dimensions:

a. Social Category Diversity: It captures the differences in demographic characteristics, such as age and race.

b. Informational Diversity: It refers to diversity of background such as knowledge, education, experience, tenure and functional background.

c. Value Diversity: It includes differences in personality and attitudes.

Diversity Management: The Conceptual Framework

Diversity management may be understood as the systematic and planned commitment by organisations to recruit, retain, reward, and promote a heterogeneous mix of employees (Thomas, 1991; Ivancevich and Gilbert, 2000). It is directed at enabling the diverse workforce to achieve its full potential in a work environment that is equitable and where no group has any superficial advantages (Torres and Bruxelles, 1992). Furthermore, managing diversity is based on the assumption that diverse groups will create new ways of working together and that morale, profit and productivity will increase. It tries to build specific skills and to create policies that derive the best from each employee (Sadri Golnaz and Tran Hoa 2002).

Diversity into Spotlight: The Push Factors

The 1990s saw the development of a new trend in the form of workforce diversity mainly because of the liberalisation and globalisation of markets (Henry and Evans, 2007). As the businesses are growing and the world is moving toward a concept of global village, the competition among the organisations and industries is rapidly increasing. Also, due to the global economy, the distance among people, different nations, races, sexes etc. are diminishing. In this scenario of high interaction, the existence of any business/economy is dominantly dependent upon not only the optimal utilisation of current available resources, but also on innovation and diversity (Sabeen, 2007). Significant changes in society and in the markets are responsible for the growing workforce diversity. The globalisation process compels organisations all over the world to deal with more international customers and suppliers (Cox and Blake, 1991; Milliken and Martins, 1996). Improvements in transportation and communication, and the change in lifestyles contribute to the growing mobility of people (Kossek and Lobel, 1996). The increased mobility and interaction of people from diverse backgrounds as a result of improved economic and political systems and the recognition of human rights by all nations has put most organisations under pressure to embrace diversity at the work place (Henry and Evans, 2007). The participation of social

groups traditionally seen as minorities or disadvantaged groups in the workplace has increased in numbers, qualifications, and influence (Carr-Ruffino, 1996). Women, older people, individuals with disabilities, and people with different ethnic backgrounds, lifestyles, religious faiths, and sexual orientations, are becoming regular players in the labour market (Dass and Parker, 1996). As the economies are shifting from manufacturing to service economies, diversity issues will gain importance because in a service economy effective interactions and communications between people are essential to business success (Wentling and Palma-Rivas, 2000).

Moreover, in the business environment of the new millennium, the time available for innovation and creativity in all aspects of the enterprise is shorter than ever before. No longer may a business spend long periods of time that it once could to conceive, investigate, nurture, and develop new ideas. Creativity and innovation must now occur as a part of the normal functioning of the enterprise. Homogeneous environments and social groups rarely produce new thinking. Paradigms and social cohesion are overwhelming inhibitors to differences in thought and perspective. It is exactly that diversity of perspective and experience-which is only possible from people with diverse backgrounds, paradigms, and social experience-that can enable individuals to interact in a way that will create new ideas (Boyd).

Changing Workforce Diversity: The Global Scenario

The United States has historically been seen as a "melting pot" of people from many different countries, cultures, and backgrounds. The Bureau of Labour Statistics projects that by 2015, the U.S. labour force will include 21 million black, 11 million Asian, and 24 million Hispanic individuals. It also indicates that by the year 2050, Hispanics will make up 24 percent of the U.S. labour force, blacks 14 percent and Asians 11 percent (See Lepak and Gowan, 2009 p. 40). Females are expected to increase their percentage in the workforce by 15.1 percent, so that more than 62 percent of the women in the United States are expected to be working in 2010 (See Moorhead and Griffin, 2009 p. 53). They are expected to make up 47 percent of the U.S. labour force in 2016 (See Lepak and Gowan, 2009 p. 40). The graying of the U.S. workforce is another source of diversity. People over age sixty-five will comprise 13 percent of the population in 2010 and 20 percent of the population by 2030 (See Nelson and Quick, 2007 p. 48). In contrast, the growth rate of individuals in younger age group is markedly smaller and expected to decrease by seven percent by 2016 (See Lepak and Gowan, 2009 p. 38).

Issues of workforce diversity are not prevalent just in United States. In Canada minorities are the fastest-growing segment of the population and the workforce. In addition, women make up two-thirds of the growth in the Canadian workforce, increasing from 35 percent in the 1970s to more than 50 percent in 2005. Many German factories now have a very diverse workforce that includes many workers from Turkey. Several Central Europe countries like Poland, Hungary and the Czech Republic have experienced a steady influx of workers from Ukraine, Afghanistan, Sri Lanka, China and Somalia (See Moorhead and Griffin, 2009 p. 53). Thus, workforce demography is undergoing a drastic change across the globe.

Valuing Workforce Diversity: Organisational Advantages

Workforce diversity benefits the organisations in myriad ways amidst spate of challenges. In fact, organisations have made a business case for diversity, arguing that diversification of the workplace is a necessity for increasing workplace innovation and creativity (Cox and Blake, 1991; McLeod, Lobel, and Cox, 1996). As globalisation is increasing, diversity will help organisations to enter the international arena (Cascio, 1998). The underlying idea (argument) appears to be that the firm will better be able to serve increasingly diverse customers, meet increasingly severe and diverse competitors, and deal with increasingly complex business and management problems by actively seeking and managing a diverse workforce. Organisations with a diverse workforce can provide superior services because they can better understand customers' needs (Wentling and Palma-Rivas, 2000). For instance, hiring women, minorities, disabled, etc. will help organisations to tap these niche markets (Mueller, 1998) and diversified market segments (Henry and Evans, 2007). It is believed that employers who hire minorities may increase their appeal to these markets (Hays-Thomas, 2004). Organisations that are open for women increase the pool of talented applicants, leading them to acquire and retain competitive workforce (Sabeen 2007). In a study, black participants were more attracted to organisations whose recruitment advertisements depicted a balance between white and black employees, but only when a black employee was portrayed in a supervisory role (Avery, 2003). As all the segments of society have a stake in the development and prosperity of society as a whole, creating and managing a diverse workforce should be seen as a social and moral imperative (Henry and Evans, 2007). Diverse teams make it possible to enhance flexibility (Henry and Evans, 2007) and rapid response and adaptation to change (Adler, 1997; Jackson et al., 1992).

Many business leaders are now beginning to believe that diversity has important bottom-line benefits. Diversity in the workforce can be a competitive advantage because different viewpoints can facilitate unique and creative approaches to problem-solving, thereby increasing creativity and innovation, which in turn leads to better organisational performance (Allen et al., 2004). Potential benefits of this diversity include better decision making, higher creativity and innovation, greater success in marketing to foreign and domestic ethnic minority communities, better distribution of economic opportunity (Cox, 1991; Cox and Blake, 1991), improved bottom line, competitive advantage, recruiting the best candidates, employee satisfaction and loyalty, and superior business performance (McCuiston and Wooldridge, 2004). Researchers have suggested that effective diversity management can lower organisational costs in terms of grievances, lawsuits, employee turnover, and ineffectiveness due to poor communication and dissatisfaction (Cox, 1997).

Thus, the management of workforce diversity as a strategy to increase organisational effectiveness cannot be underscored, especially with current changes sweeping across the globe. It is argued that organisations that value diversity will definitely cultivate success and have a future in this dynamic global labour market (Henry and Evans, 2007). It is time for a systematic application of diversity concepts to the business of the organisation. As one benchmarking partner (in the study Sponsored by U.S. Department of Commerce and Vice President Al Gore's National Partnership for Reinventing Government Benchmarking Study) stated, "We view diversity as something more than a moral imperative or a business necessity- we see it as a business opportunity."

Managing Diversity: Organisational Challenges

Managing workforce diversity is one of the most difficult and pressing challenges of modern organisations (Henry and Evans 2007). This is because managing diversity is more than simply acknowledging differences in people. It involves recognizing the value of differences, combating discrimination, and promoting inclusiveness. Managers may also be challenged with losses in personnel and work productivity due to prejudice and discrimination and complaints and legal actions against the organisation (Devoe, 1999). Even though there are many advantages to diversity, it does not come without some difficulties. Business leaders need to maintain a balance between the needs of diverse groups and business objectives. Likewise, leaders need to

be aware of the implications of business decisions, policies, and practices in regards to diversity and the legal system (McCuiston and Wooldridge, 2004). With more women entering the workforce, organisations need to make policies and accommodations to meet the needs of these individuals. Similarly, organisations need to take action against sexual harassment, discrimination, and unequal treatment that exists in the work environment (Elmuti, 2001). In the current workforce, the leaders may have employees from four generations consisting of seniors, Baby Boomers, and individuals from Generation X and Y. With wide range of ages, there are varying lifestyles, work styles, individual goals and perspectives, and demands. The diversity of ages offers challenges to building trust and commitment because everyone will be coming with different points of view (McCuiston and Wooldridge, 2004). It is also not uncommon that many people feel threatened by working with people of a different age, sex, or culture.

Another challenge is, the diversity in the workplace may also lead to an increase in conflicts (Henry and Evans, 2007). "Diversity itself isn't a problem-our differences have always been there; they're what make us unique. The problems lie in our attitude toward diversity" (duPont, 1997, p.48). Negative attitudes and behaviors can be barriers to organisational diversity because they can harm working relationships and damage morale and work productivity (Esty, et al., 1995). Further, there is an increase in the cost of training. This increase comes from costs associated with seminars, programmes and lectures given to promote diversity in the corporation. However, Wolburg (2007) observed that despite these challenges, it is now necessary for organisations to effectively manage diversity if they want to remain competitive and retain employees.

Managing Diversity: Combating Challenges

Managing diversity is about more than equal employment opportunity and affirmative action (Losyk, 1996). The organisation should create such a working environment as will increase the motivation, satisfaction, and commitment of diverse people (Henry and Evans). Managers must understand their firm's culture first and then implement diversity strategies according to that culture (Hayes, 1999). Training and development programmes will improve the skills in dealing with the day to day diversity dilemmas (Henry and Evans, 2007). The rationale for diversity training programmes is often misunderstood at all levels. So it is important to first communicate what diversity is and what the organisation hopes to achieve by managing it more effectively (Henry and Evans, 2007).

Another vital requirement when dealing with diversity is promoting a "safe" place for associates to communicate (Koonce, 2001). Social gatherings and business meetings, where every member must listen and have the chance to speak, are good ways to create dialogues. Managers should implement policies such as mentoring programmes to provide associates access to information and opportunities. The mentor should be able to advise employees on the whole concept of workforce diversity and the reasons why diversity should be managed in the workplace (Henry and Evans, 2007). Also, associates should never be denied necessary constructive, critical feedback for learning about mistakes and successes (Green et al, 2008). Above all, companies can succeed at diversity if the initiative to create, manage and value the diverse workforce has the full support of the top management (Hayes, 1999; Jackson et al., 1992). The organisation should link concerns for diversity to human resource management decisions around recruitment, selection, placement, succession planning, performance management, and rewards (Cascio, 1998).

Workforce Diversity and Organisational Excellence: Empirical Evidences

In today's fast-paced work environment a successful organisation is one where diversity is the norm and not the exception. It is the approach to diversity, not the diversity itself which determines the actual positive and negative outcomes (Henry and Evans, 2007). Emerging literature suggests that culturally diverse organisations outperform their more homogeneous counterparts (Cox 1994; Dreachslin 1996; Richard 2000). According to one study, culturally diverse groups relative to homogeneous groups are more effective both in the interaction process and job performance; these benefits occur after a diverse group has been together for a period of time (Watson et al., 1993). In a survey conducted by the Society for Human Resource Management (SHRM) in 2001 it is found that human resource professionals from Fortune 1000 companies believed diversity initiatives benefit a companies' bottom line. In terms of the impact diversity initiatives have on issues related to the bottom line, professionals believed the top five positive impacts were: improving corporate culture, helping recruit new employees, improving relationships with clients, higher retention rates, and decreasing complaints and legal action. In the SHRM study, 91 percent of the respondents believed diversity initiatives assist the organisation in keeping a competitive advantage through improving employee morale and corporate culture (McCuiston and Wooldridge, 2004).

Advocates of diversity management argue that an inclusive diversity climate increases the performance and productivity level of employees through increased job satisfaction and commitment (Morrison 1992). They also argue that diversity fosters adaptability to environmental change and organisational flexibility and provides a competitive edge by doing so (Cox 1993, Cox and Blake 1991, Fernandez 1991). Diversity contributes to increased market share because it enhances an organisation's ability 'to deal more sensitively with multicultural domestic and foreign customers, thereby increasing customer satisfaction, keeping and gaining market share' (Bhadury et al 2000). In his research on managing diversity at IBM, Thomas (2004) exemplifies the benefits of responding to customer diversity. At IBM, one of the positive business outcomes of successful diversity management has been the increase in revenue from $10 million in 1998 to $300 million in 2001, just through partnerships with a more diverse group of vendors (Thomas, 2004). Similarly, at top management level, several studies indicate that teams composed of diverse members outperform homogeneous teams and have more capacity for problem-solving and decision-making (Bantel and Jackson 1989, Hambrick et al 1996, Smith et al 1994).

McEnrue (1993) found that the recruitment expenditure of organisations that value diversity is 40 percent less than that of those that do not and that they suffer less from high costs of labour turnover, absenteeism and discrimination lawsuits (Fernandez 1991, Cox 1993, Morrison 1992). There's also evidence that workforce diversity improves organisational effectiveness through increased organisational and individual creativity and innovation, and improves decision-making and problem-solving by providing work teams with different and diverse perspectives (Bhadury et al 2000, Cox 1993, Fernandez 1991, Cordero et al 1996, Cox and Blake 1991, Kirchmeyer and McLellan 1991, Hoffman 1978). Thus, companies need to focus on diversity and look for ways to become totally inclusive organisations because diversity has the potential of yielding greater productivity and competitive advantages (Green et al 2008).

Workforce Diversity: Indian Perspective

Being one of the oldest civilizations in the world, the concept of diversity in India has been in existence since ages. It is a large democratic country comprising 30 states and 6 union territories. The cultural diversity is the hallmark of Indian society. The population comprises six main religious groups: Hindus, Muslims, Sikhs, Christians, Jains and Buddhists. The country has 179

languages and 544 dialects. The constitution recognises sixteen languages including Hindi and English that are the two official languages. India has one of the largest English speaking populations in the Asia-Pacific region (Budhwar, 2003).

The constitution of India has envisaged a strong legal foundation for diverse workforce in organisations. Article 16 of the Indian constitution offers equality of opportunity for employment to citizens irrespective of religion, race, caste, sex, descent or place of birth. Article 15 provides for prohibition of discrimination on grounds of religion, race, caste, sex or place of birth. An article 19 of Indian constitution offers the privilege for movement across the country and carry out business or profession of one's choice. Directive principles of state policy provide reservation for weaker and deprived sections of the society like scheduled caste, scheduled tribe, other backward caste, women etc. So far as people with disabilities are concerned, Parliament has passed a legislation titled: The Persons with Disabilities (Equal Opportunities, Protection of Rights and Full Participation) Act 1995. This law requires every appropriate government to reserve not less than three percent job vacancies for persons or class of persons with disability (Woodard and Saini, 2006; Sia and Bhardwaj, 2003).

The Indian government has increased the retirement age of employees from 60 to 65 years. Some private sector organisations retain as well as hire older employees for their valuable experience. Women, minorities and deprived sections of the society are also entering the organisations. However, with the rise in literacy levels and betterment of the position of women due to economic and social development, the position of women in many spheres has been becoming better. For example, women are playing a significant role in the expansion of the Indian software industry, where they constitute 45 percent of the high-tech workforce (Budhwar et al, 2005). Similar trends can be noticed in education sector and the BPO (Business Process Outsourcing) industry where women are employed in sizeable numbers. More than 60 percent of the employees in Pepsi and ICICI are women (Woodard and Saini, 2006). In India, the diversity is more prevalent in urban centers as most of the medium and large organisations are located near urban areas (Sia and Bhardwaj, 2003).

India is one of the countries which have been the beneficiary of globalisation process. This is evident in the considerable rise in its gross domestic product, foreign direct investment, share in world trade, and the contribution of service sector to the economy. As of today, a large number of MNCs have set up their operations in

India. This is intensifying the investment into building the concept of "global manager" and thus will lead to practising diversity management more consciously. The Indian software giants like Infosys, TCS and Wipro have already embraced the challenge of building a global workforce. Since Indian human capital is known to be of high-caliber, Indian companies have to eventually realise the importance of investing in diversity management and thus go beyond legal compliance (Woodard and Saini, 2006).

Diversity Management: The Best Corporate Practices

The role that diversity plays in the workplace has increased over time as more companies adopt diversity management strategies in an effort to increase performance or attract new employees (Hays-Thomas, 2004). Organisations have made their commitment to diversity evident in their business practices, marketing, and selection of diverse employees. The world's increasing globalization requires more interaction among people from diverse cultures, beliefs, and backgrounds than ever before. People no longer live and work in an insular marketplace; they are now part of a worldwide economy with competition coming from nearly every continent. For this reason, profit and non-profit organisations need diversity to become more creative and open to change. Maximizing and capitalizing on workplace diversity has become an important issue for management today (Green et al 2008).

Ability Diversity

Individual with disabilities are an under utilized human resources. Many organisations, today, are hiring people with disabilities and provide them opportunities to unleash their talent. Pizza Hut employs 3000 workers with disabilities and the turnover rate for Pizza Hut workers disability is only one-fifth of the normal turnover rate (See Nelson and Quick, 2007 p. 49). McDonald's created McJOBS a programme that has trained and hired more than 9000 mentally and physically challenged individuals since 1981. McJOBS is a corporate plan to recruit, train and retain individuals with disabilities. Its participants include workers with visual, hearing or orthopedic impairments, learning disabilities and mental retardation (See Nelson and Quick, 2007 p. 49). Cisco system, Microsoft, and IBM regularly recruits disabled individuals (See Lepak and Gowan, 2009 p.170). Infosys actively seeks to hire and train persons with disabilities. In 2006 and 2007, Infosys BPO received the Helen Keller award for the best employer from the National Centre for Promotion of Employment for Disabled People (NCPEDP) (www.infosys.com).

Age Diversity

Research indicates that older employees are more satisfied with their jobs, are more committed to the organisation and possess more internal work motivation than their younger cohorts. Research also indicates that direct experience with older worker reduces younger workers' negative beliefs (See Nelson and Quick, 2007 p. 49). Days Inn and Home Depot have found that recruiting older workers is a win-win strategy (See Lepak and Gowan, 2009 p.169-70). Volkswagen of America has taken number of steps toward becoming an "age-friendly" employer. AARP (American Association of Retired Persons) has ranked it as one of the best employers for older workers. Nearly one-quarter of Volkswagen's US workforce is over the age of 50. It offers financial assistance for fitness expenses, counseling for work/family issues, and flexible schedule for older workers (See Lepak and Gowan, 2009 p. 137). Baptist Health South Florida, a health care provider is also attracting older workers. Beyond making jobs attractive, Baptist is also striving to make jobs more feasible for older workers. Two of Baptist's recruiters spend roughly one-fourth of their time helping older workers find jobs within the company that are less physically demanding (See Lepak and Gowan, 2009 p.39).

Gender Diversity

Three of the best companies in terms of their advancement and development of woman are Motorola, Deloitte, and Touche and Bank of Montreal (See Nelson and Quick, 2007 p. 47). Avon Company, a global leader in beauty-products market bills itself as the "Company for Women." It has more women in the top managerial positions than any other Fortune 500 company-more than 86 percent. About half of the directors on the Board are female (See Lepak and Gowan, 2009 p.171). The ICICI Bank, the largest private sector bank in India has been providing equal opportunities to its female professionals and today a large percentage of top and senior executives in the company are female including its CEO (Agrawal, 2010). Infosys has employees from over 70 countries and women constitute more than 32 percent of their workforce. Infosys Women Inclusivity Network (IWIN) promotes a gender-sensitive work environment and it recognizes the unique aspirations and needs of women (www.infosys.com).

Minority Diversity

American Express Company and Merrill Lynch and Company use African-American employees to hold workshops and networking receptions in venues such as black museums to attract black investors. Within two years of launching the programme 68 percent of AmEx new business has come from black clients (See Mejia et al p.128). Lucent Technologies, Marriott International, Federal Express, Xerox, Sun Microsystems, Colgate Palmolive, Merck and Du Pont have at least one minority member on their board of directors and close to one-fifth of officials and managers who are minority group members (See Mejia et al p.128-29).

Table-1: Top Company's List For 2010

Rank	Name of Company	Rank	Name of Company
1	Sodexo	26	Cummins
2	Johnson & Johnson	27	Hsbc - North America
3	At&T	28	Monsanto Co.
4	Kaiser Permanente	29	General Mills
5	Ernst & Young	30	Aetna
6	Pricewaterhousecoopers	31	Capital One
7	Marriott International	32	Prudential Financial
8	Ibm Corp.	33	The Walt Disney Co.
9	Bank Of America	34	Jpmorgan Chase
10	Abbott	35	Kraft Foods
11	Verizon Communications	36	Toyota Motor North America
12	American Express Co.	37	Cisco Systems
13	Merck & Co.	38	Blue Cross And Blue Shield of Florida

14	Colgate-Palmolive	39	Time Warner
15	Kpmg	40	Target Corp.
16	Novartis Pharmaceuticals Corp.	41	Sc Johnson
17	The Coca-Cola Co.	42	Metlife
18	Procter & Gamble	43	Wells Fargo & Co.
19	Starwood Hotels & Resorts Worldwide	44	Ford Motor Co.
20	Health Care Service Corp.	45	Comerica
21	Cox Communications	46	Jcpenney
22	Accenture	47	Northrop Grumman Corp.
23	Time Warner Cable	48	Xerox Corp.
24	Mgm Mirage	49	Automatic Data Processing
25	Deloitte	50	Wellpoint

Source: Www.Diversityinc.com

Diversity Practices: Top 50 Companies

Diversity Management Programmes

In general, diversity management programmes fall into two categories:

a. Awareness-Based Diversity Training: A type of diversity management programme designed to make people more aware of diversity issues in the workplace and to get them to recognize the underlying assumptions they make about people.

b. Skills-Based Diversity Training: An approach to diversity management that goes beyond awareness-based diversity training and is designed to develop people's skills with respect to managing diversity.

Figure-1: Diversity Management Programme
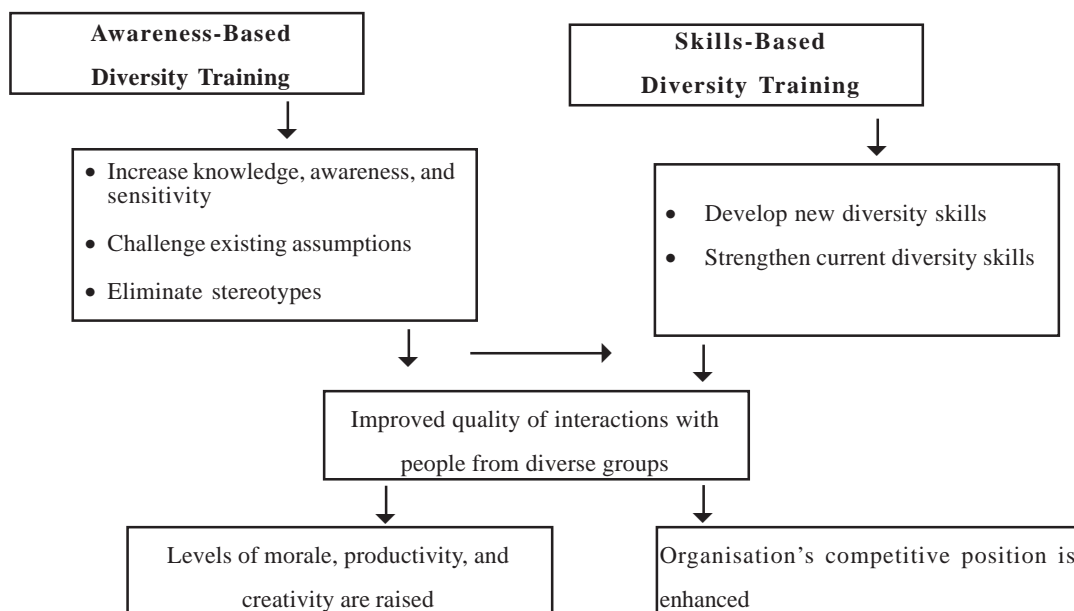
Source: Adapted from material in Carnevale and Stone, 1995.

The following figure illustrates the long-terms goals of both approaches.

Diversity Metrics

The following metrics can be used by the organisations to measure the effectiveness of their diversity practices (Goyal and Gupta 2009). They are:

- Diversity Representation at various levels

- Diversity hire rate at various levels of management

- Diversity turnover at various levels

- Diversity promotion rates at various levels

- Discrimination grievance rate

Managing Diverse Workforce: Role of HR Manager

Successful diversity management requires HR managers to possess skills in leadership, organisational development, change management, psychology, communication, measurement, and assessment. Such cross-cutting skills might seem broadly useful to the success of any business initiative. However, there is a key difference with diversity management. For organisations to profit from diversity, the people in those organisations must change how they interact. Diversity's focus on changing human processes requires and defines HR's role in diversity management (Kreitz, 2007). Following are recommendations for building, maintaining, and leveraging diversity (Boyd):

- Actively promote recognition, celebration, and inclusion of diversity.

- Make sure inclusion is rewarded and exclusion is discouraged. Human dignity must prevail as the key principle.

- Demand HR professionals and leaders who value diversity and whose behaviour supports that value. People must "walk the talk" or the result will be failure.

- Hire people who augment a balanced, diverse workforce. If everyone thinks the same way, then diversity is nonexistent.

- Create a company brand that communicates the diversity of the organisation. Employees, customers, suppliers, and stakeholders will like it.

- Make diversity an integral part of the enterprise's goals.

Agenda for Research

The above review of global diversity practices invariably signals that the organisations in US and Europe are the pioneers in the adoption of diversity management practices. However, it would not be an error to state that the diversity management is still in its evolving stage in many companies in the Asian continent. The integration of diversity strategy into the overall corporate strategy is just catching up in these organisations. There may be diversity practices in these organisations but they are more limited to age, gender and religion. The diversity in its fullest form, encompassing various other dimensions is relatively less prevalent. The reason may be because the Asian market is not a 'melting pot,' analogous to Europe and American market. Further, the lack of awareness of the fruits of diversity initiatives on the part of many organisations in this continent could also be the reason. The best way to address this issue is to lay emphasis on research on diversity practices and sensitise the organisations on the role of diversity in leveraging the organisational effectiveness. There is a need for research to build strong business cases for diversity management. The research can be directed to the study of organisational mission and strategy on workforce diversity, exploring the forces driving the successful implementation of diversity programmes, role of management commitment in diversity, type of training required to sensitise employees on dynamics of diversity, organisational resources required to support the diversity practices etc. The appraisal of diversity practices in terms of its effects on team performance, top-line and bottom-line, ROI and overall organisational effectiveness is a fertile area for research. Given the scope for employee conflict due to diversity practices, research can also be conducted to determine the optimum level of workforce diversity for an organisation. The research can be conducted in sectors like software, airline, retail, banking, insurance, financial services and education as these are highly labour-intensive and cater the needs of diverse set of customers. The research in these sectors would help the management in exploring the role of workforce diversity practices in leveraging the business.

Conclusion

It is indubitable fact that the practice of workforce diversity is emerging as a source of competitive advantage for organisations. The concept of 'global village' and shrinking geographical distance have provided tremendous fillip for organisations to become 'diversity-friendly.' But, assuming the status as 'diversity-

friendly' is not an easy job for companies as the process is beset with many challenges. Put differently, being a very sensitive issue, diversity management is a double edged sword as it can be both boon as well as bane to organisations. This is because diversity practices would benefit the organisations only when it is managed effectively. It is not just making a 'salad' using various vegetables available in the market. It is more of creating a 'tasty and eatable' salad by carefully and consciously choosing the fresh and right mix of vegetables available in the market. The lesson can also be drawn from the recent IPL and Championship League cricket match where Chennai Super King's triumph could be attributed to its effective diversity management. The team has effectively used the strength of its overseas players relative to other teams. The top management attitude coupled with conducive organisational climate and culture valuing the differences would play a pivotal role in leveraging the power of diversity to the advantage of the organisation.

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RFID Deployment
Fast Fashion Retailing

Pankaj M. Madhani

Abstract

Retailers, in short shelf life products such as fast fashion, can achieve superior performance through implementation of radio frequency identification (RFID). Some of the key benefits of item level tagging of RFID are reduced stock out, reduced labour cost, decreased inventory cost, enhanced visibility, and increased customer satisfaction. This paper aims to examine how fast fashion retailers can adopt RFID at item level to achieve overall business excellence in general and from the marketing perspective in particular. The paper evaluates role of RFID in enhancing marketing value added and provides an evaluation framework for calculating return on investment (ROI) for RFID initiatives by fashion retailers.

Fast fashion is the term used to indicate the strategies adopted by fashion retailers to reflect current and emerging fashion trends quickly and effectively in current merchandise assortments (Fernie, 2004). Likewise, fast fashion retailing requires a fast response – not only in terms of fashion trends, but also in terms of marketing response. Radio Frequency Identification (RFID) technology is particularly significant in fashion retailing, as the fashion business is characterized by a wide assortment of products, short life-cycles, high seasonality, high volatility, high impulse purchasing and complicated distribution and logistics operations (Christopher *et al.*, 2004). RFID deployment allows fashion retailers to manage the stock levels more efficiently (Borck, 2006). Development of product specific marketing decisions is

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made possible with close monitoring of product shelves (Atkinson, 2004; and Kelly and Scott, 2005). The aim of this paper is to examine the contribution of RFID adoption in fast fashion retail sector and provide the basis for the development of a conceptual framework for marketing value added. The paper also provides an evaluation framework for calculating return on investment (ROI) for RFID initiatives by fashion retailers.

Literature Review

Recently, RFID technology has come into limelight with more and more diverse business applications. A number of sectors have piloted RFID technology (Ngai *et al.*, 2007b), including aviation (Wyld *et al.*, 2005), building and construction (Jaseiskis and Ei-Misalami, 2003), food and animals (Hall and Hampl,

2004), healthcare (Andersson *et al.*, 2007), libraries and museums (Coyle, 2005), logistics (Ngai *et al.*, 2007a; Won *et al.*, 2006), printing, textile and clothing (Hum, 2001) and retailing (Karkkainen, 2003; Prater *et al.*, 2005). Moreover, RFID technology has also been discussed on a conceptual basis referring its capabilities and applications in various industries (Attaran, 2007).

RFID technology may have a major influence on the supply chain, and definitely affects the retail sector (Li and Visich, 2006). Many large retailers are now considering the RFID deployment for effectively managing their supply chains (Prater *et al.*, 2005). Koh *et al.*, (2006) surveyed the issues and critical factors of RFID deployment in the retail sector with emphasis on benefits of RFID, namely efficient inventory management and effective in-store operations. RFID can help retailers track stock more efficiently by presenting a product identity code, plus the type, size, and colour when activated by a radio signal from a RFID reader (Hogan, 2003). Prater and Frazier (2005) studied the impact of RFID implementation on electronic supply chains and specifically in grocery retailing with main focus on the market drivers leading to RFID adoption in grocery retailing.

Karkkainen (2003) focused on potentials of RFID deployment for short shelf life products and highlighted improvement in supply chain efficiency for UK retailers' Sainsbury's outlet. Larsson and Qviberg (2004) examined the justification of RFID implementation in the retail sector. Dong-Her Shih *et al.* (2008), identified factors affecting RFID's adoption in Taiwan and concluded that firms adopt RFID mainly to increase efficiency in operations, and supply chain. Rekik *et al.*, (2008), claimed that RFID adoption can reduce inaccuracy in inventory management. Lin and Wadhaw (2008) found that RFID deployment facilitates in reducing the supply chain costs. Attaran (2007) concluded that RFID implementation improves communication across the supply chain and, helps in managing supply chain on real-time basis and reduces supply chain costs.

Jones *et al.*, (2005a) conducted a research study on the benefits, challenges and impacts of RFID deployment for UK retailers and reported that RFID helps in reducing labour costs, inventory shrinkage and improving customer service. As per Lapide (2004), RFID adoption would provide more accurate point of sales (POS) information, increase forecast accuracy and enhance visibility in the tracking system. Twist (2005) stated that RFID technology could improve inventory returns and reduce shipment errors in pick/pack process (Richardson, 2004).

RFID Technology and its Applications in Marketing

RFID is the generic name attributed to the technologies that use radio signals for automatic identification and subsequently communication with identified objects, so that the objects can be recognized, tracked and traced. (Jones *et al.*, 2005b). Most RFID infrastructures consist of following three main components (Shepard, 2005):

1. A transponder, also called the smart chip or RFID tag - a tiny computer chip with an antenna fixed to an object to identify it;

2. A reader, mainly used to serve as a communication channel; and

3. Data collection application comprising a middleware system.

RFID tags are equipped with antennas to enable them to receive and respond to radio signals from RFID readers. The tag broadcasts its identity when it passes within range of a reader and does not require human contact or line of sight, thereby allowing its presence to be recorded. The tags contain specific information in its memory about the object that it is attached to which is captured, interpreted and then communicated to business application software. RFID tags are of two types: passive and active. Passive tags are energized by the RF (radio frequency) field from the reader and transmit its identity to the reader. Other data transmission depends on the protocol between reader and tags. While active tags, are powered internally by a battery and can be turned on by a suitable RF field from the reader (or other antenna). Once turned on it communicates with the reader using pre-determined protocols.

Although research has been conducted on cost saving benefits (Kunii, 2003; Twist 2005) of RFID in supply chain management, there is a considerable dearth of literature regarding the valuable benefits that RFID holds for marketing. Byrnes (2004) stated that RFID deployment enables marketers to create parallel and highly dedicated information flow within the firm and within marketing channel partners in a very agile and responsive manner. RFID technology creates enough visibility along the entire marketing channel (Li and Visich, 2006).

Existing research publications imparted primary knowledge and insights on RFID deployment for general marketing purpose (Doyle, 2004). According to Sharpless (2005) true benefits of RFID adoption will be in enhanced marketing opportunities for

retailers. However, research on RFID application for marketing purposes is still not fully explored, hence provides enough opportunity for more specific research on how RFID deployment will impact business to consumer (B2C) marketing (Curtin, Kauffman *et al.,* 2007). Apparel retailing will benefit significantly from new marketing opportunities created by item level tagging of RFID and hence most likely to be one of the first sectors to adopt it (Chappell, Durdan *et al.*, 2003; Kay and Bogart, 2005).

The source of competitive advantage can be found in a firm's ability to differentiate itself from the competitors (Morgan and Strong, 2003). To gain competitive advantage over its competitors, a firm must deliver value to its customers through cost advantage by performing activities more efficiently than its competitors or by creating greater differentiation advantage by performing the activities in a unique way in relation to competitors (Peteraf, 1993; Slater, 1996; Christopher, 1998).

Marketing Value Added through RFID:
A Research Framework

According to Brown (1997), the value chain is a tool to segregate a business into strategically relevant activities. This classification enables identification of the source of competitive advantage by performing these activities more cheaply or better than its competitors. Slywotzky and Morrison (1997) used a 'customer-centric' approach to propose a modern value chain in which the customer is the first link to all that follows. To demonstrate the

Figure 1: RFID Enabled Marketing Value Added Framework for Fast Fashion Retailers

I = Identify the Value
S = Segmentation based on customer value need
T = Select Target
P = Positioning the Value
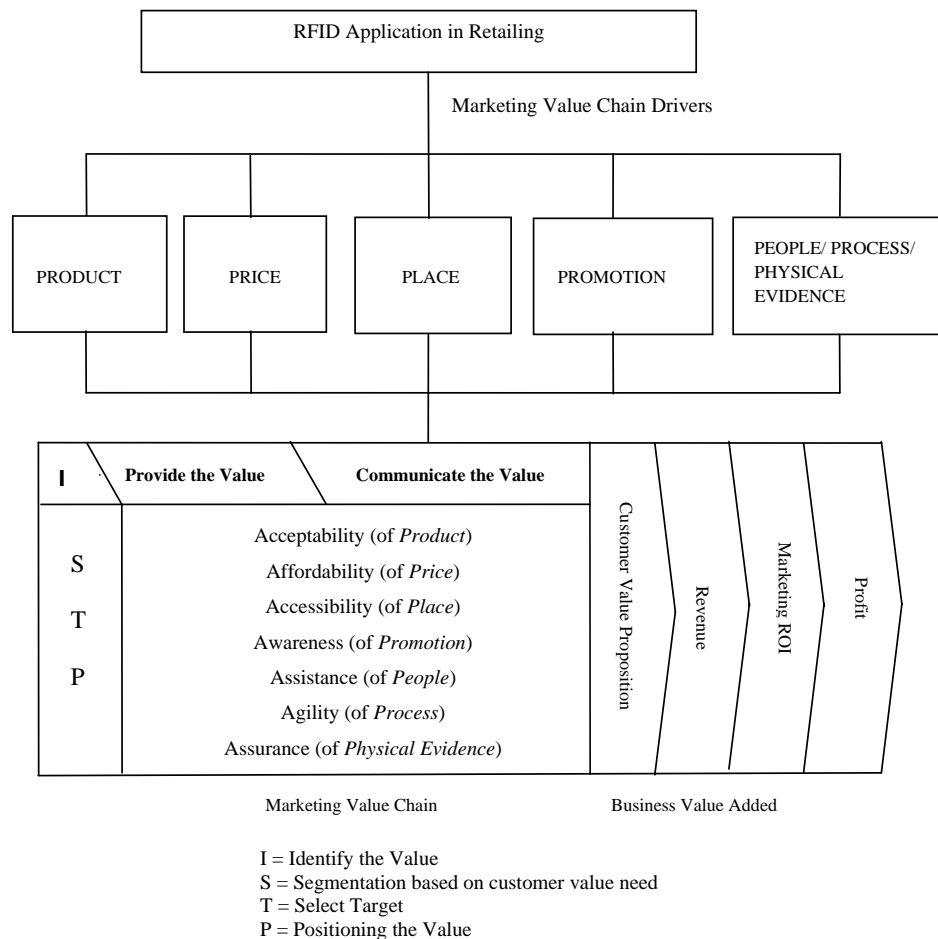
(Source: Framework developed by author)

ways in which RFID deployment can generate overall business values for a fashion retailer, Porter's (1985) value chain framework is used as a basis to present a marketing value added framework as shown in Figure 1.

In this framework, RFID acts as an independent variable while 7A's of marketing value chain namely Acceptability, Affordability, Accessibility, Awareness, Assistance, Agility and Assurance are dependent variables and creates added values for a fashion retailer. The role of added value has long been accepted as a means of securing competitive advantage (e.g. Normann and RamõÂrez, 1994; Naumann, 1995) and long-term success of the firm (de Chernatony and McDonald, 1998). The use of RFID technology by fashion retailers can streamline shop floor operations, reinforce customer relationships, facilitate efficient logistics and inventory management and effectively support marketing and promotional activities (Moon *et al.*, 2008). RFID deployment by fashion retailers will have positive impacts on all drivers of marketing value chain such as *product*, *price*, *place*, *promotion*, *physical evidence*, *process* and *people*. Various propositions are proposed below on the basis of previous research findings of RFID deployment in retail sector in general and in fashion retailing in particular and provide agenda for future research. These propositions or hypotheses are formulated on marketing value chain drivers and have yet to be tested empirically.

Product

One of the key tasks of marketers is to differentiate their products from competitors and create consumer perceptions that the product is worth purchasing (Peter and Donnally, 2007). However, it is also important to understand what the product means to the consumer. According to Borden (1984), product is mainly about quality, design, features and brand name. Byrnes (2004) contends that RFID facilitates marketing by indentifying sales trends in real time, thereby allowing a firm to alter its product mix, product presentation, and merchandising, as well as its inventory levels and order pattern. With RFID deployment, fast fashion retailers, such as Zara and Prada in Europe, enhance their ability to design, manufacture, and stock the latest fashion products that change very quickly, almost weekly by monitoring and responding to consumer preferences more effectively and promptly (RFID Journal, 2002). Hence following hypothesis is submitted:

P1: RFID helps fashion retailers in increasing *acceptability* of product as RFID adoption will give the customer access to a better and latest product in terms of prevailing and upcoming fashion trends.

Price

RFID helps fashion retailers in identification of endangered customers with decreasing shopping habits or acquisition and retention of premium customers creating extraordinary high revenues (Kumar and Petersen, 2005) and hence facilitates price individualization. RFID provides ability to track shelf residence time of each fashion garment. Based on this information, slow moving fashion products having higher shelf residence time are disposed of on FIFO (First In First Out) basis by appropriate pricing strategy, for example, discounting out of fashion items or unsold seasonal items in greater increments to induce demand. Such pricing strategy reflects a win-win situation for both the retailers and the customers. Therefore following hypothesis is stated:

P2: RFID helps in providing *affordability* to customers as dynamic pricing will reduce costly inventory write off and in the long term, this will also lead to a decrease in pricing for the consumer.

Place

Place in retail stores includes more than the issue of how consumers access the retail stores, it also includes the availability of products in such stores (Kotler, P. 2003). According to Atkinson (2004), retailers incur huge loss every year, due to incorrect locations of the products in the store shelves. Wamba *et al.*, (2006) have stated that the use of RFID by retailers for tracking and tracing products can lead to reduced inventory, effective coordination of merchandise and better collaboration among value chain participants.

An RFID based stock management system can find the required items for the customer quickly and correctly (Reynolds *et al.*, 2006). Pilot studies of RFID deployment by some garment manufacturers in the USA reported seven percent sales increase, because of the better visibility of the inventory on the shop floor (Jones *et al.*, 2004). Corsten and Gruen (2003) looked at survey data from 71,000 consumers in 29 countries to decipher what

shoppers do when they face a stock out of a desired product. Following is the outcome of survey:

1. Across the retail sector, stock out levels remain near eight percent.

2. Retailers can lose almost half of intended purchases by customers when they encounter stock-outs.

3. Those abandoned purchases transform into revenue losses of about four percent for a typical retailer.

With RFID technology, retailers will also be able to track products that are selling quickly and then to restock product shelves with such fast moving items (Jones *et al.*, 2004). RFID technology also acts as a means to more quickly identify fast moving styles, colours and sizes (Erickson and Kelly, 2007). US fashion retailer Gap piloted item-level tagging of RFID and achieved a 99.9 percent inventory accuracy rate along with two-seven percent increase in sales due to higher availability of products (Gaukler *et al.*, 2007).

RFID deployment facilitates inventory replenishment process, causes large savings in time and labour costs, and also enables a rapid customer response (Myerson, 2007). RFID facilitates retrieval of products in efficient manner according to their shape, size or relatedness as there is no need to assign the products based on their types (Jones *et al.*, 2005a). With RFID deployment inventory could be tracked more effectively, thereby making sure that entire collection of garments was made available to customers (Sangani, 2004). Hence following hypothesis is submitted:

> *P3*: RFID deployment by fashion retailers increases *accessibility* of products to customers, as it decreases situations of product stock outs and increases availability of desired products.

Promotion

Loveman (2003) explains how marketers should gather relevant customer information, develop appropriate marketing strategies and identify core customers. Loveman (2003) also emphasizes that traditional mass marketing must be replaced with a more customized approach by using sophisticated technology. An essential aspect of customer retention strategy is the individualization of the firm's offering to the customer needs (Bruhn, 2001). RFID based customer loyalty cards or smart cards enable fashion retailers to record how fashion shoppers

shop, interact with products and make buy decisions. RFID technology offer opportunities for product promotion and an interactive display of related products as discussed by Jones *et al.*, (2004). Similarly, when customers interact with the product, appropriate promotional messages can be given through RFID enabled large screen multimedia displays. Therefore following hypothesis is stated:

> *P4*: With RFID adoption, fashion retailers can provide customized marketing programmes for the customers at an individual level and hence increases product and brand *awareness*.

Physical Evidence

RFID based multimedia displays allow customers to see fashion items of different colours and sizes in the same category of their preference, as well as the upcoming fashion trend. Presentation terminals or displays around the fashion shop can be used for customer information triggered by RFID tagged items (Jones, Clarke-Hill et al., 2004). RFID technology also provides useful guidance or assurance when customers sneak around the product shelves, comparing prices without realizing its unique specialty. In such cases, RFID triggered display screens could inform the customers about the special attributes that justify higher price of items and also suggests upcoming fashion trends. Hence following hypothesis is submitted:

> *P5*: RFID supports physical evidence by providing *assurance* through tangible communication that conveys to customers how a product can meet their needs and wants.

Process

RFID deployment can also make great improvements in the storage, picking and shipping of fashion items as it allows the elimination of manual and visual verification of each product received at retail store, thereby avoids errors due to the human factor. Bose and Pal (2005) claimed that the significant benefits achieved from RFID adoption are increased visibility across the supply chain and full or semi-automation of routine and repetitive work operations. Angeles (2005) reported that RFID technology has the potential to provide process freedom (thus reducing labor requirements) and real time visibility across the supply chain especially in retailing. Therefore following hypothesis is stated:

P6: RFID adoption by fashion retailers enhances *agility* of process as it facilitates the optimization of business processes of fashion retailers.

People

Seiders *et al.*, (2005) reported that "marketing literature consistently identifies customer satisfaction as an important precursor to customer loyalty and subsequent repurchase." Customer service has become a very important research theme because it is the crucial element in retaining customers (Darian *et al.*, 2001). Luo, Xueming and Christian Homburg (2007), also underline that, there is significant evidence in the marketing literature that customer satisfaction is an important driver of a firm's profitability. For instance, Anderson, Fornell, and Lehmann (1994) and Rust, Moorman, and Dickson (2002) found a positive influence of customer satisfaction on financial performance indicators of a firm, such as ROI and return on assets (ROA). Initial trials with RFID deployment in a marketing application enabled more customized services and shopping convenience and lead to higher customer satisfaction and loyalty (Berthiaume 2004; Loebbecke 2005). Customers shopping for fashion apparel show a much more active shopping behaviour than shopping for grocery or other convenience goods. Hence, customers require higher level of assistance from sales people. Therefore following hypothesis is submitted:

P7: RFID supports fashion retailers in enhancing level of *assistance* offered to customers as it can help to faster locate misplaced fashion items and allows for better shelf replenishment.

Managerial Implication and Analysis

There are a few implications of the above seven sets of propositions for fashion retailers. By deploying RFID in retail operations, fashion retailers can enhance business competitiveness by providing right *product*, sold at the right *price*, in the right *place* using the most appropriate *promotion* with tangible communication of *physical evidence* executed through agile *process* and delivered by supportive *people*.

However, to justify large investment on RFID deployment at item level, fashion retailers need to measure return on RFID investment. According to Clancy and Stone (2005), there is increasing calls made by executives of firms regarding the need to evaluate the ROI in marketing. It is essential for firms to treat

marketing expenditures as an investment in order to measure the ROI in marketing (Schultz and Gronstedt, 1997). Many firms have viewed marketing expenditures as a short-term expense (Rust, Lemon, and Zeithaml, 2004) to be incurred mainly when finances are abundant, and to be curtailed during time of difficulty. However, only through treating marketing as an investment and not as an expense, marketing can play key role in the strategy of the firm (Schultz and Gronstedt, 1997).

Marketing has had limited input into strategy formulation of firm (Srivastava, Shervani, and Fahey, 1998), and one of the most important reasons for this has been the inability of marketers to identify, quantify and measure the additional value that they bring to the firm (Seggie *et al.*, 2007). According to Webster *et al.*, (2003), marketers have blamed themselves for not linking marketing to quantifiable financial outcomes. Veeramani *et al.*, (2008) also stated that one of the barriers to the adoption of RFID by firms is the difficulty in assessing the potential ROI. For measuring ROI on RFID initiatives, it is very important for fashion retailers to measure all the benefits of RFID across the revenue and cost structure of fashion retailers. An evaluation framework for measuring ROI through performance improvement across the various drivers of marketing value chain is provided in Figure 2.

Limitations

The overall values generated through RFID application will be essential for fashion retailers to better serve their customers, to enhance their operational efficiency and, in turn, to create competitive advantages. Despite all these benefits, there are still a number of issues for RFID deployment namely technology, standards, infrastructure, cost and privacy (Davison and Smith, 2005). The increased expenditure on the RFID tags, along with matching hardware facilities, and the system operations and maintenance support are also hurdles in item level tagging of RFID (Jones *et al.*, 2005a). While passive RFID tags are steadily becoming cheaper, it has not yet reached affordable level that is acceptable to most fashion retailers for individual item level tagging (Bose and Pal, 2005). Consumer privacy concern is also one of the major challenges for RFID implementers (Spiekermann and Ziekow 2005). The special functions of RFID in tracking customers' shopping behaviour have already provoked a range of privacy concerns among civil liberties groups in many countries (Jones *et al.*, 2005a; Shih *et al.*, 2005; Metras, 2005; Want, 2006). Lack of global standard is also major obstacle in the deployment of RFID (Erickson and Kelly, 2007).

Figure 2: An Evaluation Framework for Measuring ROI on RFID Deployment

Sl. No.	Impact of RFID on Revenue and Cost Structure of Fashion Retailers	Marketing Value Chain Drivers	Performance Improvement across value chain
(A)	Sales Revenue (Increase)	Product	· Faster response to market · Increased availability of product according to taste and preference of customers·
		Priece	· Reduced inventory write off
		Place	· Reduced stock out
		Promotion	· Customized promotion based on past shopping history
		Physical Evidence	· Increased cross-selling and up-selling
		Process	· System integration · Faster checkout · Easier return
		People	· Increased customer satisfaction · Repeat purchase from loyal customers
B)	COGS (Cost of Goods Sold) (Decrease)	Process	· Optimized operation and labor cost · Better transparency and visibility · Lower procurement cost · Reduced shrinkage · Inventory reduction
(C)	**= Gross Profit** (C = A-B) (Increase)		
(D)	Selling Expense (Decrease)	Promotion	· Focused and customized promotion
(E)	G & A Expense (Decrease) (General & Administrative)	Process	· Reduced transaction expenses · Reduced labor cost
(F)	Logistics and Distribution Expense (Decrease	Place	· Faster receipt and shipment · Better management of inventory · Optimized transportation expenses
(G)	**= Operating Profits** (G = C-D-E-F) (Increase)		
(H))	Interest Expense (Decrease)	Place	· Reduced working capital requirement with short operating cycle and reduced need for safety stock

(I)	= **Net Income** (I = G-H) (Increase)
(J)	RFID Investment
(K)	ROI = Net Income / RFID Investment (K = I/J)(Increase)

(Source: Framework developed by author)

Conclusion

The implementation of RFID technology in the diverse areas of business, such as fashion retailing is in its early stages. Fashion retailing may greatly benefit from deployment of RFID because of suitable product attributes of fashion outfits and cost effectiveness achieved on item level tagging of RFID. In a current era of intense competition, a fashion retailer needs to exploit the use of advanced technology such as RFID extensively so as to develop competitive advantage for long term success of business. The paper identifies RFID applications in fashion retailing starting from a marketing perspective instead of focusing solely on the logistics and supply chain improvement.

Paper highlights impact of RFID enabled marketing value chain drivers on performance of fashion retailers. The marketing value added framework developed in this paper can be used by researchers to evaluate the marketing strategies and opportunities available to fashion retailers and sets a future research agenda on how marketing values generated by RFID deployment may affect a fashion retailer's performance in terms of increased customer value proposition, increased sales revenue, reduced cost, higher marketing ROI, and improved profitability. The paper also provides a financial framework for measurement of ROI for RFID deployment. However, more empirical research should be directed to quantify the overall benefits as well as the assessment of challenges in pursuing RFID technology by fashion retailers.

Keywords: Fast fashion; marketing value added; retailing; RFID.

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Poverty Eradication
Women's Self Help Groups

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A b s t r a c t

In Tamilnadu, to eradicate women unemployment, attractive schemes have been introduced, like "Self Help Group," hereafter called SHG. The SHG comprises poor, rural women who have volunteered to organize themselves into a group for eradication of poverty among themselves. They resolve to save their money regularly and convert their savings into a Common Fund known as the Group Corpus, to be used through a common management scheme. The SHG has devised a code of conduct to bind itself. This will be in the form of regular meetings (weekly or fortnightly), functioning in a democratic manner, allowing free exchange of views, participation by the members in the decision making process.

Poverty and unemployment are the major problems of any under developed countries, to which India is no exception. In the rural area 27.1 percent of the population is living under poverty. The overall unemployment rate is estimated to 7.32 percent. The female unemployment rate is 8.5 percent. The rate of growth of women unemployment in the rural area is 9.8 percent.

In Tamilnadu to eradicate women unemployment more attractive schemes are introduced, one of which with less effort is Self Help Group, hereafter called as SHG. SHG is a group of rural poor females who have volunteered to organize themselves into a group for eradication of poverty of the members. They agree to save regularly and convert their savings into a common

fund known as the group corpus. The members of the group agree to use this common fund as a group through a common management.

The SHG will collect the minimum voluntary saving amount from all the members. The group will devise a code of conduct to bind itself. This will be in the form of regular meetings (weekly or fortnightly), functioning in a democratic manner, allowing free exchange of views, participation by the members in the decision making process.

The SHG corpus fund should be used to give advance to the members in the form of loans. The group should develop financial management norms covering the loan

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sanction procedure, repayment schedule and interest rates.

The study focuses on the functions and performance of self help groups in Coimbatore district.

Need for the Study:

♦   There is difference in the income level of the Indian population.

♦   On one side one segment of the people is becoming very rich and on the other side another segment less qualified and living in rural areas, is facing poverty.

♦   Understanding the urgent need to increase the income level of the population who are not employed in companies and to bring balance in the economy, government felt that SHG concept may be one of the methods that it can implement to minimize the problem of unemployment which is also expected to increase the income level of the population which is below the poverty line.

Common Functions of SHG are:

♦   Creating a common fund by the members through their regular savings,

♦   Flexible working system and pool the resources in a democratic way,

♦   Periodical meeting,

♦   The decision making through group meeting,

♦   The loan amount for timely repayment is small and reasonable.

♦   The rate of interest affordable, varying group to group and loan to loan, little higher than the banks but lower than the money lenders.

Objectives of the Study

♦   To study the functions and performance of SHG in Coimbatore district,

♦   To identify the reasons for participating in SHG,

♦   To know the saving pattern of SHG,

♦   To analyze the members opinion of SHG, and

♦   To study the income, expenditure and savings of the members after joining SHG.

Research Design

The research design used in the study is descriptive research design. A descriptive study is undertaken in order to ascertain and be able to describe the characteristics of the variables, the research design reveals the study of facts existing.

Sources of Data

The data were collected from both primary and secondary sources. Questionnaire method is used for collecting the primary data. The data were also collected from published records, Journals and Websites.

Sample Size

Using the random sampling method, the data were collected from 150 respondents.

Tools and Techniques Used

The collected data were analyzed by employing the statistical tools like percentage analysis and Chi-square test.

Limitations of the Study

♦   Some of the respondents hesitate to furnish the details.

♦   Accuracy of the Primary data depends upon the authenticity of the information given by the respondents in the questionnaire.

Table 1 shows that, 30 percentage of them were earning up to ` 3000, 20  percentage of the respondents income is ` 3000 - ` 4000,  30 percentage of them were earning ` 4000-` 5000 and 20 percentage of them monthly income is above ` 5000.

Table 2 reveals that, due to poor income 20 percentage of them join in self help group. 20 percentage of them join due to unemployment, 30 percentage of them join, due to induce new intervention, 10 percentage of them join, due to the previous

Results and Discussion

Table 1: Table showing the Monthly Income

Income	No of Respondents	Percentage
Upto ` 3000	45	30
` 3000- ` 4000	30	20
` 4000- ` 5000	45	30
Above ` 5000	30	20
Total	150	100

Table 2: Table showing the reasons for becoming SHG member

Particulars	No of Respondents	Percentage
Poor income	30	20
Unemployment	30	20
New Intervention	45	30
Previous business experience	15	10
Advice of the family	30	20
Total	150	100

Chart 1: Chart showing the reasons for becoming SHG Member
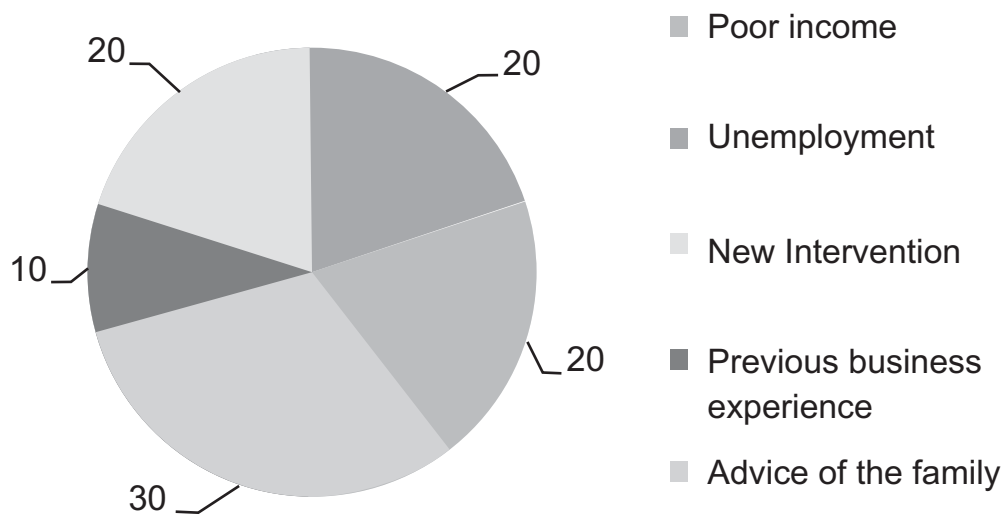
Table 3: Table showing No. of Respondents Faced Problem for joining the Group

Particulars	No of Respondents	Percentage
Yes	70	47
No	80	53
Total	150	100

business experience, and 20 percentage of them join due to the advice of their family.

Table 3 shows that, 47 percentage of the respondents faced problem for joining the group.

It is evident from Table 4, 7 percentage of the member face resistance from their parents. 71 percentage of them face the resistance from their husband, 22 percentage of them face the objection from the group members.

Table 4: Table showing the Problem faced by the Members

Particulars	No of Respondents	Percentage
Resistance from parents	5	7
Resistance from husband	50	71
Objection from the group members	15	22
Others	-	-
Total	70	100

Table 5: Table showing the Name of the Bank

Particulars	No of Respondents	Percentage
Indian Overseas Bank	30	20
State Bank of India	75	50
Indian Bank	45	30
Total	150	100

Table 5 reveals, 20 percentage of them maintaining transaction with Indian Overseas Bank, 50 percentage of them maintaining transaction with State Bank of India and 30 percentage of them maintaining in Indian Bank.

Table 6 reveals that, 30 percentage of the group conduct meeting to collect saving amount and loan amount. 20 percentage of the group conduct meeting to maintain long lasting group relationship and 50 percentage of the group conduct meeting to take business decision.

Table 7 shows that, 40 percentage of them engaged in the manufacturing business, 40 percentage of them engaged in the training business and the 20 percentage of them engaged in the serving business.

The Table 8 reveals that 40 percentage of the respondents strongly agree that SHG is increasing members income, 50 percentage of the member strongly agree that the group is creating awareness among the members, 40 percentage of the member strongly agree that it is improving leadership skills and communication skills,

Table 6: Table showing the Purpose of Conducting the Meeting

Particulars	No of Respondents	Percentage
To collect saving amount and loan amount	45	30
To maintain long lasting group relationship	30	20
To take business decision	75	50
To decide on loan requirement	0	0
Total	150	100

Chart 2: Chart showing the Purpose of conducting the Meeting
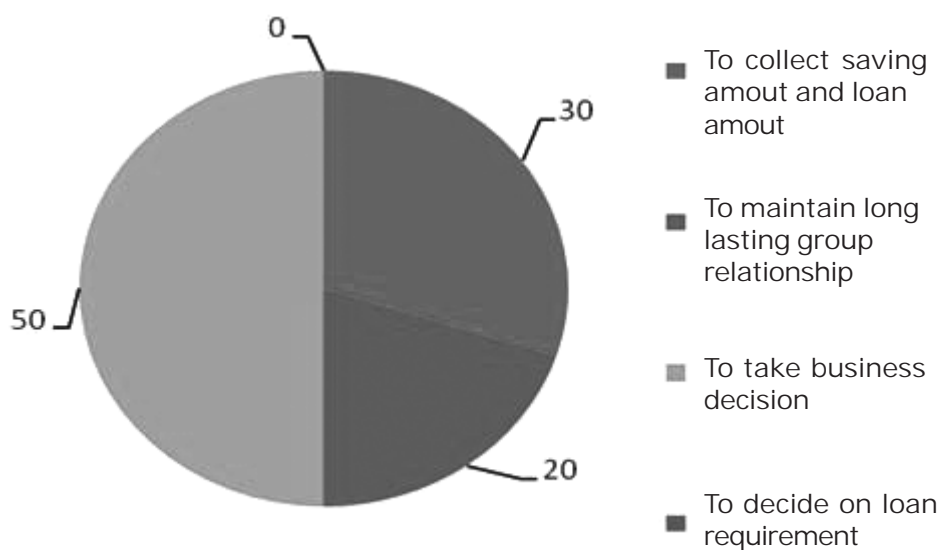
Table 7: Table showing the Type of Business

Particulars	No of Respondents	Percentage
Agriculture	-	-
Manufacturing	60	40
Training	60	40
Serving	30	20
Total	150	100

Table 8: Table showing Members Opinion

Factors	Counts	Opinion			Disagree	Strongly Disagree	Total
		Strongly Agree	Agree	Neutral			
Increase in the women's own income	No. of respondents	60	45	45	0	0	150
	Percentage	40	30	30	0	0	100
Creating aware-ness on health, education, environment etc.	No. of respondents	75	75	0	0	0	150
	Percentage	50	50	0	0	0	100
Improving Leadership Skill	No. of Respondents	60	45	45	0	0	150
	Percentage	40	30	30	0	0	100
Improving Communication Skill	No. of respondents	60	45	45	0	0	150
	Percentage	40	30	30	0	0	100
Increasing the power of decision making for women in house hold affairs	No. of respondents	75	75	0	0	0	150
	Percentage	50	50	0	0	0	100
Organizing their own business and production units	No. of respondents	75	30	30	0	15	150
	Percentage	50	20	20	0	10	100

Table 9: Table showing Members Opinion

Factors	Counts	Opinion				Strongly Disagree	Total
		Strongly Agree	Agree	Neutral	Disagree		
Easy access to finance, without the burden of collateral security	No. of respondents	15	60	15	45	15	150
	Percentage	10	40	10	30	10	100
Participation in development programmes	No. of respondents	45	60	45	0	0	150
	Percentage	30	40	30	0	0	100

Discouraging and preventing child labours	No. of respondents	15	30	90	15	0	150
	Percentage	10	20	60	10	0	100
Easy to follow bank procedures	No. of respondents	15	120	15	0	0	150
	Percentage	10	80	10	0	0	100
Increase Self-Confidence	No. of respondents	120	30	0	0	0	150
	Percentage	80	20	0	0	0	100

50 percentage of the member strongly agree that it is increasing the power of decision making and 50 percentage of the member strongly agree that the SHG is helpful in organizing the own business.

The table 9 shows that, 40 percentage of the members agree that it is easy to access the finance, 40 percentage of the members participate in development programmes, 60 percentage of the members discourage and prevent child labour, 80 percentage agree that it is easy to follow the bank procedures and 80 percentage of the respondents strongly agree that it is increasing their self confidence.

Chi-Square Test

The chi-square test is an important test amongst the several test of significance developed by statisticians. It is a statistical measure used in the context of sampling analysis for comparing a variance to theoretical variance. It can be used to determine if categorical data shows dependency or the two classifications are independent. It can also be used to make comparison between theoretical population and actual data when categories are used. The chi-square test is applicable in large number of problems.

Formula for calculating Chi-Square value

$$\lambda^2 = \frac{(O-E)^2}{E}$$

Where

      O = Observed frequency
      E = Expected frequency

Chi-square Result

H_0 : There is no significant relationship between monthly income and Increase in the women's own income.

Ha : There is significant relationship between monthly income and Increase in the women's own income.

$$\lambda^2 = \frac{(O-E)^2}{E} = 38.09$$

Degree of Freedom   =   (c -1)(r - 1)
                            =   (4 – 1) (5-1)
                            =   12

Table value of Chi-square for 12 degree of freedom at five percent level of significance is 21.0.

The calculated value of Chi-square is 38.09. Table value of Chi-square for 12 degree of freedom at five percent level of significance is 21.0. The calculated value of Chi-square is higher than the table value and therefore it is proved that there is significant relationship between monthly income and increase in the women's own income.

Findings

√ 30 percent of the members' monthly income is `.4, 000 – ` 5,000.

√ Due to the unemployment and poor income, 20 percent of them joined in Self Help Groups.

√ 80 percent of the respondents faced problem for joining the group.

√ 71 percent of the respondents were resisted by their husbands for joining in this group.

√ 40 percent of the members engaged in manufacturing detergent soap and running cotton industries, and the other 40 percent of the respondents engage in selling of cloths and food items.

√ 50 percent of the respondents maintain transaction in State Bank of India.

√ 40 percent of the members strongly agree that, Self Help Groups increases the Women's own income.

√ 50 percent of the respondents strongly agree that, the Self Help Groups create awareness among the members.

√ 40 percent of the respondents strongly agree that, participation in these groups increase the leadership skills.

√ 80 percent of the members strongly agree that, participation in these groups increases the Self confidence.

Suggestion

§ More training should be given to the members, so that they can run their own business efficiently.

§ Members should effectively utilize the training programmes.

§ Most of the members in the group were above 30 years, awareness should be created among the younger generation to participate in this group.

§ Awareness programmes should be conducted among the poor income group to participate in the SHG for improving their standard of living.

Conclusion

The study was undertaken for the women empowerment through SHGs in Coimbatore. It is found that the income of the women has been increased after joining the SHGs. So that they can manage the monthly house holds expenditure which has risen to a considerable level. But the savings is increasing at slow rate, because the incremental expenditure is higher. Mostly they are spending for present consumption. The members should change it. The good practice of the women SHGs in the study area is repayment of the loan in time. Nearly 64 percent of the debtor paid their monthly due within the time, even some members around 19 percent paid their due in advance. A few members do not pay in time but this is not affecting the further credit of SHGs. Since the repayment of loan is regular and within the time, we may conclude that the economic activities of SHGs are quite successful.

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Contours of the Future World
A Corporate Perspective

M.S. Srinivasan

Abstract

The ability for an extended gaze beyond the past and the present into the future is one of the most important qualities of a visionary strategist and leader. And the emerging trends in strategy and leadership are tending towards highly futuristic approach. An effective strategy must be able to discern the future possibilities and provide a road-map for converting them into profitable business opportunities. This article is an attempt to understand the nature of the possibilities and opportunities lying in the womb of the future, viewed in the modern corporate context.

When we examine the evolutionary process of nature, we will find that she marches ahead not only through incremental variations in the same genre, type or species but also by quantum leaps, which create new types or species. This brings us to the question what is the nature of the quantum leap which Nature is contemplating for humanity and earth? This question cannot be dismissed as one of the fads of the new age philosophy because it has practical implications for corporate strategy.

As indicated earlier, charting a path to the future is one of the aims of strategy. The trends in technology, demographics, life-styles and values are some of the important indicators for understanding the opportunities and possibilities in the womb of the future. But when the future change is not merely incremental or even a large extension of the present but a quantum leap into a new and unmanifest dimension of life or consciousness, then understanding the essence of this new change acquires immense importance. Most of the trend-setters in strategic thinking have perceived the fact that the future change will be a discontinuous quantum leap from the present. The leading corporate strategists have their say in the matter. "You can't look at the future as a continuation of the past... because the future is going to be different," says Charles Handy. Peter Senge has yet another opinion: "We have to stop trying to figure out what to do by looking at what we have done." Michael Hammer approaches the subject from a different point of view: "If you think you're good you are dead. Success in the past has no implication for success in the future...The formulas for yesterday's success is almost guaranteed to be formulas for future failure.

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However none of the management thinkers above seem to have a clear perception of the nature of the future world. Most of the secular and management thinkers of the west consider the future as something inherently unpredictable. The common idea or belief among management thinkers is that no one can predict the future but can create or shape a future out of emerging opportunities. As Gary Hamel states: "The big challenge in creating the future is not predicting the future ... Instead, the goal is to try to imagine a future that is possible ¾ the future that you can create" (Hamel G. 1998). But the eastern spiritual thought believed that there is an intuition in the spiritual consciousness of our soul which can discern the future intention and plan of Nature for humanity or the world or the possibilities which Nature is trying to bring forward or manifest in the future. If this eastern belief is true, then the perceptions of spiritual thinkers on the future can possibly provide a better view of the future possibilities than management thinker. But how to test the validity of this eastern belief or spiritual intuition? It has to be viewed in the context of present trends. If a spiritual intuition helps in a deeper and better understanding of the essence or patterns of the present and emerging trends, then it has atleast a tentative validity.

In the Realms of Human Psyche

What are the major trends which are likely to have a profound influence on the future of human evolution, especially the future of the corporate world?   In the inner psychological realm there is a widespread seeking for a higher meaning and purpose in life and work. After a reign of soul-stifling and self-seeking materialism, people all over the world are seeking for some form of a moral, psychological and spiritual fulfillment in life and work. As Charles Handy, a leading management thinker articulates the rationale behind this inner seeking for a higher purpose in life:

 "The great and most satisfying thing in life, I think, is a purpose beyond oneself. If the purpose is only for yourself it rapidly dissipates ...   I think that if one doesn't have a purpose beyond oneself, bigger than oneself, then one ends up disappointed" (Handy C. 1998).

This inner search for meaning is perhaps felt more in the corporate world than in the other sections or society because of two reasons. The first factor is that in our modern age, it is the corporate world which attracts the cream of youthful talent and these talented people, when they are professionally and materially

satisfied, seek for higher or inward fulfillment. So, Charles Handy, counsels business leaders "if you want to retain talent you have to provide a cause" and the organization have "to provide a purpose, if they want to retain good people" (Handy C.1998). The second factor is that people in the corporate world, especially the talented ones, are more materially and economically satisfied than other sections of the society and therefore seeking for a more non-material fulfillment. As a manager of Dupont points out: "To a large extent the people that are here have gotten to a point where their basic needs are met as far as a sound financial basis for living and are looking to satisfy other internal needs."

So, the emerging trends in the corporate world like the growing recognition of the importance of ethics, values, corporate social responsibility, and "spirituality at work" movement are not entirely the result of external or environmental factors as some management thinkers tend to think. There are psychological factors behind these movements. However both the environmental and psychological factors are perhaps the result of some terrestrial evolutionary factors. Sri Aurobindo, a spiritual seer and thinker, gives an indication of this evolutionary factor in the following passage.

"In the next stage of human progress, it is not a material but a spiritual, moral and psychical progress which has to be made" (Sri Aurobindo, 1972).

In other words the future evolution will be predominantly in the inner realms of consciousness and not exclusively in the outer material or economic life. The progress which has to be made in the future or in other words the type of progress which is in harmony with the next quantum leap in the evolutionary journey of Nature is the moral, aesthetic, psychological and spiritual development of the individual and the progressive self-expression of this inner progress in the outer life, leading to a corresponding progress of the community. The concept of this higher evolution or progress is not something entirely new. Most of the great civilizations of the past like the Greece, China and India had this ideal and conceived human progress, individual and collective, as a journey towards this ideal. But in the ancient world this ideal was mostly confined to the cultural life of the community, in religion, philosophy, art, literature, and pursued by a few elite individuals or communities. But in the future this higher progress has to be made not only in the religious and cultural life of the community but also in every activity of the secular life like economics, business, commerce, science, technology, family,

community. Any approach to strategy which ignores this evolutionary imperative is not likely to be successful in the future.

At present corporate world as a whole is becoming increasingly sensitive to ethical issues. As the founder of Infosys, Narayana Moorthy points out: "Investors, customers, employees and vendors have all become discerning and demanding greater transparency and fairness in all dealings" (Skaria G. 1999). And the growing interest and emphasis on "Business Ethics" in the academic as well as the professional streams of management augurs well for the future evolution of business. However, for inner progress, the ethical motive has to become intrinsic, which means it has to be pursued for its own sakes, irrespective of external demands or practical considerations. For example, when Pramod Bhasin, President and CEO of Genpact was asked, "how do leaders face up to scenarios, where there could be clash between values and pragmatism, especially in the light of intense competitive pressures" he replied: "The choice is easy, if we understand integrity is non-negotiable" (Bhasin P. 2004). This answer comes from a mind which has understood the intrinsic need of ethics. However for a more rapid and accelerated ethical and psychological progress of business, the corporate world must arm itself with an inner discipline by which the inner sources of unethical behaviour are eliminated and conversely the inner resources which strengthen the ethical consciousness and will of the individual and the community are augmented. Here comes the importance of Indian Yoga which can be of great help in formulating this inner discipline. This is the inner dimension which will be the most compelling factor of the future. There is also the outer dimension.

In the Outer Environment

The trends in the outer life in economics, society, politics, technology and science have been analysed and plotted comprehensively by futurist thinkers like Alvin Toffler and John Nisbet and many others. For example Japanese government has identified microelectronics, bio-technology, material sciences, telecommunication, civil aviation, robotics, machine tools, computer hardware and software as the seven-key-industries or technologies for the first part of the twenty-first century. Similarly most of the futurists have specified emergence of Asia and the growth of Woman power as some of the mega-trends of the future. Here again, we have to identify the main tasks which

will bring out the unmanifest possibilities in the outer life of humanity. We have identified the task in the inner being or consciousness in man as the moral, aesthetic, psychological and spiritual development of the individual and collectivity. In the outer life, the main evolutionary task of the future is to bring out fully all the potentialities of those sections of the society; community or the organization which were either suppressed or not given sufficient opportunities to express themselves.

Empowerment of the Marginalised

In this perspective, the main evolutionary tasks of the future, at the societal level are Equity and Empowerment. The first task is to create equity which means equitable distribution of or access to knowledge, wealth, wellbeing, decision-making, culture and opportunities for growth. The second task is the Empowerment of Women and the Worker at the lower levels of the social and organizational hierarchy. Empowerment means greater participation, freedom and opportunities for the full development and self-actualization of the individual. In these two tasks corporate world has taken the lead. The progressive sections of the corporate world are making a conscious effort towards equity through practices like minimizing hierarchy, democratic leadership, employee participation in decision-making, profit-sharing, employee stock options, self-managed teams, corporate social responsibility and values like "respect for the individual." Women are making their presence increasingly felt in business and management, not only in quantitative terms but also in terms of quality of work and effectiveness. Some companies, like for example, ICICI in India, have women-friendly policies and practices to retain talented women executives. Those companies or nations who are able to harness fully the potentialities of this demographic trend will have competitive and evolutionary edge over others. As Warren Benis, the well-known leadership guru, writes about US:

"...I think the US's industrial competitive advantage will be the leadership of women. Partly because we have made a lot of progress in this particular area, not to the point where I'm satisfied yet, but far better comparatively than any other country I know... So even though we are still below where we should be, I think in the United States Women will be appearing much more often in top management positions, and one of our competitive advantages will be the full deployment of the talent of women in our work-force" (Benis, Warren, 1998).

The quality movement initiated by Deming and the Japanese management has awakened the corporate world to the need for empowering the work-force in the shop-floor. Similarly, the demand of the emerging corporate environment for quick response to the fast-changing customer needs has awakened the corporate leaders to the need for empowering the front-line worker who is in direct contact with the customer, market or the field of work. As Michael Hammer, inventor of Reengineering, states:

"We need ways of operating in which decisions are made by those much closer to the work. We need a model in which people at the front-lines, armed with a basic strategy decided by the senior management of the company are given a lot of autonomy and responsibility for deciding things on their own. A model where management exists not to direct or to supervise but rather to facilitate and enable" (Hammer M. 1998).

Gary Hamel goes still further and says that empowerment should not be confined to the decision-making in the front-line. Even strategy-making, which was now done at the senior and top-management levels, has to percolate down into the younger and the marginal work-force on the periphery of the organization. Demanding a complete "democratization of strategy" Hamel states:

"And that means giving a disproportionate share of voice to the people who until now have been disenfranchised from the strategy-making process. It means giving a disproportionate share of voice to the young people. It means giving a disproportionate share of voices to the geographic periphery of your organization... because typically, the further away you are from headquarters, the more creative people are: they don't have the heavy hand of bureaucracy and orthodoxy on them. And it means giving a disproportionate share of voice to the new comers" (Hamel, G. 1998).

In a nut-shell, the future tends in empowerment is moving towards what is now called as "distributed leadership" which means, initiative and leadership are valued and encourage at every level in the organizational hierarchy.

But it is easy to think such liberating and progressive ideas but much more difficult to put them into practice. Here comes the most promising part of these new trends; a few pioneering companies are converting these ideas into practices. ISS is a Danish firm in the cleaning business. The company, instead of creating hierarchical set up, formed teams that worked together on a contract. The front-line workers are trained not only to clean properly, but also on how to work together in a team, maintain quality standards, managing finance and finally to focus on the needs of the customer. And the work-group was given full freedom to work as a coherent, self-managed team, planning its work and taking its own decisions (Barrret C. 1999). The other well-known example is the Ramco of Brazil. Virtually every one in the company set their own hours. Some people with particularly valuable skills get higher salaries than their bosses without having to be in the management track. There is no hierarchy to speak of except titles like counselors or associates. Employees make most of the corporate decisions. When supervisory people are hired they are interviewed and evaluated by their future subordinates. There is complete openness of information. Financial data of the company is shared with workers. Company provides classes to workers on financial analysis so that they may understand the financial condition of the company (Michael R. and Rinzler, 1993).

The Social and Environmental Responsibility

The other more visible trends in the corporate world are corporate social responsibility and environmentalism. The corporate social responsibility is in fact a part of the task of creating equity in society and therefore those companies which make it a part of their corporate strategy and pursue it persistently and sincerely, with a moral commitment to equity and distributive justice will gain evolutionary advantage. The other movement which will dominate the future is environmentalism. Here again many progressive companies are taking environmental sustainability seriously probably because it is also profitable. For example some of the ecological practices like waste recycling, energy conservation and carbon trading save money and resources. However, to achieve evolutionary advantage, the concept and practice of sustainability has to progress from token environmentalism like tree planting to make the entire organizational and industrial process, from procurement to packaging, sustainable. Secondly, the new science of ecology has deep and profound insights on the laws and principles by which Nature sustains and manages her creation. The modern management thinkers and practitioners have to learn from Nature, the science of sustainable management.

Whatever we have said earlier on corporate social responsibility applies equally to ecological sustainability. Those companies which make sustainability an integral part of their corporate strategy, will gain evolutionary advantage because, sustainability

means attuning the corporate life with the laws of Nature. According to some thinkers' ethics, social responsibility and environmentalism will be the three major values of the future paradigm in management and the main factors which will determine the competitive advantage in the future. For example, as Fritjof Capra and Gunter Pauli, points out:

"... on the basis of thorough market analyses in Europe, Japan and the US, it has been concluded that during the next few years, ethical standards, moral commitment and high environmental performance will not only become an integral part of the corporate strategy; these will become the way to outperform the industry and reestablish the unique marketing position so badly desired. It will be the only way to develop sustainable advantage" (Capra, F. and Pauli, G., 2007).

This is already happening, and when these values get firmly established in the corporate consciousness as the dominant governing motives, it will be a decisive upward shift in the evolution of business. And those companies who are able to make the shift within them will be the leaders of the future world.

However as we have indicated earlier, to realize the full moral, spiritual and pragmatic potentialities of these higher values, they have to be pursued for their own sake with a clear understanding of their significance for the higher evolution of the corporate world. For ethics, spirituality and ecology have a relationship based on correspondence. Just like modern ecology reveals the laws of physical Nature, the ethical and spiritual values discovered by spiritual traditions of the world reveal the laws and ecology of the moral, psychological and spiritual dimensions of Nature. When an individual or a collectivity lives in harmony with the laws of Nature in all the dimensions physical, mental, moral and spiritual then it is in tune with the rhythms of the creative energies of universal Nature, which in turn is bound to have its positive impact in the inner as well as the outer life of the individual or the community.

The Network Economy

There is one more trend which is described by management pundits like C.K. Prahalad and Kevin Kelly as "Network economy." The rigid boundaries between companies, suppliers, competitors, partners and customers are breaking down. The corporate world as a whole is becoming increasingly interdependent and becoming more and more conscious of it. A single company can no longer pursue its aims independently because most of its process and operations are outsourced to other companies. And the growing trend towards "customization" which means tailoring the product or service to the unique and exact requirement of the individual customer requires close collaboration between suppliers, and customers and sometimes with competitors. Sometimes a company may be at once a supplier and competitor. For example Philips is a competitor to Sony but also its supplier (Prahalad C.K, 2004).

So the strategic attention is shifting from outwitting the competitor by pursuing competitive advantage to providing a great and delightful experience to the customer by collaboration, partnership and networking. According to an interesting study conducted by Business Week Research Services more and more CEO's are turning to collaboration with their business networks to win new networks and address evolving customer needs quickly. This research report, titled "Getting Serious about Collaboration. How companies are Transforming their Business Networks," states that half of the respondents said they were currently counting on partners for research and development, manufacturing, marketing, logistics, distribution, customer service, human resources management. And finally, the report states that this trend towards collaboration is skyrocketing in the small and mid-sized sectors (Express New Service, CEO's Opt for Collaboration, Indian Express, July 20, 2008).

As this collaborative trend becomes more and more dominant, the concept of competitive advantage, as a deliberate and conscious approach to strategy, will become obsolete; it will be replaced by a networking approach in which the ability to discover and forge complementing partnership with other stakeholders and wherever necessary with competitors, to provide qualitatively superior value or experience to the customer, will be the main factor of organizational effectiveness.

Managing Work-force Diversity

There is one more important trend in global business, which belongs to the future world: managing cultural diversity or cross-cultural management. The global business is facing the problem of managing unprecedented cultural and ethnic diversity of the work-force. For example, Honeywell a multi-national company

has a work-force which speak 29 languages, represents 47 cultures and 90 ethnic backgrounds. The initial response of corporate management was what is called as the melting-pot approach. The management assumed that every one irrespective of his or her cultural background will assimilate or integrate himself to the common culture and values of the company or that of the dominant majority. But later, the managements of global businesses have found by hard experience that individual and cultural differences cannot be so easily abolished; people do not want to loose their individual or cultural identities and any attempt to force or subordinate these group identities into a homogenous mass leads only to unnecessary and wasteful conflict. As a result corporate managements all over the world are adopting a more positive and creative approach to cultural diversity as a source organizational effectiveness. The new recognition which is emerging in management thought is that if this rich cultural and ethnic diversity, which can provide multiple cross-cultural view-points and perspectives, can be properly harnessed it will enhance the creative potentialities of the organization as a whole. Thus, as the management writer Stephen Robins points out, the way management looked at employees has evolved from "everyone's the same" to "acknowledging differences," and finally to "valuing differences" as a source of creativity and innovation. For example, Honeywell management strives to create an environment that values individual differences, removes barriers to equal opportunity and empowers employees to develop their talents fully. The various ethnic and cultural groups are encouraged to form advisory councils to identify and resolve common issues, like for example American Asian Council, American Indian Council, Women's Council, Black American Council (Robins S. 1997).

This task of managing cultural diversity is an evolutionary task of the future. For Unity-in Diversity is the goal toward which Nature is moving in the collective life of humanity. So every sincere and creative attempt towards creating a free and harmonious diversity without abolishing or suppressing the uniqueness is a task which is in harmony with evolutionary intentions of Nature. Those institutions or groups, which undertake this task, will gain an evolutionary advantage over others.

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Customer Retention and Profitability
CRM Environment

Bivraj Bhusan Parida and Arup Kumar Baksi

Abstract

Service Quality has emerged as a predominant determinant of customer satisfaction, which in turn affects customer retention and long term profitability. The implementation of Customer Relationship Management philosophy revolves around this customer-centricity where 'Service Quality' is a critical component. Over the years the dimensions of service quality have changed and there are instances where the existing service quality dimensions, including their factor components, have partially or selectively merged to generate new dimensions. This study conducted on State bank of India (SBI) proposes some structural equation models (SEMs) to explore the relationship between the State bank of India service quality, customer retention and profitability.

Service industry has emerged as a dominant contributor towards the growth of global economy. Gaining sustainable competitive advantage over competitors through satisfying customer relationships has become one of the strategic weapons for a modern day service firm (Zeithaml et al, 2000). The quality of relationship with their customers has been established as an important criterion of success of service providers (Panda, 2003) which stimulates customer satisfaction and loyalty (Jones, 2002). Over the years researchers have explored and established significant relationship between service quality and increase in profit (Kish, 2000; Duncan et al, 2002), service quality and customer retention (Ranaweera and Neely, 2003; Caruana, 2002; Bei and Chiao, 2001; Anderson and Srinivasan, 2003, Yen and

Gwinner, 2003, Meuter et al) and service quality and repurchase intention (Levesque and McDougall, 1996; Newman 2001; Caruana, 2002). With the rapid changes sweeping the Indian banking industry, service quality has been redefined for the Indian customers. The service quality is now an encapsulation of customer-centric operation that concentrates on nurturing relationship between the internal customers with the external customers with tech-nology providing the interface. The popular acronym for this concept is 'Customer Relationship Management, (CRM.') The State bank of India (SBI) is the largest public sector bank in India with tremendous penetration of branch network and good-will in the market. Since the late 1990s, SBI started its process of automation which ended by the year 2007 in

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several phases. The objective of this automation was to be more customers friendly, to enhance the perceived service quality, to retain the valued customer and to ensure long-term profitability by providing the customers customized services and value-added products.

Review of Literature

Service quality, within the personal interaction environment, has well established definitions in the literature, but it is only recently that it has been applied to the e-commerce environment *(Santos 2003)*. The technology-driven service quality research has been limited to Customer Relationship Management (CRM) rather than metrics of service quality *(Buckley 2003)*. *Parasuraman et al. (2005)* discussed automated service quality within the services that are delivered through web sites. A significant number of studies viewed the dimensions of e-service quality as antecedents of e-satisfaction *(Dina et.al, 2004)*. *Wolfinbarger and Gilly (2002). Yang et.al (2004)* have suggested six key technologically enhanced service quality dimensions-reliability, access, ease of use, attentiveness, security and credibility employed by internet purchasers to evaluate e-tailors' service quality. *Santos (2003)* further explained that technology-enabled service quality consists of incubative and active dimensions, and each dimension composed by five or six determinants. Numerous researchers have also highlighted the independent effect of perceptions on service quality evaluations and have questioned the use of disconfirmation paradigm as the basis for the assessment of service quality *(Carman, 1990; Bolton and Drew 1991a, Babakus and Boller, 1992; Cronin and Taylor, 1992)*. The superiority of performance-only measures over difference-score measures has been demonstrated in numerous studies including those by *McAlexander et al (1994), Hahm et al. (1997), Avkiran (1997, BANKSERV), Lee et al (2000)* and by *Brady et al (2002)*.

The relationship between service quality and retention has been extensively investigated both theoretically and empirically over the past few years in the traditional service context *(Ranaweera and Neely, 2003; Caruana, 2002)*. In this context, service quality has usually been considered an important component of establishing and retaining customers *(Bei and Chiao, 2001)*. However, with the rapid diffusion and adoption of information technology, use of automated channels as a medium of interaction, in addition to the traditional banking services has become very popular *(Lang and Colgate, 2003)*. Internet banking as a means of delivering traditional banking services has become an important

way to retain customers, increase market share, create a new range of products, and change the cost structure of retail banking *(Al-hawari and Ward, 2004; Santos, 2003; Gardener, Howcroft and Williams, 1999)*. Retention of customers can be accomplished through automated services by providing superior service quality *(Reichheld and Schefter, 2000)*. However, the researchers have found limited empirical research examining the relationship between internet banking service quality and customer retention. A few studies investigating the relationship between web site attributes and customer retention in different contexts found a positive relationship between the two variables *(Anderson and Srinivasan, 2003; Yen and Gwinner, 2003; Meuter et al. 2000)*. In the banking sector, customers tend to use different service delivery channels in a complementary way; consequently, developing a relationship with the customer can be achieved from any one of these media and more likely, a combination of them *(Al-hawari, Hartley and Ward, 2005)*. Since banks around the world are increasingly utilising internet banking to supplant traditional products and service delivery processes, it was necessary to compare the influence of each service quality context (internet and tellers) on customer retention. The retention factor stimulated the companies to identify the most valued customer who significantly contributed to the profit-line of the same. Studies conducted by Vlèková and Bednaøíková (2007) suggested that customer retention over their lifetime will significantly contribute to enhance company's profitability. The service organizations, in particular, delved deep into the calculations of Customer Life-Time Value (CLTV) to identify the most valued customers on the basis of their net-worth to the company. According to Nguyen et al. (2007), the precursor of a successful and sound CRM initiative is to build a model of profitability for each and every customer. The researchers used an example cited by Wreden (2004): *Customer Profit = (gross revenues) – (customer allowances) – (credits and rebates) – (product costs) – (channel costs) – (cost to serve) – (administrative costs)*. The Customer Lifetime Value concept allows a service organization to decide how much it's worth spending on each customer (Gupta, Hanssens et al., 2006) Zikmund (2003) proposed four factors which were considered to be key drivers of customer life-time value:

(i) Profit Margin   :   Annual profit minus cost to serve the customer.

(ii) Retention Rate :   Estimation of total number of customers who did repeat purchases.

(iii) Discount Rate :   Current cost of capital.

(iv) Time : The time estimation of the customer's likely association with the company.

The CRM environment has realigned the relationship between service quality, customer retention and profitability in the banking context. Several studies were done in this area which took the help of structural equation modeling. Wei (2009) undertook a study to construct a measure in service quality for Malaysian banks, Mishra et al (2010) studied the service quality attributes affecting customer satisfaction in banking sector in India using structural equation modeling, and Kheng et al (2010) studied the impact of service quality on customer loyalty.

Methodology

A self-administered structured questionnaire was used to collect the data. The complete list of the SBI bank branches of Kolkata was obtained from the website (http://www.sbi.co.in, accessed on 12-09-2007). The branches thus obtained were arranged alphabetically. The primary filter that was applied to screen branches was the mandatory presence of three service features: (i) already installed CBS, (ii) already offered ATM services and (iii) activated and already offered Internet enabled banking services (i-banking). Every odd branch was picked up for the study from the sub-list (which was also arranged alphabetically) thus prepared by applying the filtration technique. A total of 10 SBI bank branches were finally selected for the study. The researcher personally visited each and every SBI branch premise (under study) and with due permission of the branch manager, customers were identified for the study. Every third customer leaving the bank premise after their interaction with the bank was considered for the study. The researcher distributed one thousand (1000) questionnaires targeted towards customers of State Bank of India (SBI) in total across all the branches of the same. The pattern of obtained questionnaires completed in all form is presented in a tabular format: (Table-1).

Table 1: Pattern of usable response generated from Customers

Sl. No.	Metro	No. of Questionnaire distributed to customers	Response generated	Usable response	% of usable response
1	Kolkata	1000	826	712	71.20%

Modified SERVQUAL scale was used (after required modification done through pilot-testing) with a 7-point Likert scale to obtain data from the respondents with regard to their expectation and perception level of service quality offered by their bank (SBI). Data were also obtained from the respondents with regard to their perception about the service quality offered by SBI since the adoption and implementation of CRM philosophy by SBI during their post-automation phase.

The three primary variables are defined in the study as:

1. *Service Quality*: Henceforth nomenclated as Perceived Service Quality [PSQ], it represents the mean of Perception Scores obtained from the respondents on a 7 point Likert Scale using SERVQUAL instrument.

2. *Customer Retention*: Respondents (customers) associated with their bank (State bank of India) for more than 1 year.

3. *Profitability:* Profitability has been defined here as the investments made by the respondents (customers) in the cross-selling/up-selling products/services offered by their bank (State Bank of India) and has been estimated on the basis of number of such investments made as on the span of survey.
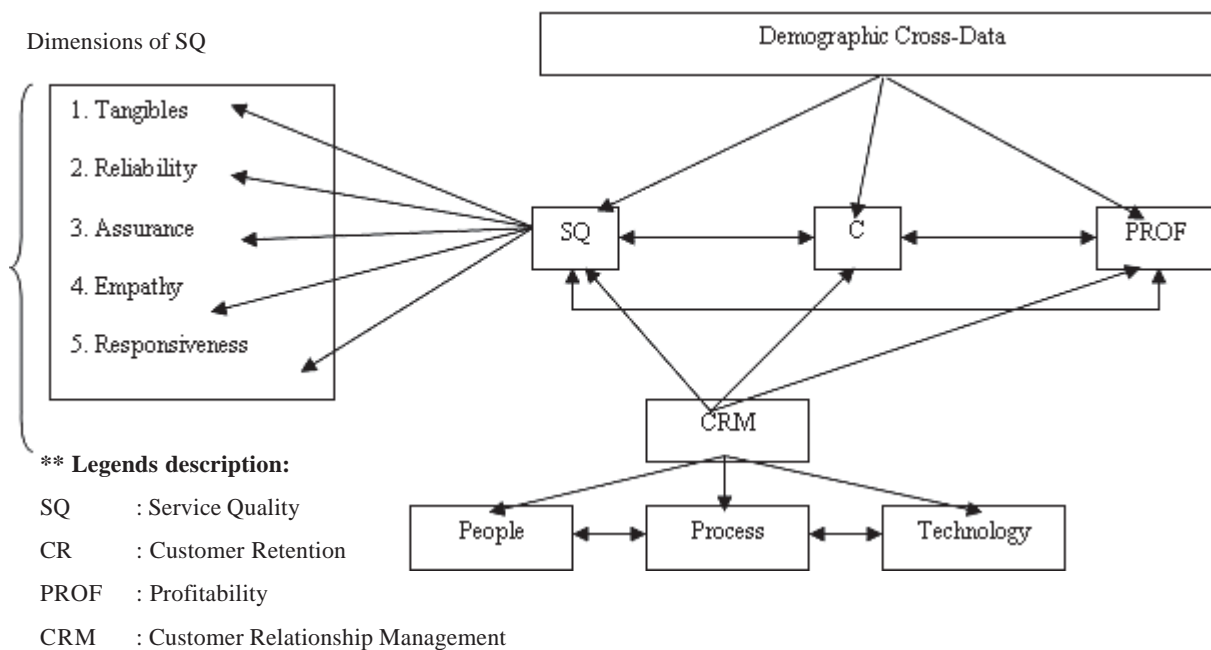
Conceptual Model Development

The researcher proposes a conceptual model based on the structural relationship between the variables under study. The researcher aims to examine the logical connection between the variables and the assumptions and propositions used to develop the explanatory framework.

Analysis and Discussions

The demographic data obtained from the respondents is presented in Table-2. The data obtained (expectation scores) from the

Fig.1: Proposed Conceptual Model

Dimensions of SQ

1. Tangibles
2. Reliability
3. Assurance
4. Empathy
5. Responsiveness

** Legends description:

SQ   : Service Quality

CR   : Customer Retention

PROF   : Profitability

CRM   : Customer Relationship Management

Table 2: Demographic Profile of the Respondents (Customers).

Demographic Variable	Demographic Characteristics	Kolkata Frequency	%
Gender	Male	497	69.80%
	Female	215	30.20%
Age	d" 21 years	32	4.49%
	22-32 years	321	45.08%
	33-43 years	216	30.34%
	44-54 years	68	9.55%
	e" 55 years	75	10.54%
Income	d" Rs. 14999.00	10	1.40%
	Rs. 15000-Rs. 24999.00	247	34.69%
	Rs. 25000-Rs. 44999.00	367	51.54%
	e" Rs. 45000.00	88	12.37%
Occupation	Service [govt./prv]	399	56.03%
	Self employed	132	18.54%
	Professionals	65	9.13%
	Student	23	3.23%
	Housewives	57	8.00%
	Others [retd., VRS etc]	36	5.07%

Educational Qualification	High school	3	0.43%
	Graduate	472	66.29%
	Postgraduate	205	28.79%
	Doctorate & others (CA, fellow etc)	32	4.49%

respondents (customers) via the structured questionnaire using the modified SERVQUAL instrument was put to Exploratory Factor Analysis (EFA) using principal axis factoring procedure. The analysis was constrained a prior to five factors and each scale was rotated orthogonally through the VARIMAX process with an objective to reduce data and to study the factor loadings/cross-loadings in various components. The objective to carry out the EFA is to identify whether items of SERVQUAL already grouped by the PZB study can be regrouped under a separate nomenclature on the basis of the factor loadings/cross-loadings as per the rotated component matrix obtained thereof. Cronbach's α has been obtained to test the reliability of the data and Kaiser-Meyer-Olkin (KMO) for sample adequacy and Barlett's Sphericity Test has been conducted. The Rotated Component Matrix is presented in Table-3.

The Cronbach's Coefficient alpha (Table-4) was found significant enough across the five dimensions and therefore it is reasonable to conclude that the internal consistency of the SERVQUAL instrument used was adequate. The KMO measure of sample adequacy (0.899) indicates a high-shared variance and a relatively low uniqueness in variance (Kaiser and Cerny, 1979). Barlett's sphericity test (Chi-square=4277.687,

p<0.001) indicates that the distribution is ellipsoid and amenable to data reduction (Cooper and Schindler, 1998).

The exploratory factor analysis with principal component analysis and varimax rotation didn't justify the 'Assurance' dimension due to very low factor loadings/cross loadings (<0.500) and poor reliability (Crobach's alpha 0.266). Therefore the assurance dimension was discarded for the study. The modified SERVQUAL had the items related to technology usage in the banks, the augmented processes concerning service delivery, cross-selling and up-selling integration with the core banking service which scored considerably and consistently high across the four metros in terms of factor loadings and cross loadings was also found to be significant i.e. >0.700 (significant as per recommendations of Nunnally, 1978). These items loaded in a specific component across all the four metros were nomenclated as 'Convenience.' The five dimensions of service quality thus retained to obtain the perception score from the respondent are: (i) Tangibles (4 items), (ii) Reliability (5 items), (iii) Convenience (6 items), Empathy (4 items) and Responsiveness (3 items). Application of exploratory factor analysis, has therefore, reduced a 26 item scale into a 22-item scale.

Table 3: Rotated Component Matrix to obtain the factor loadings and cross loadings for Kolkata Metro

Rotated Component Matrix on respondents' Expectation Variables (Kolkata)						
	Component					Dimension naming
	1	2	3	4	5	
Modern Looking Equipments					.627	
Professional Appearance of Employees					.878	
Visible display of Materials					.888	*Tangibility*
Physical Comfort Level of Customers					.903	
Convenient Business Hour		.933				
Convenient location		.676				
Electronic Network [i-banking and mobile banking]		.881				
Networking of Branches		.610				*Convenience*
ATM Services [Network]		.725				
Cross-selling/Up-selling products/services integration		.752				

Error free Records	.692					*Reliability*
Exact Information Provided	.590					
Safety of Transactions	.631					
Knowledge of Employees	.639					
Confidentiality of Records and						
Information of Customer	.745					
Prompt Service to the Customers			.826			
Willingness to Help			.753			*Empathy*
Deals Public Situation with Care			.601			
Understands Customers' Specific Needs			.731			
Service Commitment				.757		
Involvement & Interest to solve						
customers' problems				.750		
Instill Confidence in Customers				.716		
Initial Eigenvalues	4.262	3.644	2.497	2.308	1.979	*Responsiveness*
% of Variance	16.391	6.322	5.758	5.032	4.92	
Cumulative %	16.391	22.713	28.471	33.503	38.424	

Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 13 iterations.

Table 4: Reliability and Sample Adequacy Measures

Kolkata		Component				
		1	2	3	4	5
	KMO measure for sampling adequacy	0.899				
	Cronbach's á	0.826	0.831	0.788	0.719	0.759

Table 5: Confirmatory Factor Analysis to assess Dimensionality, Convergent and Discriminant Validity

SERVQUAL Factors	Items	Kolkata		
		SL	t-Values	á-values
Tangibles	I1	0.69	7.11	0.760
	I2	0.87	9.71	
	I3	0.82	9.28	
	I4	0.89	10.01	
Reliability	I5	0.69	8.69	0.726
	I6	0.59	6.06	
	I7	0.63	8.23	
	I8	0.64	8.27	
	I9	0.74	8.89	

Convenience	I10	0.92	11.32	0.831
	I11	0.67	8.51	
	I12	0.88	9.44	
	I13	0.60	6.81	
	I14	0.71	7.26	
	I15	0.73	8.81	
Empathy	I16	0.82	9.19	0.788
	I17	0.75	9.01	
	I18	0.60	6.46	
	I19	0.73	8.51	
Responsiveness	I20	0.76	9.15	0.719
	I21	0.75	9.08	
	I22	0.71	6.19	

Confirmatory Factor Analysis (CFA) was then applied (using LISREL 8.80) to the five dimension measurement model to test the dimensionality, and convergent and discriminant validity. As shown in the Table-5, the results of confirmatory factor analysis demonstrated a moderate fit of the five-dimensional measurement model to the data on the basis of a number of goodness of fit statistics (presented in Table:6). The factor loadings are higher than the level of 0.70 (significant as per recommendations of Nunnally, 1978). Further to this the t-values are higher than 2.00 and the reliability coefficient α is also significant for the five dimensions (Table: 5).

Therefore the scale with regard to reliability, convergent, dimensionality, and discriminant validity is acceptable to conduct the next phase of the study i.e. to obtain the perception score from the respondents (customers) with the help of this five-dimension-22-items SERVQUAL instrument. The LISREL output for data convergence is exhibited via Figure-1.

To test the predictive superiority of the service quality dimensions namely tangibles, reliability, convenience, empathy and responsiveness towards predicting the Perceived Service Quality (PSQ) of the respondents (customers), Multiple Regression was performed to obtain the R^2 and adjusted R^2. The PSQ represents the mean score of perception along all the 22 items of the SERVQUAL instrument as obtained from the survey across the four metros. The result of multiple regression analysis is presented in Table-7, Table-8 and Table-9. The R^2 and Adjusted R^2 values

(Table-7) are 0.601 and 0.600 respectively which indicate that the five independent variables namely tangibles, reliability, convenience, empathy and responsiveness measures 60.10 percent of the variation in Perceived Service Quality (dependent variable) which is considered to be significant enough for predictability of the model.

The collinearity statistics (Table-8) suggest that the 'Structural Model for Path Analysis' is worth pursuing as the 'tolerance' value is well over 0.200 for each of the independent variable suggesting absence of correlation. (VIF=1/tolerance).

The standardized regression coefficient between the SERVQUAL dimensions and PSQ were found to be statistically significant (Table-9) (p≤0.001).

Bivariate correlation was applied to obtain the Pearson coefficient of correlation to understand the relationship between (i) Perceived Service Quality (PSQ) and Customer Retention (CR), (ii) CR and Profitability (PROF) and (iii) SQ and PROF. The results of this correlation study are presented in the tabulated form (Table-10, Table-11 and Table-12).

The Pearson coefficient of correlation (r) is positive and significant between PSQ and CR [.429**, correlation is significant at 0.05 level (2-tailed)]. The 'r' value is also positive and significant between CR and most of the Profitability instruments (both traditional and new) at both 0.05 and 0.01 level (2-tailed).

Table 6: Godness-of-fit indices of the Confirmatory factor Analysis conducted.

Goodness of Fit Indices	Kolkata
Chi-square	84.38
Degrees of freedom (df)	15.00
Root Mean Square Error of Approximation RMSEA	0.27
Goodness of Fit Index (GFI)	0.91
Adjusted Goodness of Fit Index (AGFI)	0.90
Normed Fitness Index (NFI)	0.60
Non-Normed Fitness Index (NNFI)	0.82
Parsimony Goodness of Fit Index (PGFI)	0.76
Comparative Fit Index (CFI)	0.87
Incremental Fit Index (IFI)	0.90
Standardized Root Mean Square Residual (SRMR)	0.21
Expected Cross-Validation Index (ECVI)	2.93
Minimum Fit Function Value	1.43
P-value for test of Cross-fit (RMSEA <0.05)	0.10
90% confidence interval for RMSEA	0.0; 0.77

Fig-2: Data convergence between the service quality dimensions (observed variables) and Service Quality (latent variable depicted as 'SERVICE' in the figure)

Chi-Square=44.38, df=10, P-value=0.02992, RMSEA=0.266, GFI=0.91, AGFI=0.90
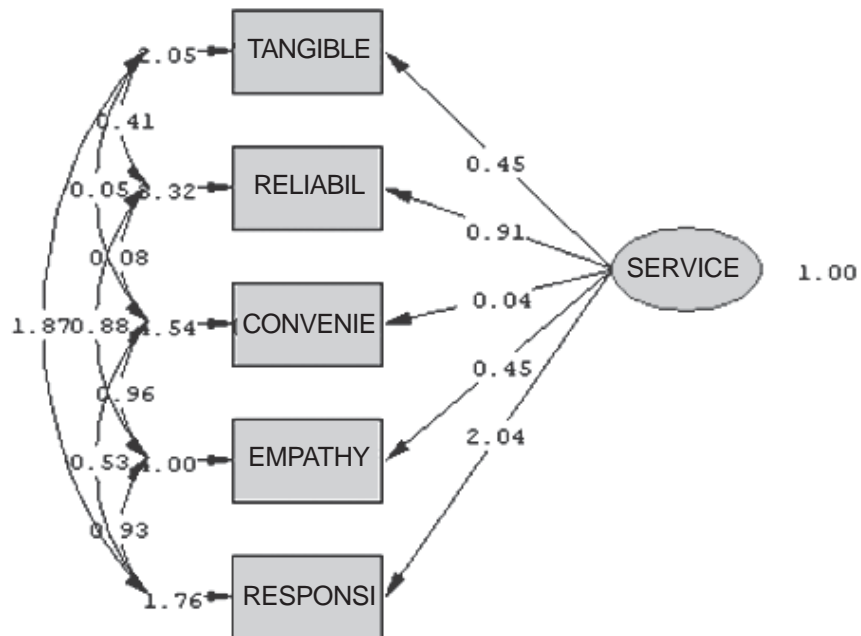
Table 7: R^2, Adjusted R^2 and ANOVA result

Metros	R^2	Adjusted R^2	F-value	Significance
Kolkata	0.601	0.600	194.523	0.000

Table 8: Collinearity Statistics – Measure of Tolerance and VIF

Metro	Tangibilty		Reliability		Convenience		Empathy		Responsiveness	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Kolkata	0.875	1.142	0.799	1.250	0.495	2.020	0.572	1.748	0.541	1.840

Table 9: β coefficient values obtained through MRA for the four metros

Metro	Tangibiles			Reliability			Convenience			Empathy			Responsiveness		
	β	t-value	Significance	β	t-value	Significance	β	t-value	Significance	β	t-value	Significance	β	t-value	Significance
Kolkata	0.23	1.581	0.001	0.45	14.58	0.000	0.34	7.08	0.000	0.32	5.03	0.001	0.39	7.90	0.000

a. Predictors: (Constant) Tangibles, Reliability, Convenience, Empathy, Responsiveness,   b. Dependent variable: PSQ

Table-10: Pearson coefficient of correlation between Perceived Service Quality (PSQ) and Customer Retention (CR)

			CR	PSQ
Kolkata	CR	Pearson Correlation	1	.429**
		Sig. (2-tailed)		0.008
		N	712	712
	PSQ	Pearson Correlation	.429**	1
		Sig. (2-tailed)	0.008	
		N	712	712

*Correlation is significant at 0.01 level (2-tailed),   **Correlation is significant at 0.05 level (2-tailed)

Table-11: Pearson coefficient of correlation between Customer Retention (CR) and Profitability instruments offered by SBI

Metro	Variables	FD	Recurring	Bancassurance	Mutual Fund	Cards	Home Loan	Personal Loan	Car Loan	Educational Loan	Business Loan
Kolkata	CR	0.377**	0.288**	0.291**	0.264**	0.123**	0.081*	0.011	0.109*	0.009	0.079*

*Correlation is significant at 0.01 level (2-tailed),   **Correlation is significant at 0.05 level (2-tailed)

Table-12: Pearson coefficient of correlation between Perceived Service Quality (PSQ) and Profitability instruments offered by SBI

Metro	Variables	FD	Recurring	Bancassurance	Mutual Fund	Cards	Home Loan	Personal Loan	Car Loan	Educational Loan	Business Loan
Kolkata	PSQ	0.278**	0.244**	0.105**	0.278**	0.160**	0.079*	0.128**	0.085*	0.024	0.140**

*Correlation is significant at 0.01 level (2-tailed), **Correlation is significant at 0.05 level (2-tailed)

Table-13: ANOVA Table

Kolkata	Model		Sum of Squares	df	Mean Square	F	Sig.
	1	Regression	16.965	3	5.655	42.890	.000ᵃ
		Residual	93.350	708	.132		
		Total	110.315	711			

a. Predictors: (Constant), People, Process, Technology, b. Dependent variable: CPSQ

Table-14: Regression Coefficients

Metros	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Correlations		
			B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part
Kolkata	1	(Constant)	3.353	.147		22.870	.000	3.066	3.641			
		PEOPLE	.216	.020	.344	9.258	.000	-.009	.040	.048	.047	.043
		PROCESS	.217	.022	.356	9.979	.000	.174	.259	.380	.351	.345
		TECHNOLOGY	.155	.022	.392	10.567	.000	.013	.097	.178	.096	.089

a. Dependent variable: PSQ

To assess the strength relationship and predictive capacity of the principal components of Customer Relationship Management (CRM) namely People, Process and Technology with respect to Perceived Service Quality (PSQ), the researcher used multiple regression analysis. The results are presented in tabulated format (Table-13, Table-14, Table-15 and Table-16). The R^2 and Adjusted R^2 values are 0.354, and 0.353 respectively. ANOVA results suggest that significance has been achieved (0.000) for the Model. The standardized regression (β) coefficient value and the t-values are found to be significant (**p$\leq$ 0.001).**

To test whether the demographic variables are having significant effect on perceived service quality (PSQ), the P-E score obtained during SERVQUAL Gap analysis was used for all the five dimensions of service quality namely tangibles, reliability, convenience, empathy and responsiveness. One-Way ANOVA was conducted for the analysis. The ANOVA results are presented in the Table-17.

Model Development

The measured/observed variables of the structural equation

Table-15: Model Summary of MRA across the 4 metros.

Metros	Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
						R Square Change	F Change	df1	df2	Sig. F	
Kolkata	1	.392[a]	.354	.353	.36311	.001	42.890	3	708	.000	1.794

a. Predictors: (Constant), People, Process, Technology,   b. Dependent variable: PSQ

Table-16: Collinearity Statistics- Measure of tolerance and VIF

Metros	People		Process		Technology	
	Tolerance	VIF	Tolerance	VIF	Tolerance	VIF
Kolkata	0.875	1.142	0.799	1.250	0.495	2.020

Table:17- ANOVA Profile by dimensions of service quality to demographic cross-factors

Metro	Servqual Factors	Gender		Age		Income		Qualification		Occupation	
		F-Score	P-Score	F-Score	P-Score	F-Score	P-Score	F-Score	P-Score	F-Score	P-Score
Kolkata	Tangible	2.695	0.024	0.156	0.960	1.005	0.379	4.657	0.005	0.946	0.621
	Reliable	2.316	0.031	2.729	0.028	4.629	0.002	7.998	0.001	3.046	0.006
	Convenience	3.621	0.011	1.261	0.284	8.462	0.000	6.271	0.001	3.426	0.005
	Empathy	1.234	0.161	1.863	0.115	2.111	0.018	1.629	0.139	2.005	0.076
	Responsive-ness	1.641	0.101	1.049	0.315	1.925	0.086	1.076	0.325	2.162	0.054

model developed are the service quality dimensions (tangibles, reliability, convenience, empathy and responsiveness), present association of the customers with their bank [(four range of associations: $\leq$ 5 years (RET_1), 6-13 years (RET_2), 14-20 years (RET_3) and $\geq$ 21 years (RET_4)], three broad areas of profit generating investments [traditional investments namely FD and RD ($PROF_1$), loan instruments ($PROF_2$) and new cross-selling and up-selling products/services ($PROF_3$) , demographic cross-factors (gender, age, income, occupation and educational qualifications), and the three principal components of customer relationship management (people, process and technology). The latent variables were identified by adopting exploratory factor analysis (EFA) with orthogonal rotated solution whereby components having eigen values > 1 are considered. The latent variables thus identified are (i) Service Quality, (ii) Customer

Retention, (iii) Profitability and (iv) CRM. Confirmatory factor analysis was used to understand the dimensionality, convergence and discriminant validity. LISREL software was used for further calibration and to cross-validate the convergence of the models. Figures 3-9 represent the model convergence.

After the identification of the latent variables, LISREL software was used to draw the path diagrams (Fig. 10). The dependencies of the models are denoted by the arrows. The double-curved arrows indicate co-variability of the latent variables. The residual variables (error variances) are indicated by $\varepsilon_1, \varepsilon_2, \varepsilon_3,$ etc. The regression weights are represented by λ The co-variances are represented by β. To provide the latent factors an interpretable scale; one factor loading is fixed to 1 (Hox and Bechger).
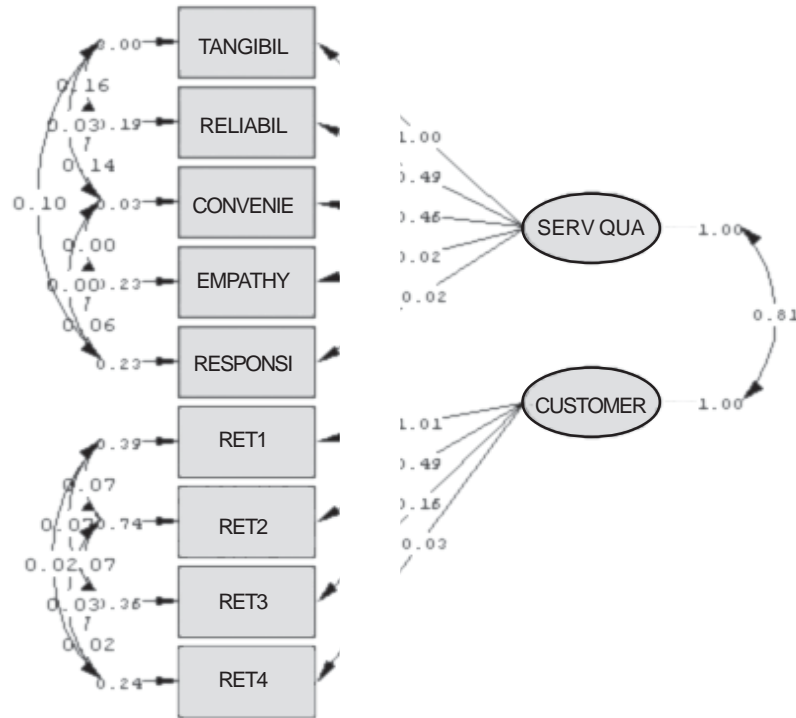
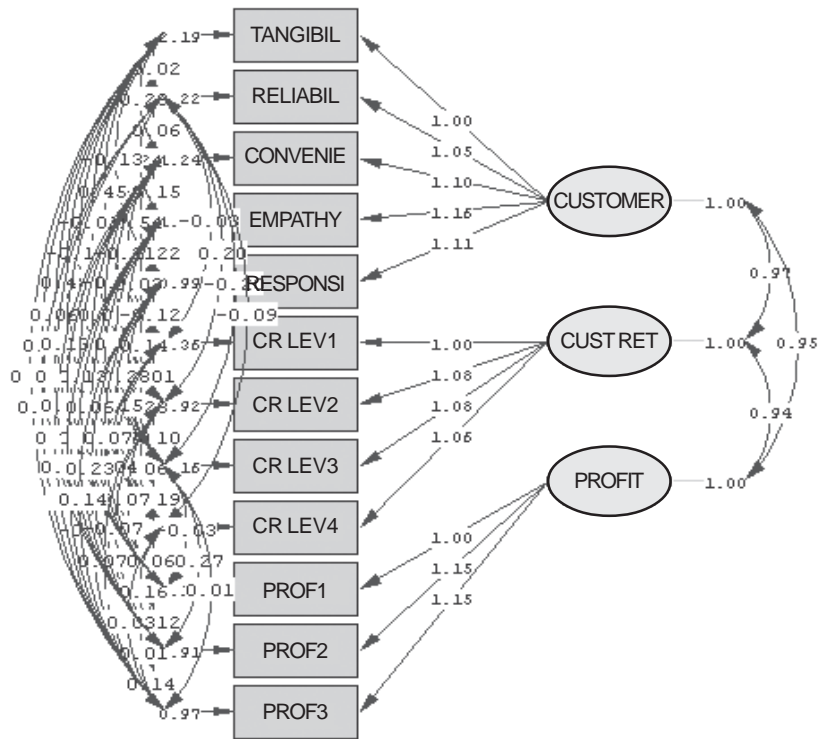**Fig-3: Convergence – SQ (dimensions) and Profitability (ranges) and (factors)**
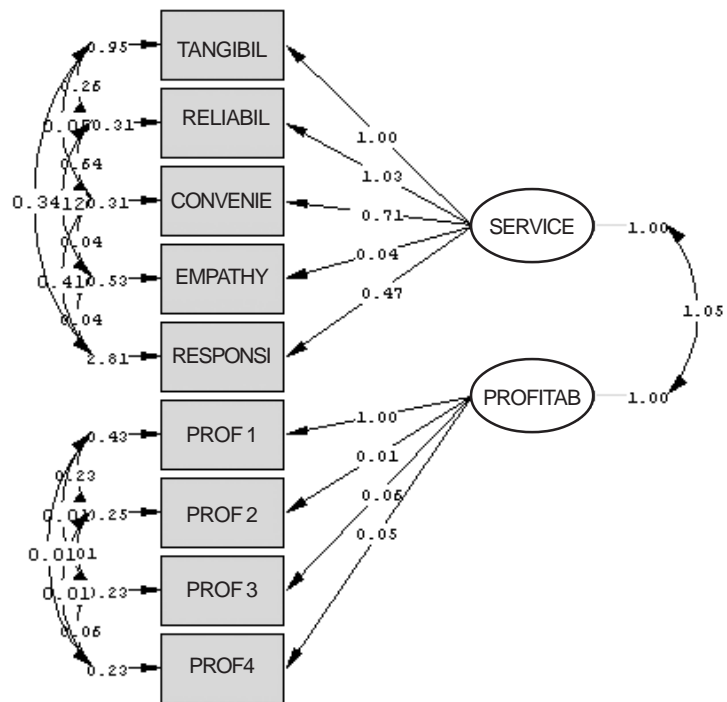
Fig- 4: Convergence – Customer Retention Profitability (factors)
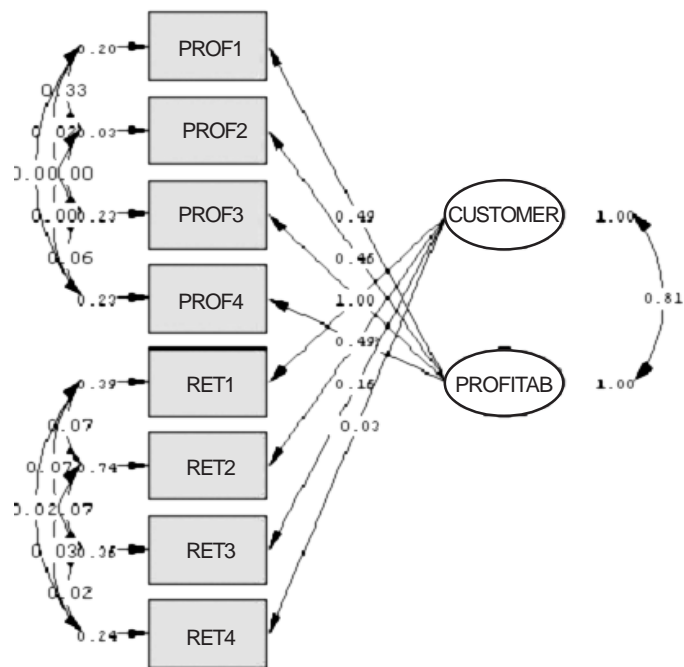
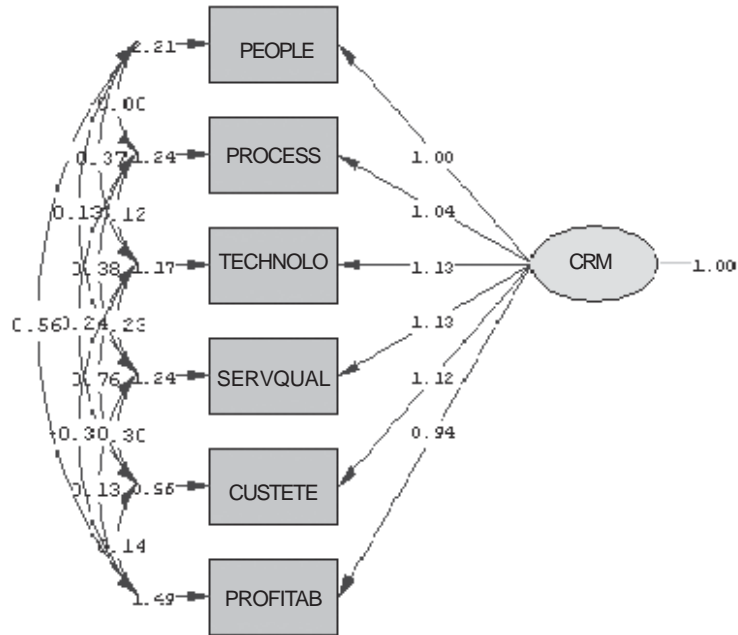**Fig - 5: Convergence - SQ (dimensions) and Customer Retention**
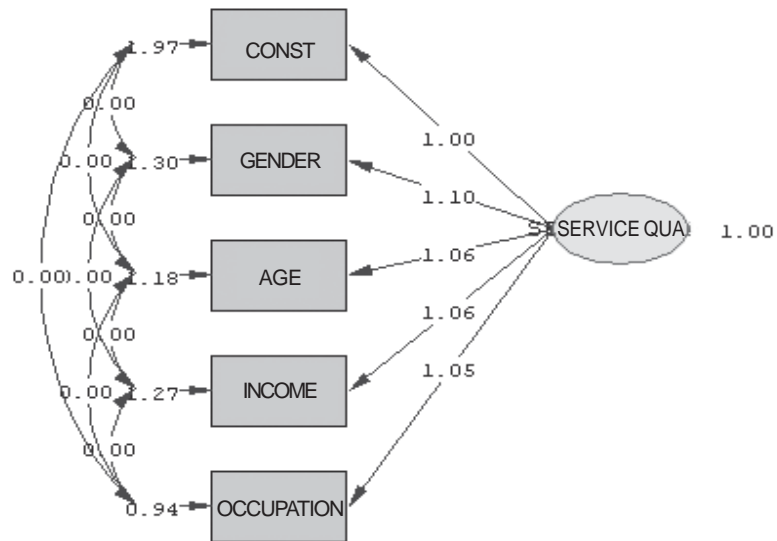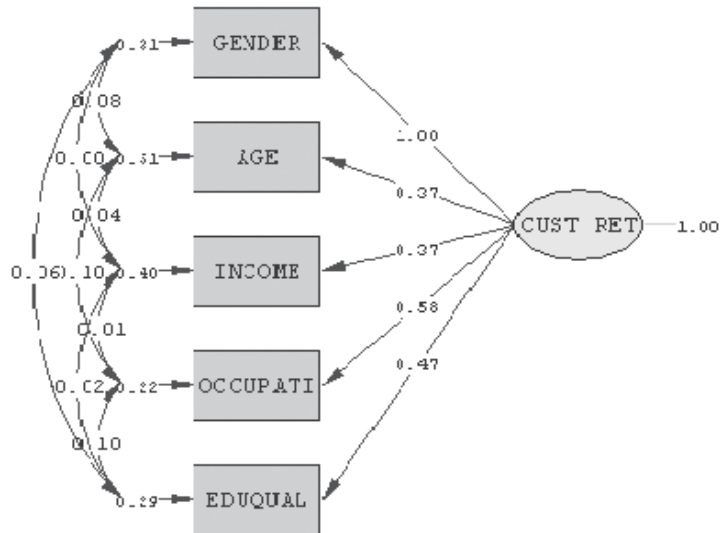

Fig- 6: Convergence - All three latent constructs

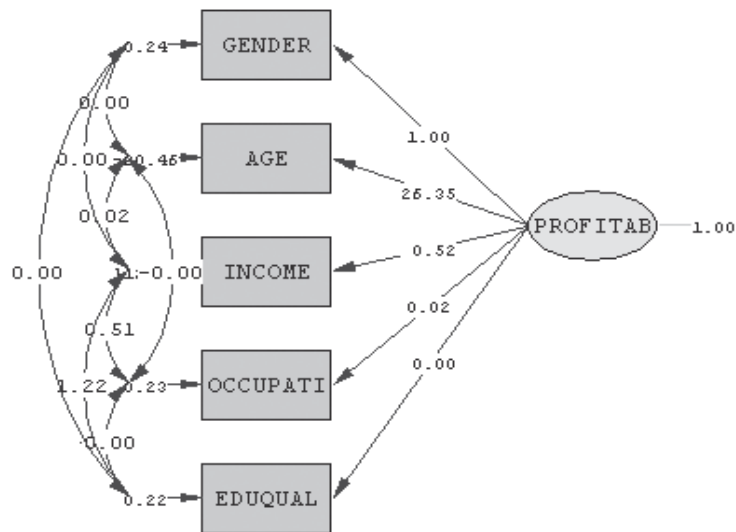**Fig - 7: Convergence - CRM and its components and three primary variables**

Fig - 8: Convergence- SQ with Demographic factors

Fig- 9: Convergence- Customer Retention with Demographic Factors

Fig.10: Convergence -Profitability with Demographic Factors

The goodness of Fit indices are tabulated in Table-18. The probability value of Chi-square is more than the conventional 0.05 level (P=0.20) indicating an absolute fit of the models to the data. The values of the goodness of fit indices are significantly low supporting the quality of the model fit to the data.

Conclusion

The Indian banking sector has metamorphosed to fit itself to the new-age banking system. The public sector banks are shading off their age-old silos based functional and operational system and

Fig - 10: Structural Equation Model showing the Relationship between the variables
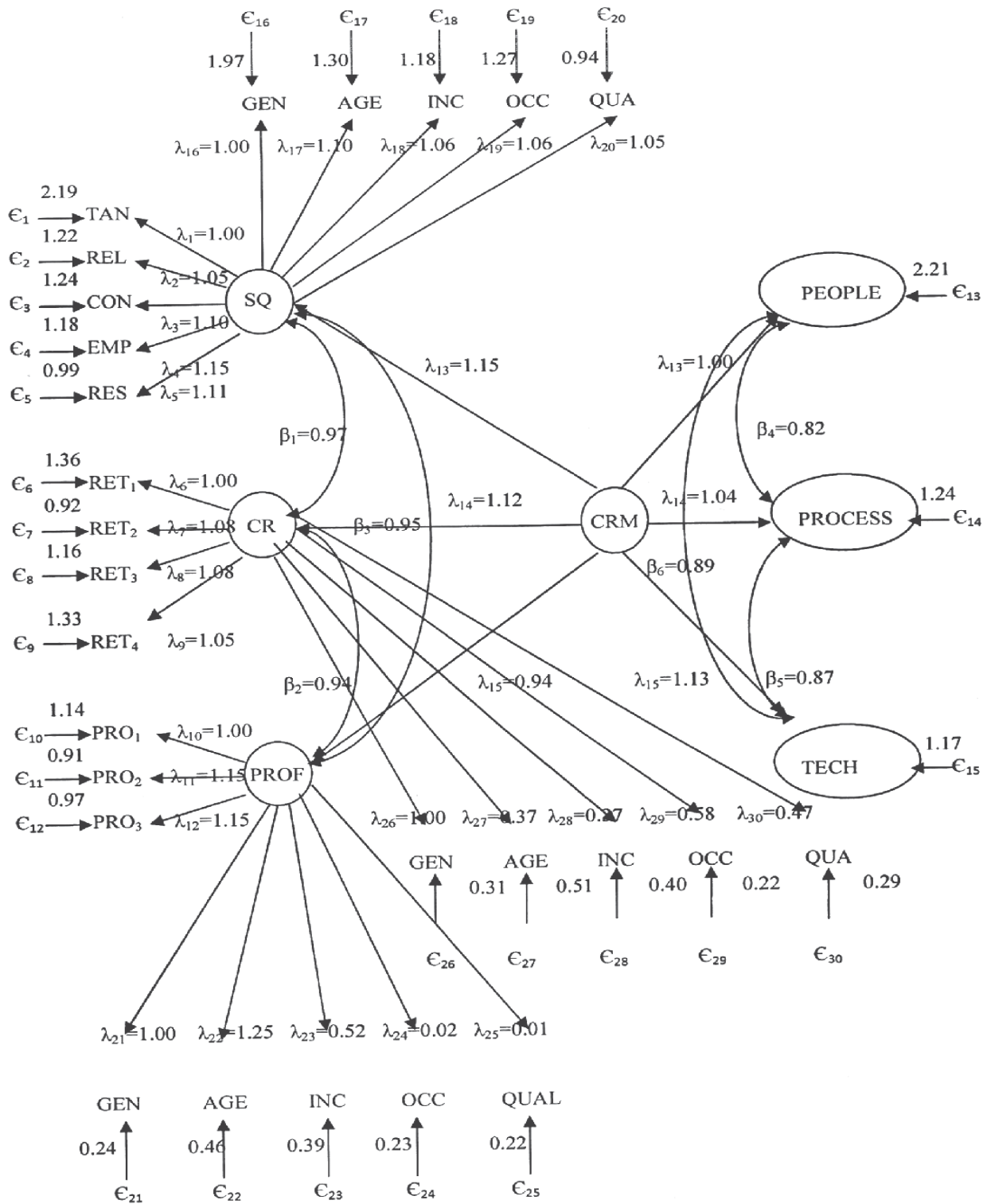
Table-18: Chi-square value, degrees of freedom and goodness of fit indices

Indices	Values
Degrees of Freedom	136
Minimum fit function Chi-Square	1241.37 (P = 0.20)
Goodness of Fit Index (GFI)	0.95
Adjusted Goodness of Fit Index (AGFI)	0.88
Parsimony Goodness of Fit Index (PGFI)	0.40
Comparative Fit Index (CFI)	0.91
Incremental Fit Index (IFI)	0.93
Relative Fit Index (RFI)	0.56
Normed Fit Index (NFI)	0.77
Non-Normed Fit Index (NNFI)	0.83
Standardized RMR	0.080
Root Mean Square Error of Approximation (RMSEA)	0.051
Expected Cross-Validation Index (ECVI)	0.77

migrating to the digital platform where customer 'touch-points' are created with multi-channel integration. Implementation of Core Banking Solution and adoption of CRM philosophy has given a new face to SBI. With its huge branch network, customer base, shareholder base, stake holder base, government alliances and associate banks, SBI boasts of service quality in terms of reliability. By integrating technology as a driver to provide a wide array and value augmented services it has enhanced the convenience factor for its customers. SBI has taken the help of mySAP ERP to streamline its human capital and align them to a customer-centric model with customer retention as the focal objective. SBI has broadened its spectrum of products and services by incorporating cross and up-selling products/services divisions namely SBI Life (Bancassurance), SBI Mutual Fund, SBI Cards, SBI DFHI Ltd. (for fixed income securities) etc. This expansion of product/service line by SBI has provided the customers with more profit-inducing investment instruments. The CRM application integrates 'People' (employees/service providers), 'Process' (delivery of services) and 'Technology' (the driver) to ensure flawless convenient service to the customers. The structural equation modeling explains the relationship between service quality, customer retention and profitability in the newly-adopted CRM environment of SBI and it has also taken into consideration the demographic cross-factors to understand their influence on these relationships. The model provides a strategic view to the service provider about the intricate relationship that exists between them and the customers and also allows them to realize the critical junction points of the constructs that should remain in focus.

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Dissemination and Utilisation
Knowledge

R. Senapathi

<div style="writing-mode: vertical">**A b s t r a c t**</div>

This paper explores mechanisms for disseminating knowledge, It does this by first defining what knowledge is, and followed by a discussion on different media through which knowledge may be disseminated. Knowledge transfer has always existed in various forms like on-the-job peer discussions, formal apprenticeship, corporate libraries, professional training and mentoring programs. With today's widespread use of ICT and Internet, knowledge is j not present just in books but is available at the click of a button from any geographical location. With computers becoming more widespread, specific adaptations of technology such as knowledge bases, expert systems, and knowledge repositories have been introduced to further simplify the process.

U nlike capital and labour, *knowledge* strives to be a public good. Once knowledge is discovered and made public, there is zero marginal cost to sharing it with more users. Secondly, the creator of knowledge finds it hard to prevent others from using it. Instruments such as trade secrets protection and patents, copyright, and trademarks provide the creator with some protection.

There are different kinds of knowledge that can usefully be distinguished. *Know-what*, or knowledge about facts, is nowadays diminishing in relevance. Know-why is knowledge about the natural world, society, and the human mind. *Know-who* refers to the world of social relations and is knowledge of who knows what and who can do what. *Know-where* and *know-when* are becoming increasingly important in a flexible and dynamic economy. *Know-how* refers to skills, the ability to do things on a practical level.

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The implication of the knowledge economy is that there is no alternative way to prosperity than to make learning and knowledge-creation of prime importance. There are different kinds of knowledge. "Tacit knowledge" is knowledge gained from experience, rather than that instilled by formal education and training. In the knowledge economy tacit knowledge is as important as formal, codified, structured and explicit knowledge.

A country's capacity to take advantage of the knowledge economy depends on how quickly it can become a "learning economy.' Learning means not only using new technologies to access global knowledge, it also means using them to communicate with other people about innovation. In the "learning economy" individuals, firms, and countries will be able to create wealth in proportion to their capacity to learn and share innovation.

At the level of the organisation or institutional learning must be continuous. Organisational learning is the process by which organisations acquire tacit knowledge and experience. Such knowledge is unlikely to be available in codified form, so it cannot be acquired by formal education and training. Instead it requires a continuous cycle of discovery, dissemination, and the emergence of shared understandings.

Data, Information and Knowledge

Before we understand what knowledge means, let us understand the knowledge hierarchy. In common parlance, it is often referred to as DIKW hierarchy. The four levels that we deal with are data, information, knowledge, and wisdom (Refer Fig 1.1).

Data may be regarded as a commodity, value is added to data when they are processed into information and in turn information gains further value when it is applied in new contexts becoming transformed into enterprise specific knowledge. Knowledge is also defined as information to which experience, context, interpretation and reflection are added by individuals so that it becomes a high value form of information. In these circumstances knowledge can be utilized in novel ways - making predictions, for example – thereafter being retained within the organization as organizational knowledge. Contextualized knowledge is regarded as the outcome, or product, of a learning process, because it becomes owned as organizational, such knowledge is sticky in the sense that it is both localized and contextualized. And thus it is argued that organizational knowledge is socially constructed because its added value derives from an intra-organizational social process – the process of sharing. Information gains further value when it is used in new contexts and is transformed into enterprise specific knowledge in the process.

One gains **knowledge** through context (experiences) and understanding.

When one has **context**, one can weave the various relationships of the experiences. The greater the context, the greater the variety of experiences that one is able to pull from.

The greater one **understands** the subject matter, the more one is able to weave past experiences (context) into new knowledge by absorbing, doing, interacting, and reflecting.

Thus, understanding is a continuum:

Figure 1.1 The Continuum of Understanding
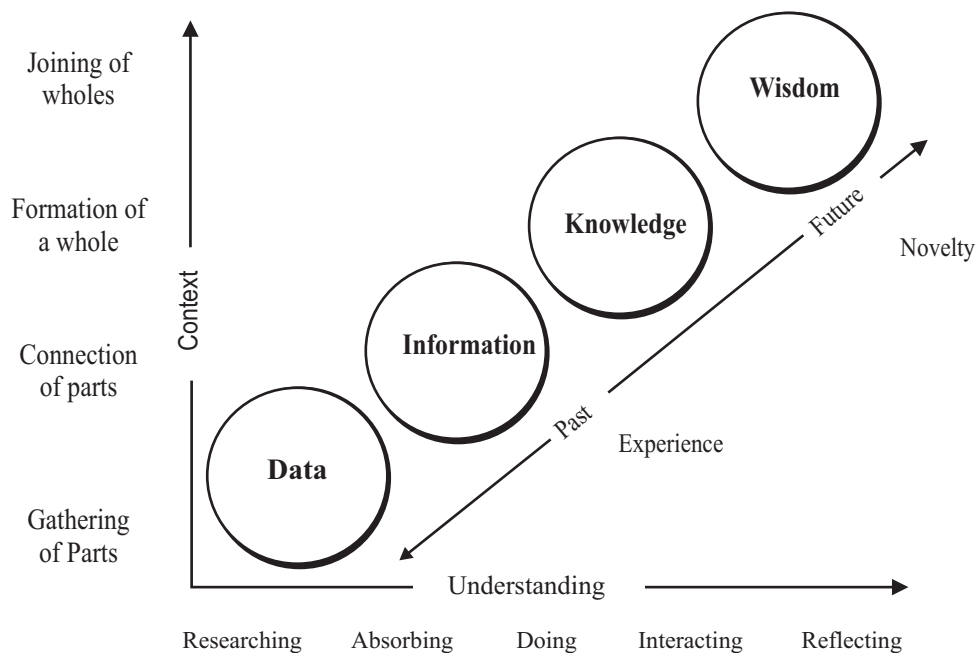
Data comes about through research, creation, gathering, and discovery.

Information has context. Data is turned into information by organizing it so that we can easily draw conclusions. Data is also turned into information by "presenting" it, such as making it visual or auditory.

Knowledge has the complexity of experience, which comes about by seeing it from different perspectives. This is why training and education is difficult - one cannot count on one person's knowledge transferring to another. Knowledge is built from scratch by the learner through experience. Information is static, but knowledge is dynamic as it lives within us.

Wisdom is the ultimate level of understanding. As with knowledge, wisdom operates within us. We can share our experiences that create the building blocks for wisdom, however, it need to be communicated with even more understanding of the personal contexts of our audience than with knowledge sharing.

Often, the distinctions between data, information, knowledge, and wisdom continuum are not very discrete, thus the distinctions between each term often seem more like shades of gray, rather than black and white.

Data and information deal with the past. They are based on the gathering of facts and adding context. Knowledge deals with the present. It becomes a part of us and enables to perform. However, when we gain wisdom, we start dealing with the future as we are now able to vision and design for what will be, rather than for what is or was.

Key Words

Before begin this article, it would be worthwhile that readers are refreshed briefly about frequent used terms 'explicit knowledge' and 'tacit knowledge' as these have become the buzzword in organizations in the last decade and therefore their correct understanding bear significance (Moolani, Mago and Umesh Chandra, 2009):

Explicit knowledge – can be formally articulated or encoded; can be more easily transferred or shared.

Tacit knowledge – knowledge-in-practice; developed from direct experience and action; highly pragmatic and situation specific; subconsciously understood and applied; difficult to articulate; usually shared through highly interactive sessions.

This knowledge would vanish from the organisation if it is not captured prior to separation of the person possessing such knowledge.

Thus the concept of knowledge goes beyond the definition of information. It consists of "information artifacts, such as documents and reports, available within the organization and in the world outside" as well as "the experience and understanding of the people in the organization." The former is termed as explicit knowledge while the latter is regarded as tacit knowledge.

What is Knowledge?

Definitions about knowledge are many and varied. Foskett (1982) defines knowledge by making a distinction between knowledge and information. He says "*knowledge* is what **I** know, *information* is what **we** know and knowledge is a subset of that which is both true and believed" (Refer Fig 1.2).

If someone believes something, he or she thinks that it is true, but he or she may be mistaken. This is not the case with knowledge. For example, suppose that a man thinks that a particular bridge is safe, and attempts to cross it; unfortunately, the bridge collapses under his weight. We might say that the man *believed* that the bridge was safe, but that his belief was mistaken. It would *not* be accurate to say that he *knew* that the bridge was safe, because plainly it was not. For something to count as knowledge, it must actually be true.

Davenport and Prusak (1998) define knowledge as, *"a fluid mix of framed experience, contextual information, values and expert insight that provides a framework for evaluating and incorporating new experiences and information."* Notice that there are two parts to this definition:

- First, there is content: "a fluid mix of framed experience, contextual information, values and expert insight." This includes a number of things that we have within us, such as experiences, beliefs, values, how we feel, motivation, and information.

- The second part defines the function or purpose of knowledge, "that provides a framework for evaluating and incorporating new experiences and information."

Figure - 1.2 The Meaning of Knowledge
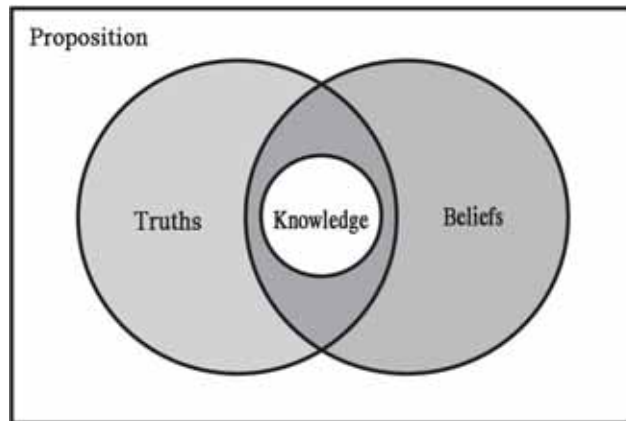
Knowledge Attributes

1. ***Knowledge exists everywhere.*** Even in an organization where strong KM practices don't exist, there are islands of knowledge. Knowledge about products, customers, markets, and operational issues, the existence is haphazard or unorganized.

2. ***Knowledge is perishable.*** What knowledge is used today would become outdated tomorrow. Sustained efforts need to be put to imbibe new information and unlearn old and outdated knowledge.

3. ***Knowledge is an asset.*** The brands, patents, special skills, and customer relations of an organization are treated as assets. Treating knowledge as a tangible asset allows for a value to be imputed to knowledge repositories. For example companies can publish a set of Intellectual Capital Account annually so that investors and other stakeholders can value the business for its intellectual worth.

4. ***Use of knowledge does not consume it.***

5. ***Transfer of knowledge does not result in losing it.***

6. ***Knowledge is abundant, but the ability to use it is scarce.***

7. ***Much of the organization's knowledge goes out of the organization.***

8. ***Knowledge can be tacit or explicit.*** Tacit knowledge is subconsciously understood and applied, difficult to articulate, developed from direct experience and action, and usually shared through highly interactive conversation, story-telling and shared experience. Explicit knowledge, in contrast, can be more precisely and formally articulated. Therefore, although more abstract, it can be more easily codified, documented, transferred or shared. Explicit knowledge is playing an increasingly large role in organizations, and it is considered by some to be the most important factor of production in the knowledge economy. Imagine an organization without procedure manuals, product literature, or computer software.

9. ***Knowledge may be of several types,*** each of which may be made explicit. Knowledge *about* something is called *declarative knowledge*. A shared, explicit understanding of concepts, categories, and descriptors lays the foundation for effective communication and knowledge sharing in organizations. Knowledge of *how* something occurs or is performed is called *procedural knowledge*. Shared explicit procedural knowledge lays a foundation for efficiently coordinated action in organizations. Knowledge *why* something occurs is called *causal knowledge*. Shared explicit causal knowledge, often in the form of organizational stories, enables organizations to coordinate strategy for achieving goals or outcomes.

10. **_Knowledge also may range from general to specific._** General knowledge is broad, often publicly available, and independent of particular events. Specific knowledge, in contrast, is context-specific. General knowledge, its context commonly shared, can be more easily and meaningfully codified and exchanged, especially among different knowledge or practice communities. Codifying specific knowledge so as to be meaningful across an organization requires its context to be described along with the focal knowledge. This, in turn, requires explicitly defining contextual categories and relationships that are meaningful across knowledge communities. To see how difficult (and important) this may be, ask people from different parts of your organization to define a customer, an order, or even your major lines of business, and see how much the responses vary (Melchert and Norman, 2002) .

11. **_Knowledge relates to place and context._** For example, your father's knowledge about farming is specific to a particular place and a particular time from say 1920 to the 1990s. Some of what he knows about farming could be adapted to other circumstances, but most of his knowledge pertains directly to paddy and cattle production in that particular place. Our knowledge and yours also is related intimately to the areas where we grew up and where we live.

12. **_All information is not knowledge,_** and all knowledge is not valuable. The key is to find the worthwhile knowledge within a vast sea of information.

Perspectives on Knowledge Dissemination and Utilization

The literature is filled with differing definitions and uses of _dissemination, knowledge utilization, diffusion,_ and _technology transfer,_ among other related terms. These terms are sometimes used interchangeably, sometimes carefully distinguished from one another. The different uses and definitions reflect varying assumptions and interests, ranging from a limited focus on "getting the word out" to an all-encompassing focus on seeing new knowledge or products from creation all the way through implementation by intended users. Newman and Vash (1994) note, "Experience shows that possession of information does not mean it will be used." Similarly, Sechrest, Backer, and Rogers (1994) argue that "we need to distinguish between 'dissemination' and 'effective dissemination,' because the former term is often used to

indicate merely the successful distribution of information." Even where _use_ is included as a dimension of dissemination, however, the question of what is meant by _use_ or _utilization_ is not a settled one.

The question of use moves dissemination to a focus on implementation. Klein and Gwaltney (1991) identified four functions or types of dissemination:

• **_spread,_** which is defined as "the one-way diffusion or distribution of information,"

• **_choice,_** a process that "actively helps users seek and acquire alternative sources of information and learn about their options,"

• **_exchange,_** which "involves interactions between people and the multidirectional flow of information," and

• **_implementation,_** which "includes technical assistance, training, or interpersonal activities designed to increase the use of knowledge or R&D or to change attitudes or behaviour of organizations or individuals."

Spread is described as a proactive process, in which disseminators take the initiative in distributing useful knowledge or products. _Choice_ is described as reactive, providing information and materials as requested by potential users, and _exchange_ and _implementation_ are described as interactive processes (Klein & Gwaltney, 1991).

Definitions of dissemination also reflect differing assumptions and beliefs about the ways in which knowledge is used, indeed about the very nature of knowledge itself. The focus varies from perceiving dissemination and utilization as linear, mechanical processes of "transfer," in which knowledge is packaged and moved from one "place" to another, much as an appliance might be packaged and shipped, to characterizing the process as highly complex, nonlinear, interactive, and critically dependent on the beliefs, values, circumstances, and needs of intended users.

A key assumption of this approach is that knowledge is a "thing" that simply needs to find a good home… Nowhere is this more apparent than in the worthy effort to define dissemination as consisting of four activities: spread, exchange, choice, and

implementation. This definition points out that the purpose of dissemination was primarily to cast knowledge out into the world of practice, under the theory that a good idea would ultimately be used. The newer approach incorporates ideas about communication as a two-way process and extends the job of dissemination to include providing support for actual changes. It nevertheless embodies the belief that knowledge comes in definable, useable units that can be arrayed in front of practitioners who will then find among them something to "solve their problem(s)."

For the purposes of this paper, the terms *dissemination* and *knowledge utilization* are used interchangeably. Both are assumed to mean not only the distribution of products or information, but also the incorporation of approaches designed to promote conceptual or instrumental use.

Dimensions of Knowledge Utilization (adapted from NCDDR, 1996).

Within the varied perspectives about dissemination, authors generally consider some combination of these four major elements:

- the dissemination *source,* that is, the agency, organization, or individual responsible for creating the new knowledge or product, and/or for conducting dissemination activities,

- the *content* or message that is disseminated, that is, the new knowledge or product itself, as well as any supporting information or materials,

- the dissemination *medium,* that is, the ways in which the knowledge or product is described, "packaged," and transmitted, and

- the *user,* or intended user, of the information or product to be disseminated.

Important factors related to each of these four elements are listed below.

Elements of Dissemination	Issues in Effective Dissemination
Source	• Perceived competence • Credibility of experience • Credibility of motive • Sensitivity to user concerns • Relationship to other sources trusted by users • Orientation toward dissemination and knowledge use
Content	• Credibility of research and development methodology • Credibility of outcomes • Comprehensiveness of outcomes • Utility and relevance for users • Capacity to be described in terms understandable to users • Cost effectiveness • Research design and procedures • Relationship between outcomes and existing knowledge or products
Medium	• Competing knowledge or products • Physical capacity to reach intended users • Timelines of access • Accessibility and ease of use, user friendliness • Flexibility • Reliability • Credibility • Cost effectiveness • Clarity and attractiveness of the information "package"

User	• Perceived relevance to own needs
	• User's readiness to change
	• Information sources trusted
	• Format and level of information needed
	• Level of contextual information needed
	• Dissemination media preferred
	• Capacity to use information or product (resources, skills, and support)

Types of Knowledge Disseminated (Ganesh, 2009)

♦ Know-what, Know-how, Know-who (causal), Care-why

♦ Public, Private, Personal Knowledge

♦ Scientific, Technical, Technological knowledge

♦ Common Knowledge

♦ Social, Cultural Knowledge

♦ Practical Knowledge

♦ Idiosyncratic Knowledge

♦ Dispersed Knowledge

♦ Esoteric and Exoteric knowledge; Shallow and Deep knowledge

♦ Meta-knowledge, Hidden knowledge

♦ Contractual, non-contractual knowledge

♦ Credentialed, Specialist knowledge

♦ Experiential, Formalized, Emerging knowledge

♦ Internal, External, Foreground, Background knowledge

♦ Migratory, Embedded knowledge

♦ Complementary, Substitutive knowledge

♦ Formal knowledge, Informal knowledge

♦ Systematic knowledge,, Theoretical knowledge, Esoteric knowledge

Contents to be Disseminated

The information, material, or products to be disseminated can vary tremendously. Edwards (1991) notes that research results can include "theories, models, paradigms, postulates, generalizations, or findings… validated tests, curricula, techniques, programs, or systems," while technological advances can include "software products, devices, equipment, or machinery."

Modes of Knowledge Dissemination (Meera, 2009).
• Organizational Website
• Annual Reports
• Newsletters
• Radio and Television
• Seminars, Conferences, and Workshops

• Government Bodies
• Field Visits by Personnel
• Commercialization of Products and Technologies

Mediums for Disseminating Knowledge

Before discussing different platforms for disseminating knowledge, it helps to make a tacit distinction between what Polanyi calls *tacit knowledge* and *explicit knowledge* in detail. According to Polanyi (1967), "…tacit knowledge is what is in our heads and explicit knowledge is what we have codified."

Given that *tacit knowledge* is knowledge that is in our heads the easiest and the only way to disseminate this type of knowledge is through organs of the body. We can communicate it through voice. This method of communication is largely applied in schools from primary to tertiary. Besides explicit communication, a lot of information and knowledge is passed on from one person to another through gestures. Laughing is a simple sign of happiness. Shrugging your shoulders indicates that you do not know. Of unique interest to note though is that gestures are not universal, they are unique to societies. Nodding one's head means that one is in agreement with what is being said after the European fashion. The converse is true in the Asian culture. In the Asian culture when you shake your head from side to side this means concurrence with what is being said. One of the notable efforts to try to address the problem of different norms and standards on gestures is what has come to be known as the sign language which came into being as an effort to address different human beings impairments such as speech and hearing.

The second type of knowledge is *explicit knowledge*. This is knowledge that has been codified. How can knowledge be codified? Codification of knowledge came as a result of man's application of tacit knowledge to transform matter into various useful objects for his survival. Writing is the oldest form of codifying knowledge.

Most of the world's knowledge is in written form in the form of books. With further transformation of matter through application of tacit knowledge other ways of codifying knowledge have emerged over time. We now find knowledge in mediums such as recorders, the INTERNET and others.

Of particular interest to us is knowledge that is manifest in transformed matter. A spacecraft for example, is a form of transformed matter and an interesting manifestation of knowledge. Houses, cars, guns, computers etc are other forms. Impact of disseminated knowledge can be looked at two levels. The first level is the level where tacit knowledge is codified to explicit knowledge. This in itself is the effect (impact) of knowledge. The different products that we have are an epitome of this. The second level is the usage of these manmade products to solve societal problems. This shows further impact of disseminated knowledge.

When should knowledge be disseminated and how do we know when it has been?

There is no stipulated rule on where and when knowledge should be disseminated. The simple answer to this question is knowledge is ready to be disseminated when the holder of it feels it is ready to be. Besides, it does not make sense to acquire knowledge to hoard it. In fact, it is impossible to hoard knowledge because we need to constantly exchange it for survival. Hoarding of knowledge makes sense only when one does it in order to gain comparative advantage over other human beings. Even this is not eternal. Overtime, the hoarded knowledge gets known and is further exchanged. For example, Colonel Saunders has hoarded information about his famous Kentucky Fried Chicken for ages using it to his advantage. Before his death he gave it to his family. This illustrates the point that it can never be hoarded forever.

Dissemination of knowledge is often done with a certain intention in mind. When this is the key reason for knowledge dissemination, it is important to determine whether knowledge dissemination has really taken place. This is important for a number of reasons. One, it allows for learning on whether knowledge was successfully disseminated so that if not other means of disseminating it successfully could be devised. For example, at institutions of learning gauging of knowledge dissemination is done through tests and examinations as we all know and two, for accountability purposes (Klein and Gwaltney, 1991).

However, the key gauge of whether knowledge has been disseminated is its application. As indicated earlier, as tacit knowledge, knowledge application is seen in the development of different solutions in the form of products and services. In a codified form, knowledge dissemination is seen in the use of the products and services to solve societal problems. Note before, knowledge use does not only lead to useful solutions to societal problems, at times it creates more problems and leads to societal ills. A clear epitome of this is the atomic bomb that was dropped by the Americans on Hiroshima and the current nuclear age in which nuclear bombs, which are an epitome of man's application of his knowledge are a threat to humanity.

Knowledge Dissemination Strategies and Mechanisms

The commonly employed disseminated mechanism for dissemination of tacit knowledge are Communities of Practice, Chat Rooms, Online Forums, After Action Review, Knowledge Fairs, Corporate Yellow Pages, Knowledge Networking, Video Conferencing, etc., and of explicit knowledge are Intranet, Knowledge Repositories, Best Practices Database, Lessons Learnt Database, Knowledge Maps, Data Mining, Email, Blogs, Wikis. (Ganesh, 2009)

Although there is a distinction between communication technologies (such as telephone and e-mail) and collaboration technologies (such as workflow management), it is very difficult to draw a line between the two (Rollet, 2003). Communication and collaboration are invariably intertwined, and it is quite difficult to establish where one ends and the other begins. Both types of tools have been grouped under the category of groupware or collaboration tools. Although all organizational members will make use of communication and collaboration, including project teams and work units, communities of practice will be particularly active in making use of many, if not all, of the communication and collaboration technologies described below.

(a) Groupware and Collaboration Tools

Groupware represents a class of software that helps groups of colleagues (workgroups) attached to a communication network (e.g. Local Area Networks [LANs]) to organize their activities. Typically, groupware supports the following operations:

- Scheduling meetings and allocating resources
- E-mail
- Password protection for documents
- Telephone utilities

- Electronic newsletters
- File distribution

The most commonly used communication technologies include the telephone, fax, videoconferencing, teleconferencing, chat rooms, instant messaging, phone text messaging (SMS), internet telephone (voice over IP or VOIP), e-mail, and discussion forums. Communication is said to be dyadic when it occurs between two individuals (e.g. a telephone call). Teleconferencing, on the other hand, may have more than two participants interacting with one another real time. Videoconferencing introduces a multimedia component to the communication channel as participants can not only hear (audio) but also see the other participants (audiovisual). Desktop videoconferencing is similar but does not require a dedicated videoconferencing facility. Simple and inexpensive digital video cameras can be used to transmit images. The visual component is especially useful when demonstrations are presented to all participants (Firestone, 2003).

Chat rooms are text-based but synchronous. Participants communicating with one another in real time via a web server that provides the interaction facility. Instant messaging is also real-time communication, but in this case participants sign on to the instant messaging system and they can immediately see who else is online or "live" at that same time. Messages are exchanged through text boxes. The SMS (Short Messaging System) allows text messages to be sent via a cellular phone rather than through the internet.

E-mail continues to be one of the most frequently used communication channels in organizations. Although e-mail messaging is dyadic, it can also be used in a more broadcast mode (e.g. group mailings) as well as in an asynchronous group discussion mode (by forwarding previous discussion threads).

Communication technologies are almost always integrated with some form of collaboration, whether it be planning for collaboration or organizing collaborative work. Collaboration technologies are often referred to as groupware or as workgroup productivity software. It is technology designed to facilitate the work of groups. This technology may be used to communicate, cooperate, coordinate, solve problems, compete, or negotiate. Although traditional technologies like the telephone qualify as groupware, the term is ordinarily used to refer to a specific class of technologies relying on modern computer networks, such as e-mail, newsgroup, videophones, or chat.

Groupware technologies are typically categorized along two primary dimensions:

1. Whether users of the groupware are working together at the same time ("real-time" or "synchronous" groupware) or different times ("asynchronous" groupware).

2. Whether users are working together in the same place ("collocated" or "face-to-face") or in different places ("non-collocated" or "distance").

Following are the different categories of taxonomy of groupware developed by Coleman (1997):

1. Electronic mail and messaging
2. Group calendaring and scheduling
3. Electronic meeting systems
4. Desktop video, real-time synchronous conferencing
5. Non-real-time asynchronous conferencing
6. Group document handling
7. Workflow
8. Workgroup utilities and development tools
9. Groupware services
10. Groupware and KM frameworks
11. Groupware applications
12. Collaborative Internet-based applications and products

E-mail is by far the most common groupware application (besides, of course, the traditional telephone). Although the basic technology is designed to pass simple messages between two people, even relatively basic e-mail systems today typically include interesting features for forwarding messages, filing messages, creating mailing groups, and attaching files with a message. Other features that have been explored include automatic sorting and processing of messages, automatic routing, and structures communication (messages requiring certain information).

Newsgroup and mailing lists are similar in spirit to e-mail systems except that they are intended for messages among large groups of people instead of one-to-one communication. In practice, the main difference between newsgroups and mailing lists is that newsgroup shows messages to users only when they are explicitly requested (an "on-demand" service), while mailing lists deliver messages as they become available (an "interrupt-driven" interface).

Usergroups - Technical knowledge dissemination (www.financialexpress.com) The Internet is ubiquitous to the techie community. It is natural that they form associations in the online world, which helps them address the various issues involved in their technology domains. User-groups, communities of geeks related to issues regarding a particular technology, have become all pervasive feature on the Net.

Usergroups have various components—mailing lists, newsgroups, and Web forum and offline meetings. This helps members interact in various ways and in a manner best suited to their requirements. The best thing about usergroups is that advice is gratis and, it as a rule solves the problem posted to the group. This exemplifies the spirit of the usergroup, which is not driven by financial motivation but by the desire to share and disseminate knowledge with other members. It is almost altruistic in nature. People, whose time is money, spend an enormous amount of time in usergroups helping others and solving technical problems. A user group provides its members the distilled wisdom of a worldwide group of experts on any topic. The experts can cut across geographies and can provide a perspective on the technologies and issues which are highlighted.

Usergroups are excellent resources for technical help, tips and resources. They provide an excellent gateway to interact with like-minded people and technical experts—people who have spent 15-20 years using a particular product and who have unerringly spotted problems in code or the method of achieving a specific technical issue.

Workflow systems allow documents to be routed through organizations by means of a relatively fixed process. A simple example of a workflow application is an expense report in an organization: an employee enters an expense report and submits it, a copy is archived and then routed to the employee's manager for approval, the manager receives the document, electronically approves it, and sends it on, and the expense is registered to the group's account and forwarded to the accounting department for payment. Workflow systems may provide features such as routing, development of forms, and support for differing roles and privileges.

Hypertext is a system for linking text documents to each other, with the web being an obvious example. Whenever multiple people author and link documents, the system becomes group work, constantly evolving and responding to other's work. Some hypertext systems include capabilities for seeing who else has visited a certain page or link, or at least seeing how often a link has been followed, thus giving users a basic awareness of what other people are doing in the system. Page counters on the web are a crude approximation of this function. Another common multi-user feature in hypertext (that is not found on the web) is allowing any user to create links from any page, so that others can be informed when there are relevant links not known to the original author.

Group calendars allow scheduling, project management, and coordination among many people and may provide support for scheduling equipment as well. Typical features detect when schedules conflict or find meeting times that will work for everyone. Group calendars also help to locate people. Typical concerns are privacy (users may feel that certain activities are not public matters) and completeness and accuracy (users may feel that the benefits of the calendar do not justify the time it takes to enter schedule information).

Collaborative writing systems may provide both real-time and non-real-time support. Word processors may provide asynchronous support by showing authorship and by allowing users to track changes and make annotations to documents. Authors collaborating on a document may also be given tools to help plan and coordinate the authoring process, such as methods for locking parts of the document or linking separately authored documents. Synchronous support allows authors to see each other's changes as they make them, and usually needs to provide an additional communication channel to the authors as they work (via videophones or chat systems).

Synchronous or real-time groupware is exemplified by shared workplaces, tele-or videoconferencing, and chat systems. For example, shared whiteboards allow two or more people to view and draw on a shared drawing surface even from different locations. This system can be used, for instance, during a phone call, where each person can jot down notes (e.g. a name, phone number, or map), or people can work collaboratively on a visual problem. Most shared whiteboards are designed for informal conversation, but they may also serve structured communications or more sophisticated drawing tasks, such as collaborative graphic design, publishing, or engineering applications. Shared whiteboards can indicate where each person is drawing or pointing by showing telepointers, which are colour-coded or labeled to identify each person.

Video communications systems allow two-way or multiway calling with live video, providing essentially a telephone system with an additional visual component. Cost and compatibility issues limited the early use of video systems to scheduled videoconferencing meeting rooms. Video is advantageous when visual information is being discussed, but may not provide substantial benefit in most cases where conventional audio telephones are adequate. In addition to supporting conversations, video may also be used in less direct collaborative situations, such as by providing a view of activities at a remote location.

Chat systems permit many people to write messages in real time in a public space. As each person submits a message, it appears at the bottom of a scrolling screen. Chat groups are usually formed by listing chat rooms by name, location, number of people, topic of discussion, and so on.

Many systems allow for rooms with controlled access or with moderators to lead the discussion, but most of the topics of interest to researchers involve issues related to unmoderated real-time communication, including anonymity, following the stream of conversation, scalability with number of users, and abusive users.

Although chat-like systems are possible using nontext media, the text version of chat has the rather interesting aspect of having a direct transcript of the conversation, which not only has long term value, but also allows for backward reference during conversation, making it easier for people to drop into a conversation and still pick up on the ongoing discussion.

Blog, a collaborative mechanism (a contraction of the term *weblog*) is a type of website, usually maintained by an individual with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse-chronological order. "Blog" can also be used as a verb, meaning *to maintain or add content to a blog*.

Many blogs provide commentary or news on a particular subject; others function as more personal online diaries. A typical blog combines text, images, and links to other blogs, Web pages, and other media related to its topic. The ability for readers to leave comments in an interactive format is an important part of many blogs. Most blogs are primarily textual, although some focus on art (artlog), photographs (photoblog), sketches (sketchblog), videos (vlog), music (MP3 blog), audio (podcasting), which are part of a wider network of social media.

Many people use a blog just to organize their own thoughts, while others command influential, worldwide audiences of thousands. Professional and amateur journalists use blogs to publish breaking news, while personal journalers reveal inner thoughts.

(b) Wikis

Wikis are web-based software that supports concepts such as open editing, which allows multiple users to create and edit content on a website. A wiki site grows and changes at the will of the participants. People can add and edit pages at will, using a Word-like screen, without knowing any programming or HTML commands. More specifically, a wiki is composed of web pages where people input information and then create hyperlinks to another page or new pages for more details about a particular topic. Anyone can edit any page and add, delete, or correct information. A search field at the bottom of the page lets you enter a key word for the information you want to find. Today, two types of wikis exist: public wikis and corporate wikis. Public wikis are developed first and are freewheeling forums with few controls. In the last year or two, corporations have been harnessing the power of wikis to provide interactive forums for tracking projects and communicating with employees over their in-house intranets.

An example of wiki is *Wikipedia*, a free encyclopedia written, literally, by thousands of people around the world. Wikis exist for thousands of topics, and if one does not exist for your favourite subject, you can start one on it and add it to the list.

Wikis support new types of communications by combining internet applications and websites with human voices. That means people can collaborate online more easily, whether they are working together on a brief or working with a realtor online to tour office space in another city (Leuf and Cunningham, 2001).

A public wiki survives thanks to the initiative, honesty, and integrity of its users. Sites can be vandalized, derogatory remarks-called "flames"- can be posted, and misinformation can be published. However, a vandalized site can be restored, a flame can be erased, and information can be corrected by anyone who knows better. The community polices itself. Corporate wikis differ from public wikis in that they are more secure and have many more navigation, usage, and help features. Corporate wikis are used for project management and company communications as well as

discussion sites and knowledge databases. For example, a wiki can be established for a particular project, with the project team given access to update the status of tasks and add related documents and spreadsheets. Its central location makes it easy to keep everyone informed and up to date regardless of their home office, location or time zone. A wiki is more reliable than continually e-mailing updates back and forth to the team members, it is faster than e-mail since updates are available instantly, and it is more efficient than e-mail since each team member does not have to maintain his or her own copies. Managers like wikis because they allow them to see what progress the team is making or what issues it is facing without getting involved or raising concern (e.g. a new way of project management reporting).

For security reasons, corporations usually buy wiki software rather than lease space on the internet, and they set up the wiki behind the company's firewall as a part of the intranet or as an extranet if customers or vendors are allowed access. Also, corporations look for wiki software that has authorization and password safeguards, "rollback" versions so that information can be restored to its former state, and easy uploads capabilities for documents and images. Some wikis notify users when new information is added; this is an especially nice feature for corporate projects where fast responses are required.

(c) Networking Technologies

Networking technologies consist of intranets (intraorganizational networks), extranets (interorganzational networks), knowledge repositories, knowledge portals, and web-based shared work places. Knowledge repositories can be defined (Liebowitz and Beckman, 1998) as an online computer based storehouse of expertise, knowledge, experiences, and documentation about a particular domain of expertise. In creating a knowledge repository, knowledge is collected, summarized, and integrated across sources. Such repositories are sometimes referred to as *experiences bases* or *corporate memories*. The repository can either be filled with knowledge through passive collection – where some people in the organization are scanning communication processes to detect knowledge (van Heijst, van Der Spek and Kruizinga (1997).

Davenport and Prusak (1998) describes three types of knowledge repositories:

1. External knowledge repositories (such as competitive intelligence)

2. Structured internal knowledge repositories (such as research report and product-oriented market material).

3. Informal internal knowledge repositories (such as "lesson learned").

A knowledge repository differs from a data warehouse and an information repository primarily in the nature of the content that is stored. Knowledge content will typically consist of contextual, subjective, and fairly pragmatic content. Content in knowledge repositories tends to be unstructured. Knowledge repositories also tend to be more dynamic than other types of architectures because the knowledge content is continually updated and splintered into varying perspectives to serve a wide variety of different users. To this end, repositories typically end up being a series of linked mini-portals distributed across an organization.

Most repositories contain the following elements (adapted from Tiwana, 2000):

1. Declaration knowledge (e.g. concepts, categories, definitions, assumptions-knowledge of *what*)

2. Procedural knowledge (e.g. processes, events, activities, actions, manuals-knowledge of *how* or *know-how*)

3. Casual knowledge (e.g. rationale for decisions, for rejected decisions-knowledge of *why*)

4. Context (e.g. circumstances of decisions, informal knowledge, what is and what is not done, accepted, etc. - knowledge of *care-why*.)

The knowledge repository is the one-stop-shop for all organizational users providing access to all historical, current, and projected valuable knowledge content. All users should be able to connect to and annotate content, connect to others who have come into contact with the content, as well as contribute content of their own. The interface to the repositories should be user-friendly, seamless, and transparent.

Personalization in the form of personalized news services through push technologies, in the form of mini-portals for each community of practice, and so forth will help maintain the repository in a manageable state. To this end, use of a term such as knowledge warehouse should be strongly discouraged. The knowledge repository should instead be visualized as a lens that is placed on top of the organization's data and information stores. The access and application of the content of a repository should be

as directly linked to professional practice and concrete actions as possible.

The knowledge repository typically involves content management software tools such as a Lotus Notes platform and will be run as an intranet within the organization, with appropriate privacy and security measures in place.

Knowledge portals provide access to diverse enterprise content, communities, expertise, and internal and external services and information (Collins, 2003; Firestone, 2003). Portals are a means of sorting and disseminating organizational knowledge such as business processes, policies, procedures, documents, and other codified knowledge. They typically feature searching capabilities through content as well as through pull technologies (intelligent agents) may exist. Communities can be accessed via the portal for communication and collaboration purposes. There may be a number of services that users can subscribe to as well as web-based learning modules on selected topics and professional practices. The critical content will have the best practices and lessons learned that have been accumulated over the years and to which many organizational members have added value.

The purpose of a portal is to aggregate content from a variety of sources into a one-stop-shop for relevant content. Portals enable the organizations to access internal and external knowledge that can be consolidated, analyzed, and used as inputs to decision making. Ideally, portals will take into account the different needs of the users and the different sorts of knowledge work they carry out in order to provide the best fit with both content and the format in which the content is presented (the portal interface). Knowledge portals link people, processes, and valuable knowledge content and provide the organizational glue or common thread that serves to support knowledge workers. First generation portals were essentially a means of broadcasting information to all organizational members. Today, they have evolved into sophisticated shared workplaces where knowledge workers cannot only contribute content and share content but also acquire and apply valuable organizational knowledge. Knowledge portals support knowledge creation, sharing, and use by allowing a high level of bidirectional interaction with users (Alex and Byerlee, 2000).

Portals serve to promote knowledge creation by providing a common virtual space where knowledge workers can contribute their knowledge to organizational memory. Portals promote knowledge sharing by providing links to other organizational members through expertise location systems. Communities of practice will typically have a dedicated space for their members on the organizational portal and their own membership location system included in the virtual workspace. The portal organizes valuable knowledge content using taxonomies or classification schemes to store both structured and unstructured contents. Finally, portals support knowledge acquisition and application by providing access to the accumulated knowledge, know-how, experience, and expertise of all those who have worked within that organization.

Knowledge Acquisition and Utilization Strategies and Mechanisms

A number of technologies play an important role in how successful knowledge workers are in acquiring (i.e. understanding) and applying or utilizing (i.e. making use of) knowledge content that is made available to them by the organization. E-learning systems provide support for learning, comprehension, and better understanding of the new knowledge to be acquired. Tools such as electronic performance support systems (EPSS), expert systems, and decision support systems (DSS) help knowledge workers to better apply knowledge on the job. Adaptive technologies can be used to personalize knowledge content push or pull. Recommender systems can detect similarities or affinities between different types of users and make recommendations of additional content that others like them have found to be useful to acquire and apply. Knowledge maps and other visualization tools can help to better acquire and apply valuable knowledge, and a number of tools derived from artificial intelligence can at least partially automate processes such as text summarization, content classification and content selection.

E-learning applications started out as a computer based learning (CBT) and web based training (WBT) applications. The common feature is the online learning environment provided for learners. Courses can now be delivered via the web or the company intranet. The particular knowledge and know-how to be acquired can be scoped and delivered in a timely fashion in order to support knowledge acquisition. E-learning technologies also greatly increase the range of knowledge dissemination because knowledge that has been captured and coded or packaged as e-learning can be easily made available to all organizational members, regardless of any time or distance constrains.

Decision support systems are designed to facilitate groups in decision making. They provide tools for brainstorming, critiquing ideas, putting weights and probabilities on events and alternatives, and voting. Such systems enable presumably more rational and even-handed decisions. Primarily designed to facilitate meetings, they encourage equal participation by, for instance, providing anonymity or enforcing turn-taking.

Visualization technologies and knowledge mapping are good ways of synthesizing large amount of complex content in order to make it easier for knowledge workers to acquire and apply knowledge.

Artificial intelligence (AI) research addressed the challenges of capturing, representing, and applying knowledge long before the term knowledge management entered popular usage. AI developed automated reasoning systems that would make use of explicit knowledge representations in order to provide expert level advice, troubleshooting, and other forms of support to knowledge workers. Expert systems are decision support systems that do not execute an a priori programme but instead deduce or infer a conclusion based on the inputs provided. Natural language processing also grew out of AI research. Linguistic technologies resulted in automating the parsing (breaking into subsections) and analysis of text. Common applications today are voice interfaces or natural language queries that can be typed in to search databases. Similar AI technologies can also be applied to analyze and summarize text or automatically classify content. Many of the automated reasoning capabilities studied in AI research are encapsulated in autonomous pieces of software code, called intelligent agents or software robots ("softbots"). These agents act as proxies for knowledge workers and can be tasked with information searching, retrieving, and filtering functions.

(a) Intelligent Filtering Tools

Intelligent Agents can generally be defined as software programmes that assist their user and act on his or her behalf: a computer programme that helps you in newsgathering, acts autonomously and on its own initiative, have intelligence and can learn, improving its performance in executing its tasks (Woolridge and Jennings, 1995). These agents are autonomous computer programmes, where their environment dynamically affects their behaviour and strategy for problem solving. They help users deal with information. Most agents are internet based- that is, software programmes inhabiting the Net and performing their functions there.

The following features define a true Intelligent Agent (Khoo, Tor, and Lee, 1998):

1. *Autonomy*: the ability to do most of their tasks without any direct assistance from an outside source, which includes human and other agents, while controlling their own actions and states.

2. *Social ability*: the ability to interact with, when they deem appropriate, other software agents and humans.

3. *Responsiveness*: the ability to respond in a timely fashion to perceived changes in the environment, including changes in the physical world, other agents, or the internet.

4. *Personalizability*: the ability to adapt to its user's needs, by learning from how the user reacts to the agent's performance.

5. *Proactivity*: the ability of an agent to take initiatives by itself, autonomously (out of a specific instrument by its users) and spontaneously, often on a periodical basis, which makes the agent a very helpful and time saving tool.

6. *Adaptivity*: the capacity to change and improve according to the experiences accumulated. This has to do with memory and learning: an agent learns from its user and progressively improves in performing its tasks. The most experimental bots even develop their "own" personalities and make decisions based on past experiences.

7. *Cooperation*: the interactivity between agent and user, which is fundamentally different from the one way working of ordinary software.

Many knowledge management applications make use of intelligent agents (e.g., see Elst, Dignum, and Abecker, 2003). This range includes personalized information management (such as filtering e-mail), electronic commerce (such as locating information for purchasing and buying), and management of complex commercial and industrial processes (such as scheduling appointments and air traffic control). These tasks/applications can generally be grouped into five categories (Khoo, Tor, and Lee, 1998):

1. *Watcher agents*: look for specific information.

2. *Learning agents*: tailor to an individual's preferences by learning from the user's past behaviour.

3. *Shopping agents*: compare "the best price for an item."

4. *Information retrieval agents*: help the user to "search for information in an intelligent fashion."

5. *Helper agents*: perform tasks autonomously without human interaction.

In the age of computers, information, whether useful or useless, is readily available on the internet. So much data is available that we often claim to be "overloaded with information." Having too much data can cause as much trouble as having no data, as we must sift through so much information to get what we need. Let us categorize this information overload problem into two divisions:

1. *Information filtering*: we must go through an enormous amount of information to find the small portion that is relevant to us.

2. *Information gathering*: there is not enough information available to us, and we have to search long and hard to find what we need.

Information filtering is a particularly important function in KM because users need a way of filtering this data into a more manageable situation. Knowledge workers need information in a timely manner as it can greatly affect their success. Tasks that are redundant or routine need to be minimized by some individuals who can otherwise spend their time more productively (Roester and Hawkins, 1994).

Some companies receive so much e-mail that they have to employ clerical workers to sift through the flood of e-mail, answering basic queries and forwarding others to specialized workers. Others use intelligent filtering software such as GrapeVine for Lotus, which reads a preestablished "knowledge chart" to determine who should receive what mail. Intelligent agent services can supplement but not replace the value of edited information. As information becomes more available, it becomes more and more crucial to have strong editors filter that information (Webb, 1995). There is so much content out there that the tools that filter content are going to be as important as the content itself (Wingfield, 1995).

An end user, required to constantly direct the management process, contributes to information overload. But having agents to perform tasks as such searching and filtering can ultimately reduce the information overload to a degree. An electronic mail filtering agent called Maxims, which is a type of learning agent (Maes, 1994). The programme "learns to prioritize, delete, forward, sort, and archive mail messages on behalf of a user." The programme monitors the user's actions and treats these actions as a lesson on what to do. Depending upon threshold limits that are constantly updated, Maxims will guess what the user will do. Upon surpassing a degree of certainty, it will start to suggest action for the user to take.

News agents are designed to create custom newspapers from a huge number of web newspapers throughout the world. The trend in this field is toward autonomous, personalized, adaptive, and very smart agents that surf the net, newsgroups, databases, and so on and deliver selected information to their users. "Push" technology is strictly connected to news bots developments, consisting basically in the delivery of information on the web that appears to be initiated by the information server rather than by the client.

Information overload is a world wide problem today, but Intelligent Agents help reduce this problem. Using them to filter the oncoming "traffic" of the "information highway" can help reduce cost, effort and time. Yet the development of Intelligent Agents is still in its infancy. As it gains in popularity and use, we can expect to see more sophisticated and better developed Intelligent Agents.

(b) Adaptive Technologies

Adaptive technologies are used to better target content to a specific knowledge worker or to a specific group of knowledge workers who share common work needs.

Customization refers to the knowledge workers "manually" changing their knowledge environment- for example, selecting user preferences to change the desktop interface, specifying certain requirements in content to be provided to them (language, format), or subscribing to certain news or listserv services.

Personalization, on the other hand, refers to the automatic changing of content and interfaces based on the observed and analyzed behaviours of the intended end user. For example, many MS office applications offer the option of dynamically reordering

pop-down menu based on frequency of usage (the ones used most often will be displayed on top). One way of automatically personalizing knowledge acquisition makes use of recommender systems. Recommendations regarding content that is likely to be considered useful and relevant by a given knowledge worker may be based on a user profile of that knowledge worker (e.g. with

Morphology of Some Selected Knowledge Vehicles in Dissemination (adapted from Ganesh, 2009)

	Grapevine	Manuals	Workshops/ Conferences	Directories
Purpose	To circulate information or gossip, rumor	To document operational features	To share knowledge amongst group	To keep classified information for easy reference in alphabetical order
Nature	Unstructured	Standardized Anytime	Scheduled	Standardized Anytime
Reach	Selective, targeted	Customers, targeted	Selective, targeted	Geographically spread Consumers
Collaborative	Designed for two way	Designed for one way	Yes(thoughts and process)	Designed for one way
Interactive	Yes	No	Yes	No
Analysis	Yes	No	Yes	No
Types of Players	Sender receiver feedback agent	Developer Reader	Organizers participants	Developers publishers and users
Stakeholders	Sender, receiver	Developer, Producer, printer and Customer	Organizers Participants, Publishers of proceedings, Users of knowledge	Receivers Developers, Advertisers, publishers, and users

	Blogs	Wikis	Websites	Emails
Purpose	To publish an account of activities and opinions	To have a common workspace	To publish information	To send documents and messages
Nature	Sample of the Population	Team standardization Simplifying Collaboration	To be on the same page in large geographically differently placed teams	Anytime Communication
Reach	Corporate Blog	Selective	Can be made selective	Sender's Choice of receivers
Collaborative	Yes	Yes	Can be designed to be interactive	Time lag is there
Interactive Analytics	Possible to aggregate data at different levels		Yes	
Types of Players Stakeholders	Active and Passive KM Team, Senior Management	Writers/Reviewers Project teams, Task Forces	Web Master Different levels can be identified	Sender Receiver Project teams, Support Groups

themes checked off), or the recommendation may be based on affinity groups. Affinity groups make use of similarity analysis of users in order to develop groups of individuals who appear to share the same interests. Amazon, for example, uses affinity groups when, after ordering a book online, visitors to the site are provided with information on related books that others who have bought the same book have also purchased.

Communities of practice are affinity groups to some extent, and personalization technologies are often used to target or push certain types of content that are of interest to a given community. Community profiles can be established just as individual profiles and can be used in the same moment in order to better adapt content and interfaces to the community member.

Knowledge Dissemination Initiatives - Selected Indian Case Examples

1. *ISB, Hyderabad* (www.isb.edu) - As part of their knowledge dissemination efforts, the school hosts high profile national and international conferences and seminars throughout the year.

2. *The Bombay Stock Exchange (BSE) and the Institute of Company Secretaries of India (ICSI)* (www.indopia.in) signed a memorandum of understanding (MoU) for disseminating knowledge through training programmes. The BSE will benefit from this MoU, as it will enable BSE offer a wider range of programmes and investor awareness seminars for its stakeholders. The objective of this MoU is to promote excellence in professional and legal education. Since both BSE and ICSI are leaders in their respective domains, it is only apt that they come together for exchange of resources. BSE offers exclusive training, enabling financial market participants and intermediaries to keep abreast of the latest developments in a rapidly evolving economic environment. ICSI and BSE will create NextGen capital and financial market professionals and this collaboration would provide the right platform to Company Secretaries to further build their skills to meet the challenges of the globalised and transforming capital markets.

3. *Government of West Bengal* (www.indiainfoline.com) - The first edition of Agromax Conference in the Eastern Region, its fourth edition nationwide, saw record turnout of young, progressive farmers from West Bengal, the North East, Bihar, Orissa and Chattisgarh. These farmers are all part of the 10000+

young Indian farmers knowledge dissemination network launched last year by Aries Agro Limited along with the Confederation of Indian Industry's Young Indians. Agromax, the flagship National Agribusiness Conference focused on 'Making Balanced Crop Nutrition a national imperative.' The conference addressed this imminent need to ensure sustained higher harvests to adequately address the pressing need to raise productivity and combat the food crisis. The unique feature of AGROMAX was that it saw participation on a common intellectual platform from top government officials, opinion leaders, thought leaders from industry and academia, research scholars, scientists, agribusiness students and farmers.

4. *The National Tuberculosis Institute (NTI), Bangalore* (ntiindia.kar.nic.in) **-** The steadily growing knowledge in TB control brought with it a type of pressure that urged the NTI to find newer paths to tread than lecturing, teaching, training, conducting seminars and writing papers because every path had its own objective oriented limitations. The NTI had ambitious plans to reach out. One thing it did on priority was the expansion of library facilities. By 1970, its annual budget was doubled to one lakh rupees and its floor area more than doubled. In addition to the regular services, the library started the following activities: current awareness service, indexing service, selective dissemination of information, compilation of mailing addresses, user education programmes and systematising information to different levels for e.g., programme supervisors, state TB demonstration and training centres, health institutions, academic institutions, functioning health centres, allied teaching and research institutions. The library and dissemination services rapidly became a cynosure for all the trainees, visitors and distinguished TB workers. In fact, its services contributed to the growth of the NTI by taking cues from contemporary events elsewhere and helpful to inform others.

5. *Nuclear Power Corporation of India Limited (NPCIL)* **-** Systematic Approach to Training (SAT) is recognised internationally as the best practice of training. SAT approach adopted in NPCIL has helped the organisation to achieve effectiveness in knowledge management because the knowledge dissemination through this methodology ensures that need based knowledge is imparted to the concerned employee. SAT approach identifies training needs in respect of an individual after taking into account his/her present competencies and required competencies based on his/her duty areas. This competence gap analysis provides direction for training needs.

This approach has been adopted in O&M organisations and same approach is being considered for construction and HQ personnel. This training need analysis is continuous process as there would be changes in competence requirements of persons due to job rotation, up gradation, and technological up gradation/changes (Moolani, Mago and Umesh Chandra, 2009).

Tacit knowledge is difficult to be imparted, yet it is possible to make its' dissemination easier through effective training settings. In NPCIL Nuclear Training Centres (NTCs) are equipped with various provisions of effective training settings in this regard. These NTCs are equipped with various workshops having working models, cutaway- views of complex equipment, exploded views through drawings and charts for providing sound knowledge on foundation courses for all technical personnel and have helped in achieving of multidisciplinary knowledge and skills among technical personnel.

Earlier, Control Room engineers used to learn under guidance and close supervision of their superiors. Now such learning has become easier through Nuclear Power Plant Simulators. This facility provides structured progressive learning, under the guidance of qualified instructor, of about five to seven weeks duration, covering all phases of plant operations thus making it easier to license incumbents in shorter duration for control room positions. The human error will not result into any actual incident as this is only simulation but at the same time would provide opportunity to the incumbent to learn managing of such incident.

Considering difficulties in transfer of tacit knowledge from the difficult to be located experts, computer based or web based training (CBT/WBT) packages have become powerful tools. Here using services of training expert, structured presentations on the selected topic in form of multimedia training package are developed. For explaining the operation of complex mechanism, the dynamic simulation of such mechanism through computer mimics or video clips is enforced and progressive learning concept ensures that phase wise learning takes place. Unless the incumbent knowledge is not verified through built in test mechanism, he/she would not be permitted to visit next phase of learning. The incumbent can replay the part not understood by him any number of times he desires till he has understood it. For conventional part of

core competency such packages are available in the market, however for Nuclear System knowledge, in house custom built package is the only solution. KM group has started putting the efforts in this direction. As these training packages are also accessible through intranet easy availability for learning by larger work force is another advantage of this approach.

6. *The National Portal of India (http://india.gov.in) -* This is the Official Portal of the Indian Government, designed, developed and hosted by National Informatics Centre (NIC), the premier ICT Organisation of the Government of India under the aegis of Department of Information Technology, Ministry of Communications and Information Technology.

    The Portal has been developed as a Mission Mode Project under the National E-Governance Plan of the Government. The objective behind the Portal is to provide a single window access to the information and services being provided by the Indian Government for the citizens and other stakeholders. An attempt has been made through this Portal to provide comprehensive, accurate, reliable and one stop source of information about India and its various facets. Links at various places, too, have been provided to other Indian Government Portals/websites.

    The content in this Portal is the result of a collaborative effort of various Indian Government Ministries and Departments, at the Central/State/District level. It is our endeavour to continue the enhancement and enrichment of this Portal in terms of content coverage, design and technology on a regular basis.

Strategic Implications of Knowledge Management (KM) Tools and Techniques

Tools and techniques are a means and not an end in themselves. First, the objectives must be clearly identified, and then a consensus must be reached on priority application areas to be addressed. For example, an initial KM application will typically be some form of content management system on an internally managed intranet site. This is a good building block for subsequent application such as yellow pages or expertise finders and groupware tools to enable newly connected knowledge workers to continue to work together.

A number of the techniques presented here address the phenomenon of emergence that can help discover existing valuable knowledge, experts, communities of practice, and other valuable

Swot of Knowledge Creation and Dissemination Institutions (Adapted from Meera, 2009)

Strengths	Weaknesses
• Large pool of competent and loyal knowledge workers	• Bureaucratic structure • Rigid and closed culture • Lack of collaboration and knowledge sharing among institutions • Inability to attract and retain talent
Opportunities	**Threats**
• Nation building through identification of opportunities in the public domain • Benefit to millions of people • Synergy with different bodies with the same goals	• Competition from private and non-governmental organizations • Non-availability of funds from the Government • Loss of manpower to other organizations

intellectual assets that exist within an organization. Once this is done, the intellectual assets can be better assessed, leveraged, disseminated and employed or utilized. The KM tools and techniques have an important enabling role in ensuring the success of KM applications (Kimiz Dalkir, 2005).

Conclusions

Major conclusions are summarized as follows:

■ Dissemination is a process requiring a careful match among (a) the creation of products or knowledge, and the context of that creation, (b) the needs, contexts, prior experiences, values, and beliefs of target audiences, and (c) the content, media, formats, and language used in getting the outcomes into the hands, minds, and activities of those target audiences.

■ The goal of all dissemination should be utilization. Utilization may mean different things to different members of a target audience. The critical element of utilization is that the outcome must be critically and thoroughly digested, and the individual (or organization) must fit the new information with her or his prior understandings and experience.

■ One of the most effective ways to increase utilization is to involve potential users in planning and implementation of the dissemination design itself.

■ Effective dissemination requires an understanding of knowledge use as a process of learning, and of change.

■ Effective dissemination is critically linked to its timeliness and comprehensiveness.

■ Effective dissemination of knowledge requires careful planning and effort.

■ Dissemination requires ongoing support and personal intervention in order to achieve utilization.

Keywords: Knowledge, knowledge management, tacit knowledge, explicit knowledge, knowledge transfer, and knowledge workers.

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Perception of Value
E-CRM Features

D. Sureshkumar and P. Palanivelu

Abstract

The purpose of this research study is to give a better understanding of customers' perception of value from e-CRM features on airline e-ticketing Websites. Multiple case study strategy was chosen and empirical data was collected from seven cases through in-depth interviews. Each customer who was a business man and used to buy airline e-tickets, was treated as a single case. Customers' responses were taken both after the adoption of a feature (post-adoption) and before the adoption of a feature (pre-adoption) to find the overall perceptions of customers. Findings of the study show that all the features were not important for customer satisfaction, at the same time, and websites were not providing all the features discussed by the theory where as customers showed their willingness to use those features if provided.

There is a strong competition among businesses today therefore managers and marketers are agreed on developing long term relationships with their customers for the development and survival of the companies. Zineldin (2006) states that companies with stronger relationship with customers are in the best position to retain their customers. According to him CRM is an effective method to maintain customer database and by that company can best understand the customers' needs and more precisely their relationship need better than the other competitors. He stressed that stronger relationship with the customers is more important than low prices, big promotion offers, and advanced technology. Yaeckel et al. (2002, p. 245-246) believe that CRM is not a new concept; it is a

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process not a software product or technology. This process manages interactions between a company and its customers. Hardware, software, and service are one of the components for supporting the strategy of CRM. CRM can be beneficial in two ways (Foss et al., 2004, p. 90), firstly it improves customer retention and loyalty and secondly the higher customer profitability because of less customer recruiting costs and reduced costs of sales. According to Romano et al. (2004) the latest technique which the companies are using now a days for increasing and enhancing their marketing skills is electronic customer relationship management (e-CRM). This Introduction part shows that CRM.

Objectives of the Study

☐ To know the customers perceive value from pre-purchase features of e-CRM on airline E-ticketing websites

☐ To study the customers perceive value from at-purchase features of eCRM on airline E-ticketing websites

☐ To analysis the customers perceive value from post-purchase features of eCRM on airline E-ticketing websites

Research Purpose

Purpose of our research is exploratory because we are going to give a better understanding of customers' perception of value from e-CRM features on airline e-ticketing websites. The exploratory research provides a way into consumer perceptions, behaviours, and needs. Moreover better understanding of customer causes better decision making power and better recognition of market opportunities for companies.

Research methodology
Selection of Cases

We have chosen *multiple case study* in order to give a better understanding of customers' perception of value from different features of eCRM on airline e-ticketing websites. States that multiple cases provide more robust evidence than a single case study and evidences can be compared and generalizations can be done.

The target population of this research study is *all those customers of airline companies who are business men at Coimbatore district and used to buy tickets online.* Business men has been the subject matter of research in consumer behavior studies which have contributed valuable results. Each business man will be treated as one case. We have selected seven cases for our study.

Data Collection

We can use different data collection methods including questionnaires, interview in case-study approach. He mentioned three types of interviews namely structured interviews, semi-structured interviews and unstructured interviews. In structured interviews, according to him, predetermined or standardized set of questions are asked, whereas semi-structured interviews order of questions can be varied depending on the flow of conversation, additional questions may be required to explore the research question and objectives.

Data Analysis

The unit of analysis will be an individual interviewee. Each case (an individual) will be compared independently with the theoretical framework and the cases will also be compared with each other (Cross-case analysis) in order to highlight the similarities and difference. Categorization will be done within each case. Then each case will be compared with the frame of reference, category by category. At the end, all cases will be compared with each other on the basis of the same categorization.

Cross-Case Analysis

There are three categories namely pre-purchase, at-purchase and post-purchase e-CRM feature in which empirical evidence was collected from seven different cases. Empirical data was compared with theory. In this section the analyzed responses from the seven cases are compared with each other. A summary is presented in Table 1. Certain symbols and letters are used in which are explained below.

Table: 1

Symbol	Meaning
a	Case has actually utilized the feature and response is based onafter adoption of the service/feature **(post-adoption).**
b	**(pre-adoption)** Case has never used or experienced the feature because: • The Case could not found this feature on website or Thisfeature was not important for him/her, or

	The Case does not fall in any situation so that he/she could use that feature,In the later case questions were asked in the context of use, for example What if he/she falls in that situation what will case do in that case and if that feature is provided to her/him what will be the response.
+	Shows that the response from a case about a variable is the **same** as frame of reference has specified (or what theory says). A situation of full agreement and the respondent perceives value from this feature in case of 'a' or can perceive value from this feature in case of 'b.'
-	Shows that the response from a case about a variable is **not** the same as frame of reference has specified (or what theory says). A situation of full disagreement and respondent perceives no value from this feature in case of 'a' or not intended to perceive any value from this feature in future in case of 'b.'
+/-	Shows that the response from a case about a variable is supporting some aspects and not supporting other. A situation of partial agreement.

Data Analysis - Table: 2 Cross-Cases Analysis

	Variables	Case-1	Case-2	Case-3	Case-4	Case-5	Case-6	Case-7
Pre-Purchase e CRM	Permission Marketing	+	+	-	+	-	+	+
		a	b	b	a	b	a	a
	Site Customization	-	-	-	-	-	-	-
		b	b	b	b	b	b	b
	Alternative Channels	+	+	+	+	+	+	+
		a	a	b	b	a	a	a
	Local Search engine	+	+	+	+	+	+	+
		a	a	a	a	a	a	a
	Membership	+	-	+	-	-	-	+/-
		a	a	a	b	b	b	a
	Site information	-	-	-	-	-	+/-	-
		b	b	b	b	b	b	b
	Online Forums	+	+	-	+	+	+	+
		b	b	b	b	a	a	B
At-Purchase e CRM	Loyalty program	+	+	-	+	+	+	+
		a	b	b	b	b	b	A
	Extended buying experience	+	+	+	+	+	+	+
		a	a	a	a	a	a	A
	Information about services	+	+	+	+	+	+	+
		a	a	a	a	a	a	A
	Service customization	+	+	+	+	+	+	+
		a	a	a	a	a	a	A
	Purchase conditions	+	-	+	-	+/-	+	+
		a	a	a	a	a	a	A
	Payment methods	+	+	+	+	+	+	+
		a	a	a	a	a	a	a

Post-purchase eCRM	FAQs	+	+	-	+	+	+	+
		a	a	b	a	a	a	a
	Problem solving	+	+	+	+	+	+	+
		b	b	a	b	b	a	b
	Complaining ability	+	+	+	+	+	+	+
		b	b	b	b	b	b	b
	Order tracking	+	+	+	+	+	+	+
		b	b	b	b	b	b	b
	Feedback channels	+	+	-	+	+	+	+
		b	b	b	b	b	b	a

Result and Discussion

Pre-purchase e-CRM Features

The response analysis in Table 1 reveals that the most adopted feature (entries marked with 'a' in Table 1) experienced by the respondents from pre-purchase e-CRM is 'local search engine.' 'Permission marketing,' 'alternative channels' were used by more than half of the cases. Whereas half of the respondents got the opportunity to utilize 'membership' feature. The most important (+) feature for respondents on the basis of 'post adoption' is 'local search engine.' When we take into consideration the 'pre-adoption' responses (all entries marked with 'b' in Table 1) as well the picture becomes clearer. 'Alternative channels,' 'local search engines' and 'online forums' are perceived as the most valuable features by all of the respondents whereas five of the respondents perceived value from 'permission marketing' as well making it as the second important feature. Only two of the respondents perceive 'membership' feature as valuable for them and one considered it as partially important for him. All of the respondents were not agreed on (-) for the importance of 'site customization' and 'site information' features and hence making them least important features for them. Over all this part of the table shows that customers perceive value from most of the adopted features except case-2 when she adopted a 'membership feature' but did not like it afterwards. Regarding pre-adoption, their answers to future perceived use of the feature were alternative. Sometimes they think they can perceive value (+) from the future use of the feature and sometimes they think opposite.

At-purchase e-CRM Features

At-purchase e-CRM features are the most adopted features by the respondents as shown in Table 1 (entries marked with 'b'). Only the least used feature in this category is 'loyalty programme' which is used by two respondents only. 'Extended buying experience,' 'information about services,' 'service customization,' 'payment methods,' and 'comparative shopping' features are the most utilized and valued features by all of the respondents. Almost all of the respondents believe the importance of 'loyalty programmes' in certain situation although they do not use it at present stage. Two of the respondents do not perceive any value from 'purchase conditions' whereas remaining cases perceive value from this feature.

Over all this part of the table shows that customers perceive value from most of the adopted features except 'purchase conditions' where two cases dislike reading these conditions after adoption. Regarding pre-adoption their answers to future perceived use of the feature were alternative. Sometimes they think they can perceive value (+) from the future use of a feature and for others they do not perceive any value.

Post-purchase e-CRM features

Post-purchase features were the least adopted features in 1 (entries marked with 'b'). Here the most adopted (a) feature is 'FAQs.' All of the respondents, except the case-3, uses to read 'FAQs' and perceive value from it. All of the respondents were agreed to have 'problem solving' feature on travel websites where they could change their booked flight schedule or cancel their tickets in case

of need and they can perceive value from this feature in future subject to their needs. Although most of the respondents never had to complain against the travel websites, yet all of them perceive it to be important for them in case they have to complain in future. 'Order tracking' feature where customer can track his/her e-ticket or flight schedule was also perceived useful, in pre-adoption scenario, from all of the respondents. 'Feed back' in certain cases can also be valuable for all of the cases according to their response in pre-adoption (b) scenarios. Over all this part of the table shows that customers perceive value from all of the adopted features where as their responses to pre-adoption of features were also positive except case-3 who does not like to read 'FAQs' and to give 'feed back.'

Conclusion

The Study reveals the fact that for customers almost ever website was easy to browse and the features which they were using were also common on all the websites, the primary thing which induces the customer to purchase from certain travel website was 'cheaper fares.' At the same time customers wanted to read other customers experiences with the travel company on 'online forums' to get the better understanding of real time situation hence this could effect on their purchase decisions. Customers do believe that 'loyalty programmes' are beneficial for those travelers who travel more therefore customers prefer to buy cheaper tickets and do not want to be a member of 'loyalty programmes.' All these points show that there is a great competition online among travel companies because for the customers presence of e-CRM features is the same on each website and they are searching for cheaper tickets. But on the other hand when customers could not solve their problems after purchasing tickets they become dissatisfied and this dissatisfaction can cause customer defection. Therefore importance of providing efficient post-purchase features is also observed in this study.

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Brand Loyalty Measurement
A Framework

Sancharan Roy

A b s t r a c t

Brand loyalty audit framework is proposed in this research paper. This model uses a tri-dimensional approach to brand loyalty, which includes behavioural loyalty and the two components of attitudinal loyalty: the emotional and the cognitive. In allowing different levels and intensity of brand loyalty, this tri-dimensional approach is important from a managerial perspective. It means that loyalty strategies that arise from a brand audit can be made more effective by targeting the market segments that demonstrate the most appropriate combination of brand loyalty components. This model has three dimensions (emotional, cognitive and behavioural loyalty) and two levels (high and low loyalty) to facilitate a brand loyalty audit. Finally one hypothetical brand loyalty audit is proposed and this hypothetical brand loyalty audit is explained with Airlines Industry.

R esearchers have done lots of research on single-dimension and two-dimensional approach of brand-loyalty audit (DeWitt et al, 2008; Bandyopadhyay and Martell, 2007; Rundle and Bennett, 2001). In two-dimensional approach, they divided brand loyalty into attitudinal brand loyalty and behavioural brand loyalty. Attitudinal brand loyalty means the consumers' psychological commit-ment to repurchasing the brand, whereas behavioural brand loyalty is concerned with the action of repurchase. This model has been very useful in the past but East et al (2005) mentioned that it was not an effective predictor of three core marketing outcomes (i.e. recommendation, search and retention) in a consumer context. Russel-Bennett et al (2007) found that attitudinal loyalty in the B2B sector explained only a small

percentage of the variance in behavioural loyalty. So attitudinal loyalty can be divided into two sub-components: emotional and cognitive loyalty, which when added to behavioural loyalty is a three-dimensional approach to loyalty (Worthington et al, 2010). This approach can be explained in the following manner.

This model is an extended version of Oliver's (1999) conceptual work by examining both cognitive and emotional loyalty as well as behavioural loyalty.

This paper starts with an explanation of the three dimensional approach of brand loyalty audit, the proposition for an academic framework, and the managerial applications required to implement the matrix. Finally, this matrix is applied to the airlines industry.

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Brand Loyalty

According to Aaker (1991) brand loyalty reflects how likely a customer will be to switch to another brand, especially when that brand makes a change, either in price or product features. David Aaker also suggests that brand loyalty leads to brand equity, which leads to business profitability. Aaker divides brand equity into five major asset categories: brand name awareness, perceived quality, brand associations, brand loyalty and other proprietary brand assets. Figure 1 shows a general overview of how brand equity spawns value and provides the different ways in which the brand equity assets create value. Moreover, brand equity creates value not only for the customer but also for the firm. Finally, for assets or liabilities to inspire brand equity, they must be linked to the name and symbol of the brand, and if there is a change in name or symbol, this may cause some or all assets and liabilities to be affected. Customer-based brand equity is defined as the discrepancy effect of brand knowledge on consumer reaction to the marketing of the brand.

Figure 1: How Brand Equity generates Value (Adapted from Aaker)
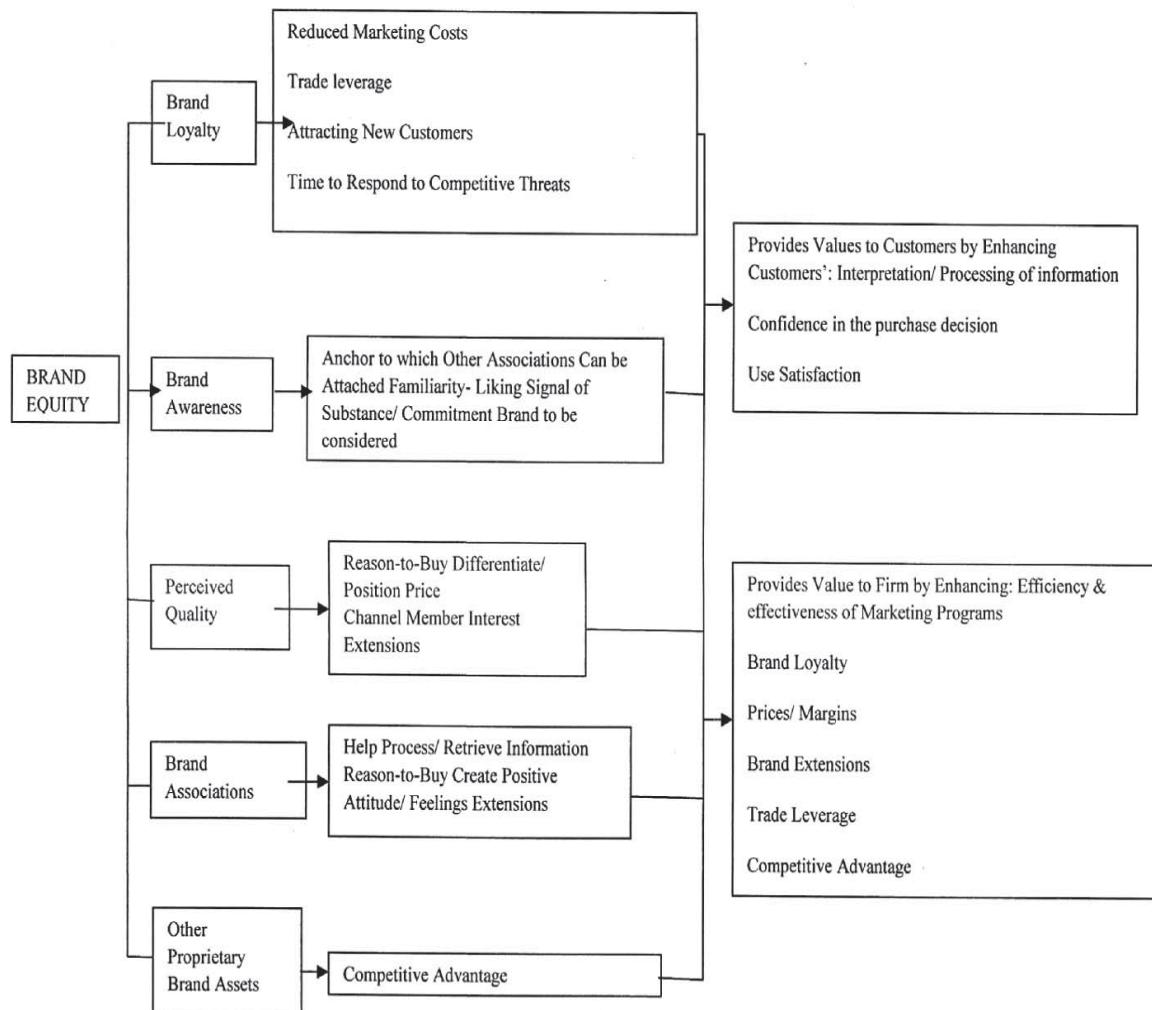
Brand and customer loyalty is a buyer's overall attachment or deep commitment to a product, service, brand, or organization (Oliver 1999). The loyalty concept is similar in meaning to relationship commitment, which is described by the relationship marketing literature as an enduring desire to be in a valued relationship (Morgan and Hunt 1994). Loyalty manifests itself in a variety of behaviours, the more common ones being recommending a service provider to other customers and repeatedly patronizing the provider (Fornell, 1992).

Loyalty is a prime determinant of long-term financial performance of firms (Jones and Sasser, 1995). This is particularly true for service firms where increased loyalty can substantially increase profits (Reichheld). Service firms focus on achieving customer satisfaction and loyalty by delivering superior value, an underlying source of competitive advantage (Woodruff, 1997). For service firms the challenge is identifying the critical factors that determine customer satisfaction and loyalty (McDougal and Terrence, 2000).

There are many advantages of brand loyalty. According to Delgado-Ballester and Munuera-Aleman (2001) the interest in brand loyalty derives from the value that loyalty generates to companies in terms of:

♦   A substantial entry barrier to competitors,

♦   An increase in the firm's ability to respond to competitive threats,

♦   Greater sales and revenue, and

♦   A customer base less sensitive to the marketing efforts of competitors.

Further, Rowley (2005) identifies the benefits of brand loyalty as:

♦   Lower customer price sensitivity,

♦   Reduced expenditure on attracting new customers, and

♦   Improved organizational profitability.

Caudron (1993) and Olsen (1997), however, argue that the ever-increasing proliferation of brands, price competitiveness, and the strength of own label brands have all worked to drive down brand loyalty. It has been suggested that a loyal customer is an oxymoron in today's market place. Research has shown that there is a 50 percent chance that a consumer will switch from their normal brand to a competitor's brand, which is on promotion, and furthermore that two thirds of shoppers claim to always compare prices before choosing a product (Pressey and Mathews, 1998).

Keller proposes a model of brand equity by brand knowledge, which is shown in Figure 2. This model is comprised of brand awareness (brand recognition and recall achieved through marketing stimuli) and brand image. Brand image is detailed largely in the model as it has a complex nature. Thus, brand image results from the favourability, strength, uniqueness and types of brand associations held by the customer. In the model, Keller depicts various types of brand association: attributes (product-related and non-product related), benefits (functional, experiential and symbolic) and attitudes.

Three Dimensional Matrixes

Human behaviour is a collection of one or more of three types of responses: behavioural responses (I do), cognitive responses (I think) and emotive responses (I feel). Brand loyalty is the combination of a consumer's thoughts and feelings about a brand that are expressed as an action (Härtel et al, 2008).

The above diagram explains the three dimensional model of brand loyalty. According to Oliver (1999), cognitive loyalty is a loyalty based on information such as price and features. Härtel et al (2008) expanded this definition by defining cognitive loyalty as 'psychological preference for a brand consisting of positive beliefs and thoughts about purchasing a brand on the next purchase occasion.' Emotional loyalty is the degree of positive feelings aroused by repurchasing a brand (Oliver, 1999). Härtel et al (2008) defined emotional loyalty as 'affective commitment to a brand consisting of positive feelings about and attachment to purchasing a brand on the next purchase occasion.' Hammond (1996) mentioned that behavioural loyalty is the consumer's tendency to repurchase a brand, revealed through behaviour that can be measured and which impacts directly on brand sales. Behavioural loyalty can be expressed as brand preference (that is expenditure on a particular brand as a proportion of the total spends on a product category or as brand allegiance (that is expenditure on a brand over time).

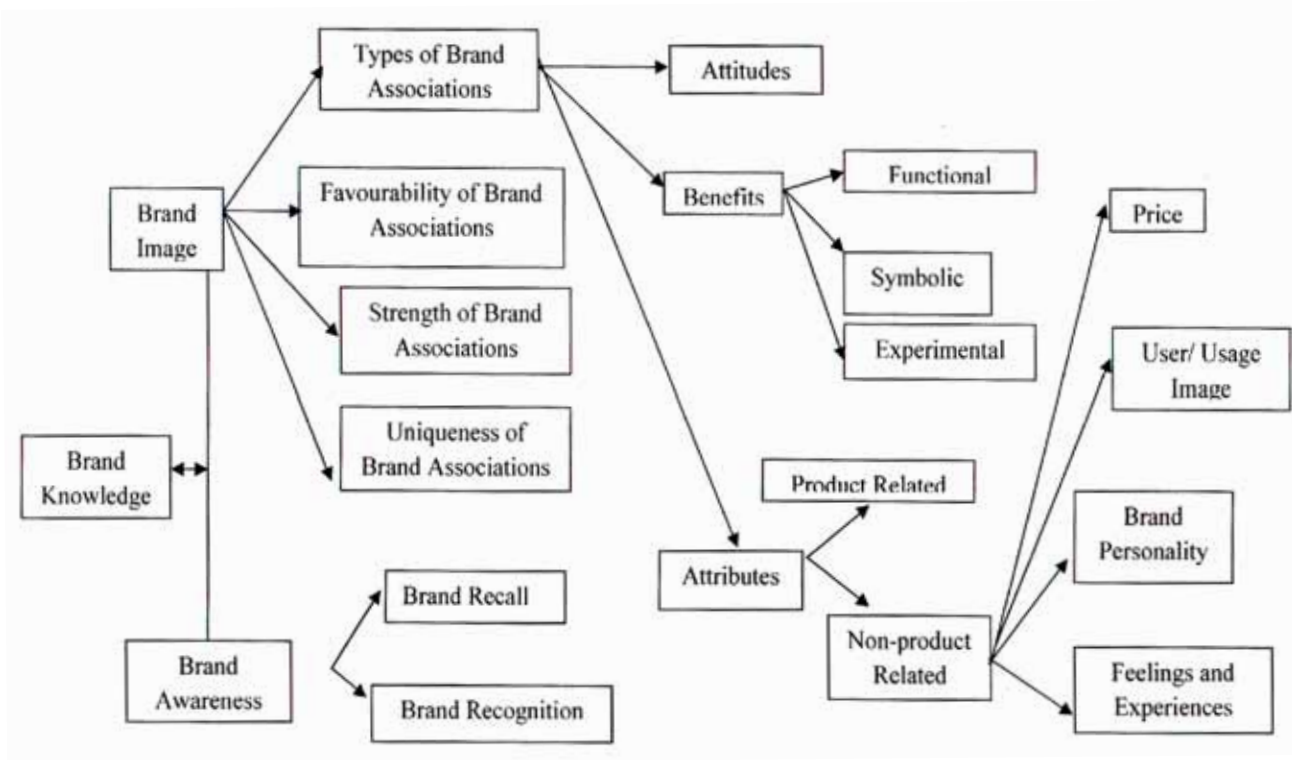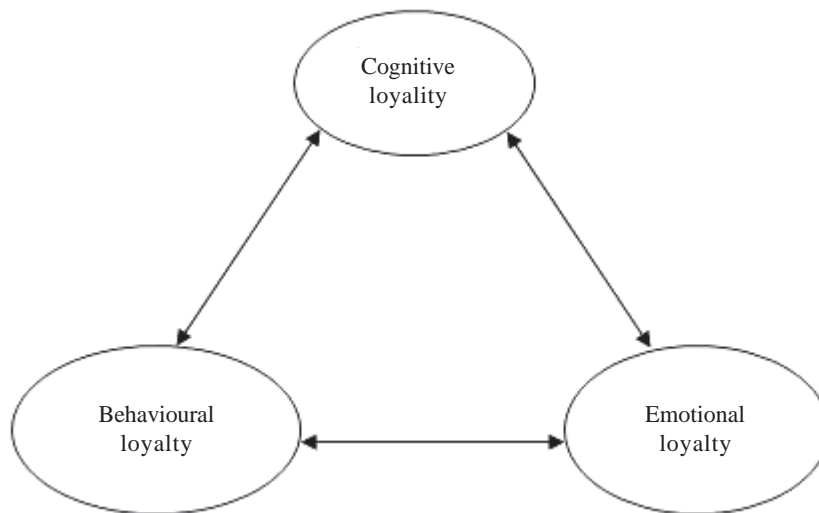**Figure 2: Brand Knowledge. Adapted from Keller**

Figure 3: Three Dimensional Model of Brand Loyalty

Managers must understand all these three dimensions of the brand loyalty and how it helps to measure the brand loyalty. Once the levels for each dimension are identified, managers can develop marketing strategies.

Three Dimensional Brand Loyalty Audit

TNS Global, a market research firm, offers a product called The Conversion Model, which uses behavioural loyalty and psychological commitment to segment consumers into four groups based on usage. Jackson (2006) mentioned that segmentation is an important part of the brand loyalty audit. Worthington et al (2010) proposed a brand loyalty audit framework which segments consumers into eight combinations of loyalty using the three dimensions of loyalty. This is a significant contribution to both theory and practice as there is a little evidence of academic or proprietary brand loyalty models that use emotional, behavioural and cognitive loyalty as the basis for segmentation. The final audit is showed in table 1.

Table 1: Brand Loyalty Audit (source: Worthington et al, 2010)

	High Emotional Loyalty		Low Emotional Loyalty	
	High Cognitive Loyalty	**Low Cognitive Loyalty**	**HighCognitive Loyalty**	**Low Cognitive Loyalty**
High Behavioural Loyalty	Stable loyals	Passionate loyals	Functional loyals	vulnerables
Low Behavioural Loyalty	Hot potentials	Hopefuls	Cold potentials	Disloyals

The main objective of the marketing managers is to achieve high levels of brand loyalty in all three dimensions. Behavioural loyalty is the most essential among all three dimensions. But it is not possible to achieve high levels of both emotional and cognitive loyalty, if resources are not adequate. So each organisation should determine which dimension is critical for them to gain competitive advantage and then focus its marketing programmes on these. In an ideal world with all adequate resources, all three dimensions are essential but as this is rarely the case, choices must be made and resources prioritized to the areas that need it most.

To measure the three-dimensional brand loyalty, three steps to be followed by the marketing managers. The first step is to undertake proper market research to determine the current brand loyalty levels for a particular brand. Next step is to make the priority segments of the consumers and develop proper marketing strategies to maintain or create loyalty. Last step is to measure the effect of the intervention which was a success or which can be modified later.

Step 1: Determine Current Brand Loyalty Levels

First step is to measure the current levels of emotional, cognitive and behavioural loyalty for a brand in order to identify the percentage of consumers in each segment and describe these consumers. Härtel et al (2008) described the scales for measuring emotional and cognitive loyalty on a variety of goods and services. The measures of behavioural loyalty can be varied based on different levels. A high or low rating must be assigned for each dimension of loyalty per consumer based on cutoffs that are determined by the marketing research team. Each consumer must have three ratings (one per dimension) so that each segment can then be measured and the brand audit matrix can be completed.

Step 2: Make Priority Segmentation and Develop Strategies

Second step is to make the priority segmentation with respect to the all eight dimensions and according to that organisation

should make proper marketing strategies. If the brand loyalty is low, it should be increased with the help of proper strategy. If the brand loyalty is on the higher side, marketing manager should maintain it. Segment size and growth potential, attractiveness, and company objectives and resources- these are the three measurement criteria of market segmentation (Kotler et al, 2007). Eight segments are the following:

Stable Loyals: Consumers who have high scores on all three dimensions of loyalty are called stable loyals. This is also similar to 'True loyals' (Dick and Basu, 1994). These consumers like your brand, have evaluated your brand positively and buy your brand regularly over other brands (Dick and Basu, 1994; Rauyruen and Miller, 2007). Oragansations need to focus on retaining 'Stable loyals' and develop proper reward programmes to thank consumers for their loyalty. Recent research shows that more than 75 percent of the consumers will consult a friend before deciding on the purchase of a certain product or service. So it has become evident that large organisations are beginning to appreciate the importance of word-of-mouth marketing. So definitely stable loyals are likely to engage in positive word-of-mouth marketing for the brand and act as brand advocates.

Passionate Loyals: These consumers have high behavioural loyalty and high emotional loyalty but have low cognitive loyalty. These products are likely to be purchased for enjoyment or entertainment (movies, sports), where the value derived is emotional in nature (Holbrok, 2006). These consumers have automated their purchase and unlikely want to engage in thinking, so marketing programmes need to minimize effort. Strategies that remain with minimum effort and offer emotional appeal are likely to retain the consumer.

Hot Potentials: Consumers with high emotional loyalty and high cognitive loyalty but with low behavioural loyalty are the 'hot potentials.' These consumers like your brand, have evaluated your brand positively but do not buy your brand either at all, or regularly. So marketing managers have to understand the requirements of these consumers and also find the reasons behind this. Uncles et al (2003) mentioned that there may be situational factors, social norms, consumer characteristics or aspects of the marketing programme that are preventing the consumer from buying the brand.

Hopefuls: These consumers like your brand, but they do not buy it and do not have positive thoughts about being loyal. These consumers have less buying power or less access to the product and thus may not be a profitable segment (Bandyopadhyay and Martell, 2007). It is quite possible that these consumers may have wrong information or misperceptions about the organisation, its product and features. Strategies for this segment could be low-cost to the organisation but might appeal to the senses or be available for purchase.

Vulnerables: These consumers buy the product but they do not have any emotional attachment to it and may not intend to repurchase the product. According to Dick and Basu (1994), these consumers exhibit 'spurious' loyalty, where people are loyal on the basis of inertia, leaving them open to a better competitive offer. Marketing managers should improve the low emotional and low cognitive loyalty of Vulnerables.

Functional Loyals: These consumers have low emotional loyalty. So these consumers buy the brand regularly and engage in decision-making about the brand; however, they have no emotional attachment to being brand loyal. Strategies to retain these consumers involve offering value-added Promotions That Have Rational Appeal Such As Newsletters.

Cold Potentials: These consumers have a high opinion on your brand; but they have no emotional attachment and do not purchase the brand.

Disloyals: These consumers do not have any kind of loyalty in any dimension. Marketing managers should give them very low priority.

Current scenario of Airline Industry

Indian airline industry suffered from over-capacity and intensive competition. Airline revenues have fallen sharply. There was strong competition from road and rail services. There was a rise in various costs. One complaint was that the ATF cost in India is higher as compared to international prices; by at least 30 percent due to certain taxes (one estimate puts this difference to up to 70 percent). Domestic airlines were suggested to require fleet rationalization. In the case of Air India (AI), the public carrier operating international routes, it has been found that it faced, apart from high fuel prices, increased interest burden of new aircraft orders, personnel shortages,

inability to cope with competition and a worsening image. AI and Indian Airlines (IA), the public carrier operating domestic and Persian Gulf routes, had extreme capacity constraints. 60 percent of AI, IA aircraft acquisition was for replacement of old aircrafts and only 40 percent was for growth. NACIL (the entity emerging out of AI-IA merger) is exploring an equity infusion from government to meet its capital needs. Air Deccan suffered from, according to observers, a poor performance record. Under Kingfisher it provided comforts of full service carriers even as it charged fares of low cost carriers. A survey showed the brand value of Air Deccan at the bottom, below SpiceJet and IndiGo. It was attributed to poor on-time performance, ground handling and in-flight services.

Table 2: Players in the Airline Industry

Airline	Year of Commencement	Nature of Service	Current Status	Year of Closure
Air India (AI)	1946	Full	Running	
Air India Express	2005	Low Cost	Running	
Air Sahara	1993	Full	Merged with JA	2007
Alliance Air	1996	Full	Defunct	2007
Air Deccan (AD)	2003	Low Cost	Merged with KA	2007
GoAir	2004	Low Cost	Running	
Indian Airlines	1953	Full	Merged with AI	2007
Indigo Airlines	2006	Low Cost	Running	
Jet Airways (JA)	1995	Full	Running	
Jet Lite	2007	Low Cost	Running	
Kingfisher Airlines (KA)	2005	Full	Running	
Paramount Airways	2005	Full	Running	
SpiceJet	2005	Low Cost	Running	
Damania Airways			Defunct	
East-West Airlines	1992		Defunct	
ModiLuft	1994		Defunct	1996
NEPC Airlines			Defunct	

Application of the Model in Airlines Industry

Today's airline companies have started to employ various marketing methods and strategies in an intensely competitive environment where product and service differentiation is becoming harder and harder. The number of rival companies is increasing and a new notion of customer whose wants and expectations are increasing day by day is emerging. In order for airline companies operating in domestic lines to determine methods and strategies appropriate for themselves, they have to identify accurately the characteristics of the market in which they provide service. They particularly have to ensure customer value, which is defined as providing products and services with qualities different from rival airlines and with most benefit and lowest price. It is clear that, in addition to ticket price, criteria such as schedule, convenience of schedule, convenience of flight route, aircraft type, aircraft comfort and design, services and criteria related to comfort such as catering services and behaviour and attitude of personnel and other service features such as quick reservation and meeting special requests in check-in and boarding procedures are also influential in creating value for customers and ensuring customer loyalty. Airlines operating in domestic lines have to determine the services and criteria regarded important by customers accurately and in line with customer expectations.

The first step is to measure current brand loyalty levels in airlines industry. The results of a hypothetical market research exercise, including the hypothetical profiles for each segment for the brand are shown in Table 2.

Second step is to make the priority segmentation with respect to the all eight dimensions and according to that organisation should make proper marketing strategies. If the brand loyalty is low, it should be increased with the help of proper strategy. If the brand loyalty is on the higher side, marketing manager should maintain it. Segment size and growth potential, attractiveness, and company objectives and resources- these are the three measurement criteria of market segmentation (Kotler et al, 2007).

Table 3: Hypothetical Brand Loyalty Audit

	High Emotional Loyalty		Low Emotional Loyalty	
	High Cognitive Loyalty	**Low Cognitive Loyalty**	**High Cognitive Loyalty**	**Low Cognitive Loyalty**
High Behavioural Loyalty	Stable loyals (15%) Consumers feel positive about the brand, and believe it as a good choice and prefer to use it.	Passionate loyals (10%) Consumers gain emotional benefits from using the brand, but they may not be aware of the functional benefits.	Functional loyals (5%) Consumers gain functional benefits and do not seek emotional value.	Vulnerables (25%) Consumers use this brand habitually, but they have no emotional or cog-nitive commitment.
Low Behavioural Loyalty	Hot potentials (5%) Consumers feel positive about using this brand, and believe it as a good choice but use other brands while purchasing.	Hopefuls (15%) Consumers feel positive about using the brand but are not aware of the functional benefits, and use other brands while purchasing.	Cold potentials (20%) Consumers understand the benefits of using the brand but do not gain any emotional value from loyalty, and use other brands.	Disloyals (5%) These consumers are one-time user of the brand and currently are not using the brand.

Using the data in table 2, the segments of hopefuls, hot and cold potentials have been picked up and identified as having high growth potential. But these segments of consumers do not currently use the organisation's brand as their first choice. On the other hand, vulnerables is the largest segment and is deemed to be most at risk. Any loss in this segment would adversely affect profitability.

Marketing managers can convert hot potentials into stable loyals by offering them value-for-money services. They can offer extra discounts and other earn-a-mile programme.

Hopefuls' segment consumers feel positive about using the brand but are not aware of the functional benefits, and use other brands when purchasing. As this segment is already emotionally committed to being loyal, the proactive approach can be leveraged to encourage behavioural loyalty. It is also important to understand for marketing managers that they should not invest too much in this segment.

The cold potentials understand the benefits of using the brand but do not gain any emotional value from loyalty, and use other brands. So they are showing low emotional loyalty. This is the second largest segment, so proper marketing strategy can attract them to become stable loyals to the brand.

The vulnerables segment has both low emotional and low cognitive loyalty. So marketing managers should handle these consumers with different strategy.

Cognitive loyalty could be addressed by informing the consumers of the existence and value of the brand. Emotional loyalty could be increased by offering them bonus services as well as offering free gifts for the whole family.

The segmentation is totally based on company's objectives, the resources available and attractiveness and size. In the above example, it is assumed that the company is growth-oriented. So the target segments will be hot potentials, hopefuls and cold potentials.

Step 3: Evaluate Strategies

The final and most important step is to evaluate the strategy. So each and every segment is formed and proper strategy should be applied. If any problem arises, the modification of strategy is required.

Conclusion

Oliver's (1999) conceptual paper is expanded into three dimensions i.e. cognitive, emotional and behavioural loyalty. These three dimensions are further divided into eight segments with respect to segment size and growth potential, attractiveness, and company objectives and resources (Kotler et al, 2007). This hypothetical model will assist academics to do the research on the inter-relationship between the three core dimensions of loyalty. From a managerial point of view, this model also offers a proper marketing methodology that allows managers to identify loyal consumers and divide them into segments with respect to their loyalty levels. This will also be helpful for marketing managers to adopt different marketing strategy for different segments. With the help of this strategy, they can improve the loyalty levels of the consumers which will improve the organizational profitability (Delgado-Ballester and Munuera-Aleman, 2001; Rowley 2005). Three dimensions have been used for segmentation. Airlines Industry is picked up to explain the model. The audit is explained with the help of hypothetical data. This brand loyalty model can also be used for:

1. An analysis of competitors' customers could be conducted and the results presented in the audit could be comparing with that. This will provide a gap analysis and with the help of this, we can find the weakness of the competitors which will help to increase the brand loyalty of the organisation.

2. Multiple brands within a product line or different SBUs within an organisation could be presented in the audit to allow relative comparisons, strengths and weaknesses to be identified.

3. This audit can be useful to the organisation that offers new products/ brands which will help to understand the feedback of the consumers.

This brand loyalty framework has some limitations which do raise opportunities for future research. First, this model is not yet checked and it requires validation across different products and industry. Future research is required to empirically search how different organisations would use the audit and the implication of its findings. Strategy formulation step can be varied in different organisations. So proper modification of strategy is required. Marketing managers should check all the segments and according to that strategy should be formulated.

Keywords: brand loyalty, brand loyalty audit, behavioural loyalty, emotional loyalty, attitudinal loyalty, cognitive loyalty, airlines.

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Skimming and Scanning
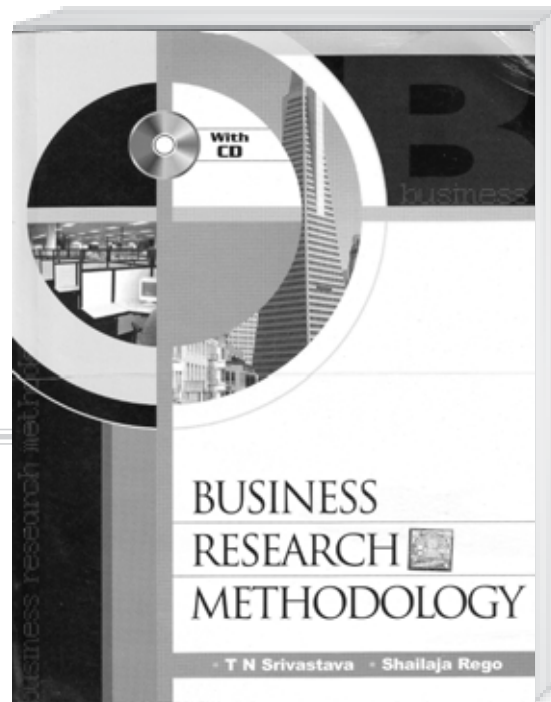
Book Title	:	*Business Research Methodology*
Authors	:	**T. N. Srivastava and Shailaja Rego**
Edition	:	**2011**
ISBN-13	:	**978-0-07-015910-5**
Publisher	:	**Tata McGraw-Hill Publg. Co. Ltd., New Delhi.**

The book titled *Business Research Methodology* by T. N. Srivastava and Shailaja Rego is an interesting book in the area of research. It can serve as a good text book for MBA students who pursue the subject of Business Research Methodology. This book is a right choice for beginners of the subject and for those who would like to refresh their fundamentals. The book is divided in to sixteen chapters.

Chapter One, Two, and Three give an overview of the process in conducting good research. Chapter Four gives a comprehensive knowledge about the various experimental and research designs. Chapter five is all about measurement scales. This chapter discusses mainly the four types of measurement scales namely: Nominal, Ordinal, Interval and Ratio. Chapter Six and Seven explains primary and secondary data with their respective advantages and disadvantages. These chapters describe the various sources of primary and secondary data and also the methods for collecting the same. In Chapter Eight to Thirteen data analysis and presentation is being discussed. Statistical techniques, their relevance and uses for designing and marketing of various products and services are the theme of Fourteenth Chapter. Fifteenth Chapter provides useful guidelines on effective report writing. The last chapter which includes a tabular presentation of ethical issues involved at each step of research process, is outstanding.

Exclusive features of this book include:

- Indicative Topics for Business Research (Appendix 1)

- Excel Templates for various statistical formulas (Appendix 2)

- Introduction to IBM SPSS Statistics 18 (Appendix 3)

- CD containing various data sets

- Faculty resources which includes Power Point presentations,

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additional examples and solutions to various exercises.

As claimed by the author, the book is suitable for anyone looking to read an introductory book on research methods. It is short and snappy and yet motivating, providing the right amount of details to appreciate the subject on Business Research for the beginners. It also provides sources leading them to more comprehensive information and advanced learning in the area of research methods.

Skimming and Scanning

Book Title	:	*Financial Management Text, Problems, and Cases*
Authors	:	**M. Y. Khan and P.K. Jain**
Edition	:	**Sixth - 2011**
ISBN-13	:	**978-0-07-106785-0**
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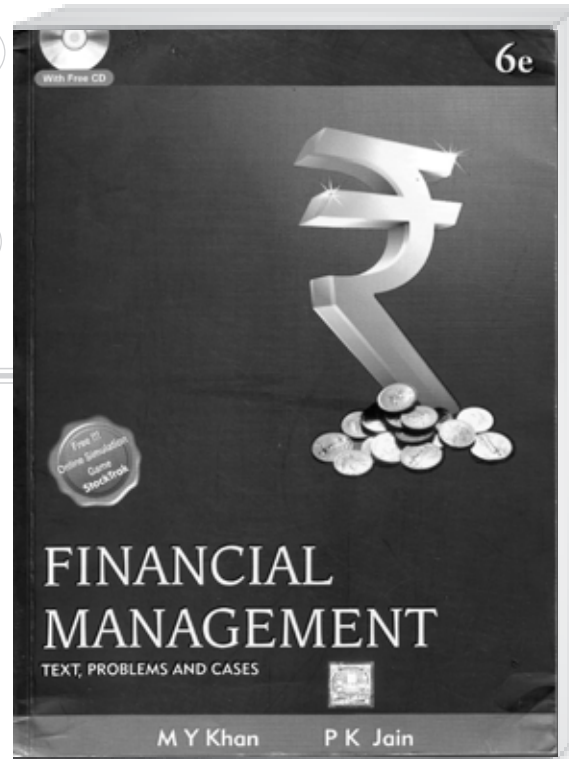
The essence of success of any business organization is successful financial management. Even though each department in any business organization is equally important, what will be the fate of the organization if the finance department is important but not effective? We all know that what had happened in the US during last three years and what kind of financial management has led to the crisis. The miserable failures of financial giants in the US remind us of the added importance of an effective financial management system in every organization. With this in mind I have reviewed the new edition of the Book" Financial Management" written by two famous authors, who are veterans in 'financial studies.'

Reviewed by A. V. Jose, Associate Professor, SCMS School of Technology and Management Muttom, Kalamasserry, Cochin-683106, Email: joseav@scmsgroup.org

Financial Management is the management of the finance of a business / organisation in order to achieve financial objectives. Taking a commercial business as the most common organisational structure, the key objectives of financial management would be to:

- Create wealth for the business
- Generate cash, and
- Provide an adequate return on investment bearing in mind the risks that the business is taking and the resources invested.

There are three key elements to the process of financial management:

(1) Financial Planning

Management need to ensure that

enough funding is available at the right time to meet the needs of the business. In the short-term, funding may be needed to invest in equipment and stocks, pay employees and fund sales made on credit.

In the medium and long term, funding may be required for significant additions to the productive capacity of the business or to make acquisitions.

(2) Financial Control

Financial control is a critically important activity to help the business ensure that the business is meeting its objectives. Financial control addresses questions such as:

*   Are assets being used efficiently?
*   Are the businesses assets secure?
*   Do management act in the best interest of shareholders and in accordance with business rules?

(3) Financial Decision-making

The key aspects of financial decision-making relate to investment, financing and dividends:

*   Investments must be financed in some way – however there are always financing alternatives that can be considered. For example it is possible to raise finance from selling new shares, borrowing from banks or taking credit from suppliers.

*   A key financing decision is whether profits earned by the business should be retained rather than distributed to shareholders via dividends. If dividends are too high, the business may be starved of funding to reinvest in growing revenues and profits further.

This book provides insights into the above mentioned key elements of financial management processes and gives guidance for effective use of various tools, which are time tested for effective management of finance of any organization.

This book has been broadly divided into ten (10) parts, systematically arranged and presented clearly, supported by adequate problems and cases for a clear in-depth understanding of the vast subject of financial management. The real-life solved problems given by the authors at the end of each chapter are really enriching for the students as well as the teachers.

Part 1 of the book provides a very good foundation of Finance which is comprehensible even for a student new to Finance stream. Apart from an overview of financial management, Part 1 covers chapters on Time, Value of Money, Risk and Return and Valuation of Bonds and Shares.

Part 2 of the book includes tools for Financial Analysis, Profit Planning and Control with chapters on Cash-flow Statement, Financial Statement Analysis, Volume-Cost-Profit Analysis and Budgeting.

Part 3 of the book provides a lot of guidance on Long-term Investment Decisions and for this Chapters on Capital Budgeting, Measurement of cost of capital, Analysis of Risk and Uncertainty are included.

Part 4 mainly deals with Current Assets Management techniques which are gaining importance day by day in this fast changing world.

Part 5 gives advanced theories on capital structure, Leveraging theories and also guides the reader on designing a capital structure. This part is highly informative and gains significance in the light of current business consolidations and restructuring in the corporate world.

Part 6 concentrates on Long term financing for business entities and covers Capital Markets and its various elements including Hybrid financing /Instruments, Lease and Hire purchase Finance, Venture Capital Financing etc.

Pat 7 deals with Risk management with Chapters on Option Valuation, Derivatives and Management of financial risk etc. In the Chapter Corporate Governance, 2009-guideline known as Corporate Governance (Government) Guidelines 2009 has been included as an addition to update the current edition.

Part 8 comprises Dividend decision as one of the main parts of financial decision making and includes chapters on Dividend and Valuation and Dividend Policy and its determination.

Part 9 gives a very good idea about Business valuation which is very relevant in the era of mergers and acquisitions. It covers another important subject on Corporate restructuring detailing the framework and tax aspects in Mergers and Acquisitions.

Part 10 comes as a bonus to every student/teacher who uses this book as it covers a short but clear description about Foreign Exchange Markets and Dealings, Forex exposure and Risk management and also International Financial Management. The authors have very intelligently included this part also in the book as no business is possible now a days without a single element of foreign exchange as we all are already a part of the global village.

As the financial management discipline is constantly changing, the authors have taken special efforts to include the most relevant up to date information in the book. The presentation of each chapter is well done and the design is highly impressive. The conceptual explanations with illustrations along with practical problems and cases will surely benefit the target audience.

I am sure that the target group consisting of students, teachers of finance and researchers in finance will find this book as a professionally written and designed piece of work which will assist them in their professional/ academic journey.

Skimming and Scanning

Book Title	:	*Enterprise Resource Planning Text & Cases*
Authors	:	**Rajesh Ray**
Edition	:	**2011**
ISBN-13	:	**978-0-07-070088-8**
Pages	:	**602**
Publisher	:	**Tata McGraw-Hill Publg. Co. Ltd., New Delhi.**
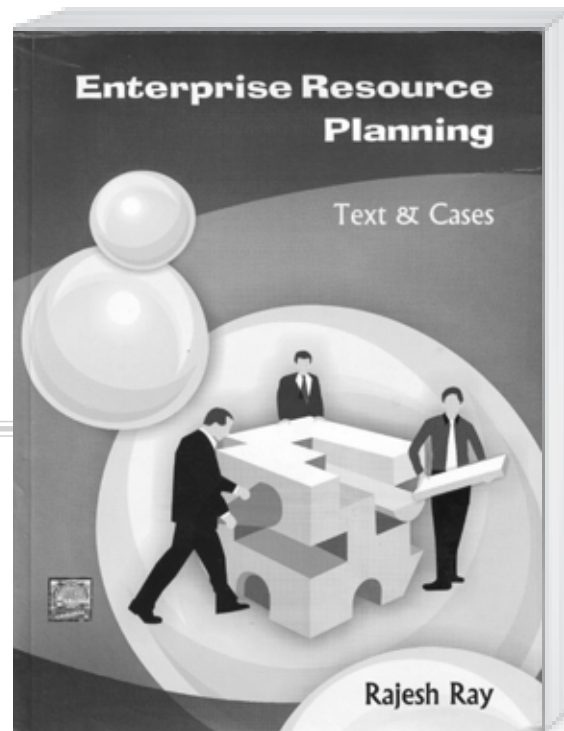
Enterprise Resource Planning (ERP) implementation is gaining prominence in all sectors today and has become a key requirement for firms to become more efficient and competitive.

ERP systems can integrate different types of data into a single database, which can be accessed and managed by different functional processes or transactions. A global business with distributed partners, customers and employees can definitely benefit from an ERP implementation and so knowledge of ERP is vital for any manager or a management student aspiring to be a professional manager.

Mr. Rajesh Ray, with his rich experience in this industry, has come up with his book on ERP where he presents the various aspects of ERP along with other enterprise applications like Supply Chain Management (SCM), Customer Relationship Management (CRM) and Product Life-cycle Management (PLM) in a very lucid manner.

The book is divided into six main sections:-

Introduction to ERP and Enterprise Applications,
Implementation and Support,
ERP Functional Modules,
Technology Areas of ERP and Enterprise Applications,
ERP for different type of industries,
Case studies from Indian and international context.

The first section gives the definition of ERP and provides an overview of the relevance, history and benefits of ERP for today's enterprises which is very useful for anyone new to this concept.

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Section two provides all aspects of ERP implementation and support with dedicated chapters for each important area/phase. It starts with the ERP Life Cycle, preparation of a Business Case with Return on Investment Analysis and proceeds to issues like selection of a consultant and that of the ERP package from a wide variety of products available in the market. Another important aspect covered here is the Project Management approach and the various PM activities needed for a successful ERP implementation. The importance of Requirements analysis is highlighted here. The concepts of Business Process Reengineering (BPR), Business Process Modeling (BPM) and Business Modeling (BM), the relevance of using these processes and the tools used in these areas are described in detail.

This is followed by a chapter on Gaps identification and strategies to bridge the gaps. Some details on Configuring and Testing the ERP are also covered. The other important aspects like management of information security, data migration are also highlighted.

Another chapter is dedicated for Cutover Planning and Go Live Preparation. Training and Change Management aspects and ongoing application support are also covered. Success ingredients and lessons learnt from failures are also described in detail.

Section three covers the various functional areas of ERP in detail, their integration and the practical issues that can crop up. These include Financial Management, Procurement and Inventory Management, Supplier Relationship Management, Production Planning and Execution. Supply Chain Planning, Sales and Service, Logistics Execution, Warehouse and Transport Management. Areas like Customer Relationship Management, Quality Management, Maintenance Management and Enterprise Asset Management and Product Lifecycle Management are also dealt in detail.

Section four is dedicated for the technologies used in ERP like Portal, Content Management, and Knowledge Management along with Data Warehousing, Data Mining, Business Intelligence and Analytics which add value. The emerging trends like SAAS, SOA, RFID, M Commerce etc are also dealt in general in this section.

In section five, ERP implementation for specific industries like manufacturing, service are detailed. The market leaders, their offerings and specific strengths are also covered here.

The last section i.e., section six gives a few case studies which can be used to reiterate the leanings from the previous chapters.

This book is written in a simple and clear language to make people comfortable with such a vast topic and both beginners and experienced personnel are sure to get benefited from this. Very good practical examples are provided. Anybody working in ERP system will get all practical hints and guidelines regarding what, why, where, when and why of ERP implementation.

The book covers a lot of Project Management, Software Engineering and Testing content which is a bit confusing for the non-technical readers. These are separate areas handled by specialist groups for which lot of books are available. Hence ERP content along with references to such areas would have been better rather than trying to bring in all these areas under one fold.

Overall it is a good reading material for anyone trying to understand ERP in a holistic manner and wanting to be part of an ERP implementation. This book is also suited for post graduate level courses on business management and Information Technology.

SCMS JOURNAL OF INDIAN MANAGEMENT

Aims and Scope

The *SCMS Journal of Indian Management* is a **blind peer-reviewed Journal.** The Journal deems it its mission to submit to the readers fresh fruit of management thoughts and rich cream of current innovative research. The format of the Journal is designed reader-friendly. The academia and the corporates have an easy access to the Journal.

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§ What are the real-world implications of the proposed article? Can the central message be applied in businesses today, and if so, how?

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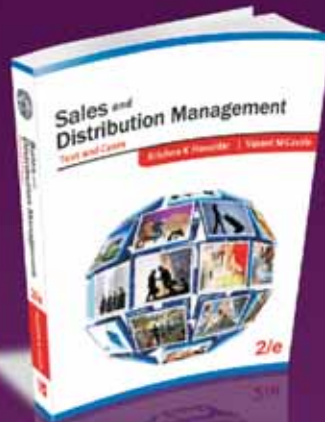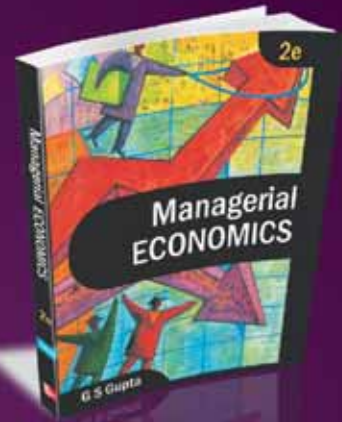
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