

Towards Understanding Symbiotic Relationship between Steel Industry and Refractory Industry

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Abstract

This paper brings out the symbiotic relationship between the steel and refractory industries in the global and Indian scenarios. The two industries are closely associated for technological and strategic reasons. Refractory products are essential for the production of all metallurgical and other non metallic mineral processing and manufacturing industries. The steel industry being the single largest consumer of refractory materials, the importance of the refractory industry cannot be measured by the annual turnover or consumption in tonnage alone. The critical role played by the refractory industry in ensuring the smooth running of the core sector – steel is vital and the inter-linkages in growth rates is thus generated by the interdependencies of these two industries. The value creation and innovations in these two mature industries are a joint process and they are subject to similar impacts of economic cycles. The similarities between the industries are brought out in this paper based on an in depth industry analysis. Although the impact of reduction in specific consumption is more pronounced for refractory industry, the thrust on new innovative products and applications helps in higher average realizations supported by increased special steel production/productivity gains to steel industry. Hence a healthy and innovative refractory industry is a strong growth factor for steel industry in as much as strong growth in steel industry and production is a key factor for survival and growth of refractory industry.

1. Introduction

Steel industry is the backbone for any economy as steel industry contributes to the development of infrastructure facilities like bridges, buildings, roads, railways, industrial construction, oil and gas pipelines, power generation equipment, power transmission and development of ports etc. in the economy. Steel industry is among the core infrastructure industries of the economy. Steel consumption is known to be a leading indicator of economic growth and the per capita steel consumption level signifies the state of the economy (in terms of developed, developing etc). Out of the overall savings in the GDP (about 30% in India), a significant part is channeled towards fixed asset investment-infrastructure etc for which about 50-60% of the cost of the construction is represented by steel.

Steel consumption and steel industry are closely linked to the economic growth rate. The relationship is broadly measured by the Elasticity of Steel with regard to GDP growth rate, and the intensity of steel consumption in the GDP which signifies the thrust on steel consuming

sectors and the share of GDP contributed by such sectors. For Indian economy, it is estimated the elasticity is 1.15, i.e. Steel consumption growth rate changes by 1.15 times of the GDP growth rate. Steel industry ensures availability of the basic construction material-steel and the economic climate and policy regime helps the investment into infrastructure projects including steel industry which typically have a longer gestation periods. Per capita consumption of Steel in India is 57 kg for 2011-12 which is much lower than the other developing countries like China (400 kg) and Brazil etc and the Global average of 220 kg in 2011. This reflects low infrastructure development and is indicative of the scope for further development of infrastructure in the country.

Refractory products are ceramics which can withstand temperatures well in excess of 400°C, while retaining their physical shape, strength and chemical characteristics. Refractory materials have to work under harsh conditions such as handling molten metals and reaction with corrosive slags and gases under high

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temperature and pressure. Refractory products (bricks/shapes/ powders) are installed on the inner surface of the metallic container in different layers (safety layers, working lining etc), thus preventing the molten metals coming in to contact with the metallic shell of the container.

The production processes at metallurgical industries like iron and steel, copper and aluminum and other industries like glass involve melting of raw ores etc in furnaces into liquid state, and their further refining etc. Although refractory items constitute about 1-2% of the value of production in different metallurgical industries, these cannot be substituted and hence their performance in terms of withstanding the adverse operating conditions is of strategic importance which is out of proportion to their specific cost. In fact, without refractory ceramics there would be no steel, cement, copper or glass. Traditionally, refractory products are manufactured from naturally occurring minerals such as bauxite, kyanite, magnesite, fireclay, chrome-ore etc. Lately, the industry is using man-made raw materials such as brown-fused alumina, tabular alumina, fused magnesia, silicon- carbide etc. Both natural and synthetic raw materials are used by the refractory industry.

Steel industry and refractory industry are closely associated for technological and strategic reasons. While refractory products are essential for any production for all metallurgical industries and other non metallic mineral processing industries, steel industry is the single largest consumer of refractory products. Both industries have their fortunes linked to the overall economic scenario. The economic growth contributes and is contributed by steel industry and steel consuming (infrastructure & capital goods) industries. Refractory products being a critical input to the steel and other metallurgical industries, the fortunes of refractory industry are closely linked to the steel industry cycles. Hence, there is symbiotic relationship between Steel and refractory industries.

The objective of this paper is to trace these two industries globally and in the Indian context as well to establish a symbiotic relationship between the two industries. In line with this objective, in the sections one and two, steel industry and refractory industries are reviewed

with regard to the production and consumption levels, growth potential, demand drivers, mutual dependencies and strategic managerial concerns. In the third section of this paper, the symbiotic relationship between the two industries is established. In the fourth section of the paper, discussion is generated to raise issues and identify potential areas for research.

2. Steel Industry in its Global and Indian Contexts

It is important to consider the steel and refractory industries in their global and Indian contexts before the symbiotic relationship existing between the two industries is examined. In this section, an attempt is made to review steel industry, and in the next section to review refractory industry. The steel industry in this section is presented in the global context first, and then against this global picture, the Indian steel industry is presented.

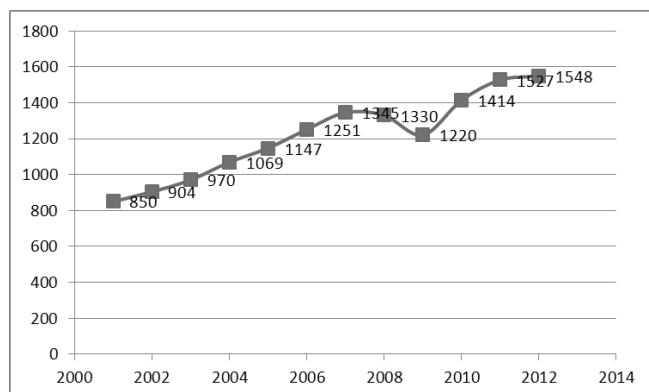
There has been significant consolidation in the global steel industry during the past decade. According to World Steel Association (2010), the top 5 producers contributed to 16.7% and top 15 producers contributed to 30.5% of global crude steel production. The number of producers from China increased to 6 in 2011 as against one in the year 2000. The number of Asia based producers among top 15 producers has increased.

The following table (1) and corresponding figures (1 & 2) reflects the production growth (function) in Global Steel and Global Refractory industries. The Compounded annual Growth rate during 2001 to 2012 was 6.8% for Crude Steel and 8.5% for Refractory products. The crude steel production in the world during 2012 was 1548 (MT) indicating a growth of 1.5% over 2011. The refractory production growth is the combined effect of more steel production from China (where the specific consumption of refractory in steel industry is more than that of the other developed world), reducing specific refractory consumption in steel industry in general and the increase in production in other refractory consuming industries like metals and cement /glass etc.

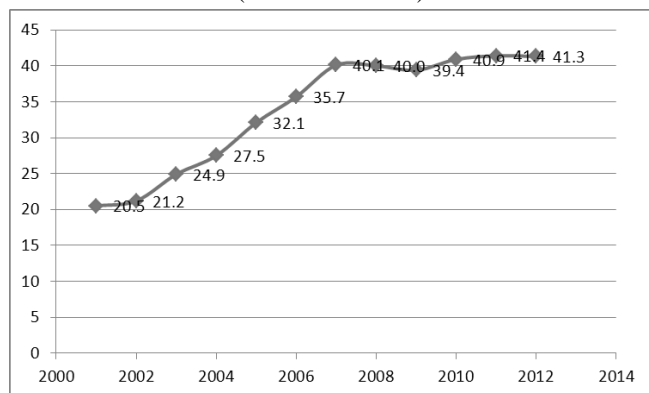
Table. 1: Global Steel and Refractory Production
(Million Tonnes)

Year	Global Crude Steel Production	Global Refractory Production
2001	850	20.5
2002	904	21.2
2003	970	24.9
2004	1069	27.5
2005	1147	32.1
2006	1251	35.7
2007	1345	40.1
2008	1330	40.0
2009	1220	39.4
2010	1414	40.9*
2011	1527	41.4*
2012	1548	41.3*

* Estimates of production from the projected growth rate from 2011-2016 by "Freedonia-2012"

Figure. 1: Global Crude Steel Production
(Million tones)

Source: PRE 2012

Figure. 2: Global Refractory Production
(Million Tonnes)

Source: PRE 2012

A comparison between the crude steel production in the world and the BRIC countries during the past six years is presented below (Table.2). The crude steel production in the world increased to 1547.8 MT in the year 2012 from 1345.4 MT in 2007. Much of crude steel production in the world came from China, and then USA and Japan. It is also interesting to note that Brazil, Russia, India and China (BRIC) contributed substantially to the crude steel production in the world. Their contribution to the crude steel production in the world increased from 48.1% in 2007 to 58.1% mainly contributed by China. India ranks 4th in crude steel production in the world after China, USA and Japan. Even among BRIC countries, the production growth rate in India has been consistently positive and is more than Brazil, and Russia. The growth of crude steel production in China is expected to decrease due to capacity rationalization and economic policy, while in India it is expected to increase due to additions to capacity and the thrust on infrastructure. It is expected (WSA,2013) that 70% of world growth in steel production over the next few years will come from the emerging markets, with China and India accounting for 40% of that growth.

Table. 2: Steel Production in BRIC Countries in comparison with the World Total Production (2007-2012)

Year	World Total MT	China	Russia	India	Brazil	BRIC	%BRIC
2007	1345.4	489.2	72.4	53.1	33.8	648.5	48.2
2008	1329.7	502.0	68.5	55.1	33.7	659.3	49.6
2009	1219.7	567.8	59.9	56.6	26.5	710.8	58.3
2010	1414.0	638.7	66.9	68.3	32.9	806.8	57.1
2011	1527.0	695.5	68.7	72.2	35.2	871.6	57.1
2012	1547.8	716.5	70.6	76.7	34.7	898.5	58.1

Source: World Steel Association (WSA), 2013.

The consumption of steel in the world during the year 2012 was 1413 MT, and is estimated to be 1454 MT in 2013 and 1500 MT in 2014. The share of Brazil, Russia, India, and China in the steel consumption in the world has increased to 55.2% in 2011 from 41.6% in 2005. Like in crude steel production, China has mainly contributed to this increase. The consumption in Japan, USA and Italy declined during last 3 years. The steel consumption for 2013 and 2014 are expected as under:

Table. 3: World's Consumption of Steel (2012-2014)

Region	ASU-MT			Growth Rate %		
	2012	2013 (f)	2014 (f)	2012	2013 (f)	2014 (f)
World (1+2)	1413	1454	1500	1.2	2.9	3.2
1.Developed Economies	389	390	400	-1.9	0.4	2.3
2.Emerging & Developing Economies	1024	1063	1101	2.5	3.9	3.5
Memorandum data:						
China	646	669	686	1.9	3.5	2.5
BRIC	785	814	838	1.9	3.7	3.0
MENA	63	65	70	2.2	3.2	7.1
World excl. China	766	785	815	0.7	2.4	3.8

Source: World Steel Association (WSA), April 2013

It is expected that China will have growth in steel consumption by 3.5% in 2013 and 2.5% in 2014. The BRIC countries are expected to have growth of 3.7% in 2013 and 3.0% in 2014, indicating that the growth in India, Brazil and Russia together is expected to be more than that of China. The developed countries are expected to have steel demand growth of 0.4% in 2013 and 2.3% in 2014. Emerging and developing economies are expected to contribute 73.1% of world demand for steel in 2013 and 73.4% in 2014 as against 72.5% in 2012. The growth in steel consumption will occur at a faster pace in developing countries and at a lower pace in the developed countries, due to shift in consumption to emerging economies which emphasizes infrastructure development and growth.

Globally about 70% of crude steel production is through Blast furnace (BF)-Basic Oxygen Furnace (BOF) route and the rest 30% is through the Electric Arc furnace (EAF) route. BF process is energy intensive for converting raw iron ore into liquid iron it requires coke as energy source. The EAF, also an energy intensive process requires steel scrap/sponge iron as inputs and electrical power for melting the same.

There has been a significant consolidation in the global steel industry during the past decade. According to

WSA, in 2010, the top 5 producers contributed to 16.7% and top 15 producers contributed to 30.5% of global crude steel production. The number of producers from China, increased from one unit in 2000 had increased to 6 by 2011. The number of Asia based producers among top 15 producers has also increased.

In the Indian context, about 60% of the crude steel capacity is with integrated steel producers (ISPs), the rest being with secondary producers. In the production of long products, the share of secondary producers stands at 64.3% which is much higher than that of the integrated/main producers which stands at 35.7%. In flat products, the share of secondary producers at 39.1% is much lower than that of integrated/main producers at 60.9%.

Out of the total finished steel production, for secondary producers, the share of special products is about 25% and for integrated producers it is high at about 35-50%. Hence the competition for special steel, particularly in flat products is quite high and products have to be application specific to retain the customers.

2.1 Issues of Indian Steel Industry

- (i) **Availability of Iron ore:** Although iron ore is domestically available, many producers do not have captive mines and even for the producers with captive mines development of new mines and expansion in existing mines is difficult with land acquisition, environmental etc issues.
- (ii) **Availability of Coal:** In India, coking coal accounts for only 17% of the country's overall proven coal reserves. Out of which, prime grade is only 4.8%. Of that, only 60% of the metallurgical coal produced in the country can be put to use in the steel industry. Since such coking coals are not adequate/ economical for blast furnace operation, nearly 75% of coking coal requirement is imported.
- (iii) Industry and research establishments need to jointly work for new process for beneficiation/agglomeration and steel making and products development. The interaction with refractory producers has to be enhanced for improving the steel making process.

- (iv) Government policy initiatives are required with respect to land acquisition, mine allocation and environment & forest clearances while balancing development and environmental concerns. Port development and linkages with plants is another key area of concern.
- (v) Energy cost is the single largest component of cost, due to import of coking coal etc. So thrust has to be given for reducing energy consumption from the present average of 6.5 Giga calories as against the global average of 4.5 Giga calories per tonne of crude steel.

3. Consumption & Demand in the Refractory Industry - Global and Indian contexts

This section deals with global and Indian refractory industries with focus on production, consumption and specific issues in the industry.

3.1 Global Refractory Industry

Global refractory industry had a total demand of 35 MT in 2006, 39.1 MT in 2011 and it is expected to reach 46.3 MT by 2016 (M/s Freedonia in “World Refractory products”, Dec2012). The growth during 2006 – 2011 was about 2.1% and the same is expected to be 3.4% during 2011-2016. The global value of the refractory market was 22.4 bn USD in 2006 and is estimated to be 35.9 bn USD in 2011 and the same is expected to be 46.5 bn USD by 2016 with a growth rate of 5.3% during 2011-2016.

The global refractory growth during 2002-2007 was about 10.8% which decreased to 3.5% during 2007-2012. This lower growth was mainly due to the following factors:

- Un-favorable economic scenarios in different European and other developed nations.
- Reducing specific usage in steel industry
- Lesser growth in global steel production (post 2008 global crisis)
- General preference by the end users (steel industry etc) towards more maintenance rather than installation of new linings.

- v. Globally steel industry is increasing the share of value added & special steel products with reduction in ordinary steel which is about 60% in the volume at present. This requires the input of special quality refractory products for refinement and continuous casting of steel etc. So, thrust for more value added refractory products with potentially higher revenue per tonne will continue. Global Refractory consumption in different regions is given below:

Table. 4 World Refractory Products Demand ('000 metric tons)

Global/Segment	2006	2011	2016	% Annual Growth	
				2006-11	2011-16
Global Demand	35250	39150	46300	2.1	3.4
North America	3465	2695	2855	-4.9	1.2
Western Europe	3785	2960	3035	-4.8	0.5
Asia/Pacific	21470	27150	32900	4.8	3.9
Central & South America	1650	1675	2070	0.3	4.3
Eastern Europe	3090	2660	3015	-3	2.5
Africa/Mideast	1790	2010	2425	2.3	3.8

Source: www.ccr.com

Asia-Pacific region (which includes China Japan and India) accounted for the largest market of Global Refractory products in line with the volume of steel production in the region. The growth rate in value terms is expected to be more than volume because of the thrust on value added products particularly in the USA, Japan and Western Europe.

It is expected that about 70% of the volume increase by 2016 will be contributed by China with their thrust to increase steel & other metals production. Also specific refractory consumption in steel industry in China is due to the usage of older technologies of steel making in some of the steel plants.

Position of Refractory Market in Asia-Pacific- China

China is a major market in Asia-Pacific region and is largest refractory producer and consumer, supported by the large production volumes in steel and other

metal industries. China has abundant natural reserves of refractory raw materials and their government favours domestic value addition to the refractory raw materials than exporting raw materials. The raw material prices have increased considerably in the recent past, partly due to the policy. The Chinese refractory industry is highly fragmented.

Refractory market-USA

USA contributes to about 80% of North American segment. The demand by volume is expected to reach 2.3 MT with a growth of 1.4%, contributed by an expected reversal of decline in steel production and resurgence in demand for other products like glass etc.

The specific refractory consumption levels and their future potential in USA and other developed countries are already low and hence increase in production in the end use industries will contribute to rise in refractory consumption. However with the thrust for improved performance and better quality/longer life, the average price realizations are expected to rise. This scenario also implies thrust on higher performing refractory products, which demand high quality manufactured refractory raw-materials like fused magnesia etc, a shift which is already taking place.

Buyers are increasingly choosing more expensive high performance refractory products which are formulated for specific operating conditions. Hence, the demand for non-clay refractory products is expected to exceed the demand for clay refractory products.

Position of Refractory Market in Western Europe

For 2011, refractory market of Western Europe had a production volume of about 5 MT contributing to about 14% of global production. In terms of value the contribution is 14.2%.

According to the Federation of Refractory producers in Western Europe (PRE), European Refractory Industry is world leader in refractory products & applications with majority in Magnesite refractory products (about 50% by volume). Western Europe exports approximately 45% of the production mainly to Russia (11%), USA (6%), Egypt (5%), India (5%), and China (4%). Major

raw materials are imported from China (PRE, 2010). European refractory industry supplies about 62% of their production to Iron & steel industry followed by cement and lime (17%) and glass (3.6%) and the rest to others like chemicals, incineration etc.

Global refractory Export scenario

Refractory Exports as percentage of domestic production from Western Europe, USA, China and Japan are given below:

Table. 5: Refractory exports (% of production)

Country	2003	2006	2008	2009
Western Europe	32.0	35.0	34.5	45.0
USA	20.0	20.5	22.0	21.0
China	9.0	10.0	10.0	9.0
Japan	8.0	8.0	8.0	8.5

Source: PRE, 2010

It is seen from the above that Western Europe exports majority (45%) of their production, followed by USA (21%), China and Japan with about 9% each.

Global Refractory Industry Consolidation

In the recent past the global refractory industry has undergone considerable consolidation. The top seven firms – RHI, Vesuvius, Krosaki-Harima, Magnesite, Shinagawa, Chosun and Saint-Gobain have a market share of about 25%. The major refractory raw material suppliers are Imerys, Kyanite Mining and Unifrax etc. Some of the refractory raw material companies have forward integration for refractory product manufacturing.

According to PRE, six out of the top ten global refractory companies are located in the Western Europe. Top 5 companies had a share of 33% of the global refractory market in 2011.

Industry wise consumption of refractory products-Global scenario

Industry-wise consumption of refractory products in the global market is indicated below for 2002, 2007 and 2011

Table. 6: Industry-wise consumption
(Unit: Thousand Tonnes & %)

Industry	2002		2007		2011*	
	Qty	%	Qty	%	Qty	%
Iron & Steel	13400	58.6	18170	47.7	18200	45.7
Other metals	2845	12.4	4772	12.5	4930	12.6
Non-metallic materials	3460	15.1	8910	23.4	9780	25.0
Other industries	3160	13.8	6248	16.4	6240	16.7
Total Global consmpn	22865	100.0	38100	100.0	39150	100.0

* Based on Industry journals & projections

Source: Michael A Deneen and Andrew C Gross (2010)

From the above, it may be seen that steel industry contributed to about 46% of the consumption globally in 2011, which was less than the 58.6% of 2002. Reduction in the share of iron & steel industry is partly due to reduction in steel production post the global economic crisis in mid 2008 till 2010, and decrease in the specific consumption in steel industry. This was partly offset by increase in consumption in other non-metallic industries like glass etc. Industry wise Specific Consumption details are given below.

Industry wise Specific Consumption

The specific consumption of refractory in steel industry reduced significantly from about 20-25 kg per tonne of steel about 25 years ago to about 15-18 kg in most developing countries and is about 8 kg or less in some of the advanced nations like Japan, USA etc. Reduction in refractory consumption was also observed in other non-ferrous industries and glass etc. The technological advancements are expected to continue leading to reduction in specific consumption levels.

Specific consumption in different industries in Western Europe and global market is shown below:

Table. 7: Specific consumption of refractory products – Western Europe & Global average

Industry	Western Europe	Global Average
Steel	10 kg/T	18 kg/T
Glass	4 kg/T	5 kg/T
Cement	1 kg/T	1.2 kg/T
Waste incineration	5.5Kg/t	5.5Kg/t

Global Refractory raw materials scenario

Refractory raw materials have a major influence on the quality of refractory products. Raw materials account for about 40-50% of the cost of production. Most of the geological reserves of refractory grade raw materials are located in China, as shown below:

Table. 8: Refractory raw materials- as % of global supply from China

Name of item	As % of global supply from China
Dead burned magnesia	45
Fused magnesia	90
Refractory bauxite	77
Silicon carbide	40
Brown fused alumina	50
Graphite	80

The thrust of Chinese is on domestic value addition whereby raw materials are taxed more to restrict exports and incentives are given for product exports. The emerging scenario of Chinese refractory raw material supply is:

- * Increasing domestic demand for refractory products
- * Consolidation of producers and exporters
- * Efforts for conservation of depleting high grade resources

Hence, most of the European countries and other countries like India have to import good quality refractory raw materials from China. Some of the global refractory manufacturers (like Vesuvius, Refratech and Saint Gobain etc) and some Indian companies have set up raw material processing units in China so as to have a secure raw material linkage.

Major refractory firms are strengthening their strategic positions by investing in raw material security (by installing facilities for manufacture and/or up-gradation for improving quality). Thrust will continue on the manufacturing of high purity refractory raw materials like fused magnesia, zirconia, silicon carbide etc in order to improve the performance of refractory products and to have better raw material security and reduce dependence on the Chinese sources.

Issues of Global Refractory Industry

In consideration of the various issues the refractory industry is facing, the following are approaches/strategies for taking advantage of the emerging scenarios:

Focus area/issue	Strategies
Raw materials strategies	<ul style="list-style-type: none"> • Substitution of high purity natural raw materials with synthetic manufactured ones. • Recycling of used refractory products • Vertical integration to have input security & value addition
Energy cost	<ul style="list-style-type: none"> • Energy conservation in the refractory production process • Focus on monolithic/granular production • Focus on Unfired bricks as feasible
Growth opportunities	<ul style="list-style-type: none"> • Concentrate on BRICs and other developing countries • Selective Specialization in product development and on-site application & maintenance service
Product development	<ul style="list-style-type: none"> • Focus on monolithics without ignoring bricks/shapes in new applications • Total cost of ownership concept involving design, supply on-site application and maintenance • R&D/Innovation for new product/process • Joint development with steel industry

3.2 Indian Refractory Industry

The Indian refractory started its journey in 1874. Indian Refractory industry comprises of 100 established units with 11 large plants, 24 medium scale and the rest in small scale sector (Source: Working Group report on Steel for 12th 5 year plan).

Indian Refractory Market-Industry wise consumption of refractory products:

Share of different industries in the refractory market by quantity is indicated below:

Table.9: Share of different Consuming industries

Industry	Share (%)
Steel Industry	75%
Cement Industry	12%
Glass	3%
Non-ferrous industries	6%
Other Industries	4%
Total	100%

From the above, it is seen that steel industry contributes to 75% of the total refractory consumption in India.

Production capacity of refractory products in India is about 2MT. Current capacity utilization at industry level is about 55%-60%. India currently exports around 20 percent of its refractory production. Details of the yearly production, turnover, imports and exports are given in the tables below:

Table. 10: Indian Refractory Industry-Production, Turnover, Exports & Imports

Year	Production (MT)	Turnover (Rs./Crores)	Exports (Rs./Crores)	Imports (Rs./Crores)
2006-07	1.09	2370	314	-
2007-08	1.27	3150	419	983
2008-09	1.26	3640	522	1441
2009-10	1.25	4480	446	1277
2010-11	1.28	4600*	250*	1550*

*Estimates based on volumes, and industry journals

Source: Iron & Steel Review various issues, Steel World various issues, and Working Group on Steel for 12th 5 year plan.

From the above, it is noted that domestic production is at about the same 1.25 MT level from 2007-08 to 2011-12. Further, it is seen that the turnover has increased significantly from Rs 3150 Cr in 2007-08 to about Rs 4600 cr in 2010-11 although the production level remained almost the same, mainly due to the higher input price levels.

Table.11: Indian Refractory Market- Production, exports Special Consumption in Steel

	2007-08	2008-09	2009-10	2010-11	2011-12 Est
Total Prodn(T)	1267311	1255269	1252340	1277387	1283774
Import(T)	519085	696838	396350	501644	-
Export(T)	190303	885735	497436	210188	-

Source: Working group on Steel -12th Five year plan

From the above, it is noted that while imports are in the range of 4 lakh tonnes to 7 lakh tonnes, exports declined from about 8 lakh tonnes in 2008-09 to 2.1 lakh tonnes in 2010-11.

Specific Refractory Consumption trend in Indian steel Industry

The specific consumption in Indian steel industry was about 30 Kg/T of steel which has reduced to 18.8 kg in 2007-08, to 16.0 kg in 2010-11 and to 15Kg/T in 2011-12. The reduction in refractory consumption, particularly in steel industry was the result of improved quality of refractory, improved refractory maintenance techniques and better operational practices by the steel plants which are evolved with the joint efforts of both refractory makers and steel plants.

Estimated Refractory Consumption till 2016-17

According to Working Group on Steel for 12th 5 year plan (Nov-2011), the refractory consumption, in India is expected to reach 1.9 MT (with corresponding crude steel production of 126 MT) by 2016-17 from the present consumption level of 1.17 MT in steel industry with a specific consumption of 15 kg/Tonne of steel.

Consolidation in Indian Refractory Industry

Refractory industry in India has been affected by the global trend of mergers & acquisitions.

Some of the Indian refractory companies were acquired by other Indian refractory companies (eg M/s Sarvesh acquiring Raasi and VRW) and some foreign firms (Saint Gobain acquiring Grindwell Norton and RHI acquiring Orient Refractory products etc) and one Indian company acquiring foreign refractory units(IFGL acquiring Hofman –Germany, and Monocon-UK).

Indian Refractory industry - Raw materials scenario

Although India has reserves of fireclay and bauxite etc, they contain impurities which are not suitable for high performance refractory products, which is the requirement of critical applications like steel ladles and continuous casting etc. Hence, like many other countries, India is also dependent on China for imports of refractory raw materials. Some of the Indian refractory firms have set up units in China for raw material security. China has been restricting the supplies and increasing the price of these materials.

Refractory Raw materials cost constitutes about 50% of turnover and about 40% of raw materials are imported as observed from the sample data for two firms (M/s IFGL and M/s Orient Refractory products) covering 2010-11 and 2011-12.

Issues of Indian Refractory Industry

Industry is very much dependent on raw material imports from China, particularly for quality products. Raw material prices have moved up 80 to 85 % in the recent past.

In major consuming industries like steel trend is towards lower refractory products consumption per tonne of steel with a shift towards usage of specialised refractory products. Demand from other sectors like sponge iron and cement will rise in line with the increase in steel production.

Monolithics/castables are also expected to have high growth in the coming years as these granular items

offer similar/higher performance and flexibility as compared to bricks/shapes. Potential exists for growth in more specialized refractory materials (like zirconia, silicon carbide etc) that offer strong performance in specific applications.

China, with its lower cost structure can offer strong competition in terms of exports to India. Indian refractory producers have a constrained negotiating power due to resource concentration and lack of substitute materials /sources.

The declining specific consumption in steel industry etc. may be offset by improved quality production and onsite total refractory solutions at the existing and new steel plants with increase in production.

With the increased steel production in the other developing countries, there is potential for improving exports of basic grades and value added refractory products.

To face the competition from Chinese & global refractory firms Indian refractory firms have to adopt strategic cost management methods to capture the value now being retained by the raw material sellers by suitable beneficiation /synthetic production of the input materials so that rightful share of the value comes to the technology development and application activities of the value chain.

The industry needs to consider new product development through R&D activities and joint efforts with steel and other industries are to be continued. Strategic investments in raw materials and manufacturing technology and facilities are to be made for improving product quality. The above two issues can help in addressing the structural and executional cost drivers so that the higher value is retained and cost of production is controlled. In this connection, the recommendations by the working group on Steel for 12th 5yr plan are as given below:

- o Steel industry and refractory industry to work together to achieve standardization and for enhancing the performance of the refractory products.

- o Close Coordination between refractory makers and operational establishments, is essential for optimization of operational parameters and standardization of the same.
- o R&D works for refractory is inadequate and needs to be improved. R&D efforts are required for enhancing the use of indigenous raw materials for refractory production, as at present raw materials are being largely imported.

4. Symbiotic Relationship between Steel Industry and Refractory Industry

In this section, effort is made to establish the symbiotic relationship between the two industries by bringing out the mutual dependencies, factors affecting the two industries, and the working relationship.

4.1 Establishing the context for Symbiotic relationship

Steel industry and refractory industry are closely related to each other in many of the technological, operational and managerial issues. Both are mature and cyclic industries which are closely linked to the economic growth. The most important aspect is that without refractory products steel production is not possible and steel industry is the single largest refractory consuming industry.

Also, without steel industry, refractory industry almost comes to a stop, as the other refractory consuming industries would also be come to a halt in the absence of steel industry.

As the steel industry is subjected to the economic cycles, the fortunes of refractory industry -growth patterns, market orientation and technological developments are closely linked to that of steel industry.

Both industries enjoy a similar & common developmental relationship where improvements in steel making leads to lesser specific consumption of refractory products and hence lesser demand for refractory products and also, the new/special steel produced (like the advanced high strength steels etc) lead to lesser specific consumption of steel in the consuming sectors like auto industry.

Both industries are energy intensive with consequent impact on environment and hence emphasize on reducing (lesser specific consumption), recycling, reusing (the 3R's philosophy suggested by WSA, 2010).

4.2 Factors affecting the consumption/Production in the two industries Major parameters impacting the Global Refractory Consumption

1. Volumes of Production in the refractory consuming industries- particularly – steel and cement etc
2. Specific refractory consumption levels – based on the manufacturing technologies in the consuming industries
3. Nature of refractory products used- changes / improvements in refractory technologies

The manufacturing methods adopted in the key end-use industries like steel particularly in the developing countries (Asia pacific region excluding Japan & BRICS etc) will continue to become more efficient and shift towards more of value added/special steel and hence the refractory technologies will have to improve further and the demand for long lasting higher performance refractory products will increase causing reduced specific consumption.

Iron & steel industry will contribute to 60% of the global refractory market by volume by 2016. Refractory markets in **developing countries** will expand faster due to the thrust on increase in steel and other metal production and due to their low cost structure. Refractory markets in **US, Western Europe and Japan** are expected to rebound after a prolonged period of decline due to the economic growth prospects in these markets, particularly with respect to steel and other refractory using industries. The refractory demand in the developed countries will increase primarily because of increase in volume of production in the consuming industries as the existing efficiencies with reference to refractory products specific consumption is already very high and there is little potential for further reduction. This translates into an opportunistic scenario whereby greater use of more value added and high quality refractory products in the US, Western Europe and Japan. Accordingly the share of these markets will reach to 19% by value and to 14% by tonnage by 2016.

Major parameters impacting the Global Steel Production

The major factors which impact crude steel production are:

- Demand for steel, impacted overall economic growth rate, investment climate for steel consumption and economic policy for infrastructure development etc.
- Availability of inputs like iron ore and coking coal
- Availability of quality refractory products which is a process critical item for enhanced campaign life of main production equipment in different sections of the steel plant.

Higher campaign life of refractory lining of the major sections of the steel plant in iron making area (blast furnace, hotmetal trough, and hotmetal ladles), converter, steel ladles, steel refining/degassing facilities, continuous casting, and reheating furnaces in the mills etc contributes to improved throughput due to higher equipment availability.

4.3 Working relationship Steel industry & Refractory industry

- Equity participation by steel industries in refractory industries (e.g. SAIL in SRU and TRL, Tata Steel in TRL, Nippon Steel Corp in Krosaki Harima)
- Refractory industry undertakes joint process and product development in association with steel industry. Major global refractory companies have dedicated R&D teams to work in association with and at the sites of the steel manufacturing companies. It is noted from the annual reports of refractory making companies that the average relationship with some of the major steel companies is longer than 10 years.
- The emphasis of refractory companies is on providing total refractory solutions suitable to the specific operating conditions of steel plants wherein unit price may be higher due to better quality but the contribution to the steel industry is much better in terms of improved productivity and better quality of steel.

- The relationship towards improving refractory performance and life is being continuously pursued by refractory industries even though the same results into lower specific consumption per unit of steel production. The focus of refractory industry is on better unit prices of better quality and volume gains are expected out of the increased steel and other metal production. Refractory industries working close association with steel technology providers so that the refractory solutions are in line with the technology developments in steel making.
- Both steel and refractory industries are working towards reducing specific energy consumption and reducing the carbon foot print. Reduction in specific refractory consumption is a step in this direction. The improved performance of steel industry to the extent supported by refractory industry for better quality and volume contributes in reducing energy consumption in steel making and in the total life cycle cost of the steel because of the advanced high strength steels etc (which results in lesser specific consumption of steel in auto industry, pipe lines etc).
- The output volumes of both steel and refractory industries are closely linked to the overall economic scenario particularly development of infrastructure and personal disposable income levels.

Hence in consideration of the foregoing discussion on various aspects, the Symbiotic Relationship between Steel Industry and Refractory Industry can be stated to be demonstrated and established.

5. Concluding Remarks

In this concluding observations section, new trends in both the industries and the similarities between two industries are brought out with strategic outlook for both the industries in perspective of symbiotic relationship.

5.1 New Developments in Steel Industry and their effect on Refractory industry

Some of the important technological developments in steel industry which have implications for refractory products products development & applications are discussed below:

1. New smelting technologies like Finex process etc which can utilize the low grade iron ore fines and cheaper non-coking coals are expected to emerge .Suitable refractory products have to be developed to meet this requirement, which will be in addition to the existing requirement for blast furnaces etc .
2. In the steel making area the share of Electric arc furnace and Energy optimizing furnace which consume lesser refractory products are expected to increase. The specific consumption of refractory products per tonne of steel produced is of the order of 4-5kg/ton in the best plant practices for EAF route while it is of the order of 9 kg/ton for the Basic oxygen furnace (BOF) steelmaking route.
3. In the Continuous casting area, thin strip casting is emerging; in place of the conventional slab/ thin slab casting. Further development is “near-net shape” casting. These technologies require new products. In addition the casting speed of conventional casters is expected to increase to capture productivity gains, requiring better refractory products.

5.2 Strategic approach adopted both the industries

The significance of the refractory industry cannot be measured by the unit price of refractory or cost of refractory input per tonne of steel, but the critical role played by it in ensuring the smooth running of the steel production process sustain difficult operating conditions.

Hence steel industry adopts a long term perspective of refractory products solutions through joint development of application methods and products. The overall life obtained from refractory is a function of refractory quality, refractory application and refractory operating conditions. While the quality of refractory item can be controlled at the time of production, its performance is impacted by joint actions during installation and operation. The reduction in specific refractory consumption in steel industry was possible due to several developments in the refractory products for steel making & casting, based on research by

refractory industry and interactions with the steel plants. Over the years, the supplier- buyer approach has turned into a technical cooperation wherein the refractory producers readjust their product parameters and installation & maintenance practices and advise according to requirements of the steel making operations.

5.3 Similarities between Steel Industry and Refractory industry:

Steel industry and refractory industry have a lot of similarities in many operating and management aspects and the issues facing the industries are of similar nature. The similarities, based on the analysis of the operating conditions and management concerns are summarized below:

- Both industries depend on mined raw materials and are governed by the mining industry guidelines with reference to mining development & environment etc.
- Both industries are energy intensive and energy cost constitutes a significant part of the cost of production.
- Both industries, being energy intensive are subject to emission & effluent control guidelines.
- Both industries work towards reducing specific consumption of their end products and value addition and innovative product/process development is a constant and joint approach.
- Both are mature industries and are subject to economic cycles.
- Both the industries are impacted by the high input price increase in the recent past (due to concentration & seller's market). Hence the thrust is on niche marketing and value-added products and cost reduction through productivity gains. In steel industry such efforts are supported by refractory industry with mutual advantage.

Both refractory and steel industries are concentrating their efforts in the emerging economies for producing locally with lower wage structure etc while utilizing the global expertise and technological inputs. This is because; the anticipated growth in overall production and consumption levels is expected to be in the developing countries particularly BRICS nations.

Both the industries had a lot of consolidation through mergers & acquisitions during the past decade leading to synergies in product/customers and stronger research orientation.

For both the industries the raw materials are concentrated at few locations/companies causing anxiety to assured supplies at reasonable prices. In order to reduce dependence on the few sources, both industries have been developing technologies (eg coal dust injection, direct smelting processes for iron making and development of synthetic raw materials for refractory products). Both industries have to concentrate on mineral beneficiation (of high ash coals, low grade iron ore, bauxite etc and agglomeration (for iron ore and dolomite/limestone fines) for utilizing the available materials.

5.4 Conclusion

Although the impact of reduction in specific consumption is more pronounced for refractory industry the thrust on new innovative products & applications helps in higher average realisations supported by increased special steel production/productivity gains to steel industry. Hence a healthy & innovative refractory industry is a strong growth factor for steel industry in as much as strong growth in steel industry & production is a key factor for survival & growth of refractory industry.

5.5 Issues for further research in Global steel & Refractory industries

Wide and frequent Fluctuations in demand

There have been wide and frequent variations in steel demand which hugely impact the production levels. Technological process limitations do not allow frequent shut-down and start type of operations – particularly in coke ovens- blast furnace and Converter/Electric furnaces. Hence it has significant implications for particularly for refractory linings & equipment health issues.

Raw material price increase, volatility & short duration contracts

The prices of major input iron ore and coking coal have risen steeply in the recent past with wide fluctuations. The erstwhile long term contracts for iron ore and coking coal are being replaced by short term quarterly contracts.

In the current scenario of scarcity and high prices of iron ore and coking coal, in order to have raw material security, global steel companies are actively pursuing for acquisitions of coal assets globally. Efforts are also being made for joint ventures with mining companies to develop new mines around the world.

Shift to Emerging Markets –capacity creation & consumption & competition

Steel production base is shifting from mature markets to emerging economies. The demand and its growth in developed countries (USA, Japan and some among EU) has been declining, leading to increased competition in the existing producers. Steelmakers in the emerging markets are expected to face more competition, as companies from developed markets enter, largely through joint ventures, and domestic players increase their capacities. However, China is expected to have lesser growth on steel production due to their economic policy.

Other focus areas for Global steel industry are

- More technology innovation in process and product- lower energy usage, use of low grade inputs and products of high strength steel
- Improvement in productivity (refers to, among inputs- the role of refractory performance for improving continuous working).
- Timely modernization of facilities where by the structural cost drivers are managed to control the value & cost of production on a long term basis for sustained competitive advantage.
- Usage of eco-friendly technology for sustainable development.

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An Insight into the Import and Export of Products and Services from North East India

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ABSTRACT

The North Eastern Region comprising of the Seven Sister states shares its border with five sovereigns. As a result cross border trade in goods, services and investment avenues among the neighbouring sovereigns can create a roadmap for trade, investment, infrastructure, tourism and service related activities. Hence the present study aims to examine the scenario of export and import of products and services related to North Eastern region. It shall also make an appraisal about the role of export promotion body-Agricultural and Processed Food Products Export Development Authority (APEDA) in enhancing agricultural exports from the North Eastern region. Furthermore the research enquiry examines the problems of entrepreneurs engaged in cross-border trade from this region. Through this research enquiry, it is discernible that cross-border trade has become a preferred destination for attaining economic growth and prosperity of the region as a composite economic entity.

1. INTRODUCTION

The North Eastern Region of India comprises of the seven sisters i.e. Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and the Himalayan state of Sikkim. This region covering an area of about 2.62 lakh square kilometers shares an extensive international border with five neighbouring countries. It is surrounded by Bangladesh in the west and southwest by nearly 1500 kilometers border, Myanmar in the east and southeast with approximately 1640 kilometers border. China lies towards the north and north east sharing a border of about 1000 kilometers; the Kingdom of Bhutan with a border of nearly 1100 kilometers lies to the north and northwest. Nepal shares its border with Sikkim covering a distance of 95.6 kilometers.

The North Eastern Region (NER) is endowed with vast natural resources. It can be referred to an unexplored paradise. The region is a vibrant source of energy, crude oil, natural gas, coal, uranium and limestone; and is endowed with perennial rivers, majestic waterfalls, hills, serene valleys and mountains, thus showering scenic beauty to the region as a whole.

Horticultural products, plantation crops, vegetables, spices, rare herbs, flora and fauna and medicinal plants enhance the richness of the region. This region shares some common characteristics like topographical condition, land locked hilly terrain, geographical inaccessibility, physical barriers and remoteness, common climatic condition, rainfall pattern, rice as a staple food with fish, meat and eggs, common lifestyle, sizeable number of tribal population with distinct and rich cultural heritage, ethnic identity and common bondage, rain forest and high forest coverage, and wildlife sanctuaries. Mention may be made of domestic artisanship in designing, handicrafts, handlooms and weaving as an economic activity, distinct art, culture and dance format and a unique all women Imma market in Manipur.

The former Prime Minister P.V.Narasimha Rao was a great visionary when he thought of promoting North Eastern region of India as a trading point under the Look East Policy in 1991. The land locked hilly terrain of this entire region is linked with the rest of India by a 35 Kilometer corridor known as Chicken neck near Siliguri. This region enjoys a territorial advantage of close proximity with South East Asian nations.

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Historically Myanmar, Thailand, Cambodia, Vietnam, Laos are under a common political, economic and emotional bondage which can be translated into trading relations by promoting legally recognized trade along the cross border trading points of the region. Moreover the NER shares border with 5 sovereigns which forms a vital condition for developing cross border trade in goods, services among the neighbouring sovereigns that can create a roadmap for trade, investment, infrastructure, tourism and service related activities. The authors in this article have made an insight into the existing trade that is taking place between North Eastern Region vis-à-vis the other exporting destinations.

2. OBJECTIVES

The present research enquiry has been undertaken with the following objectives.

1. To examine the scenario of export and import of products and services related to North Eastern region.
2. To analyse export procedure and customs clearance mechanism in respect of foreign trade.
3. To make an appraisal about the role of Agricultural and Processed Food Products Export Development Authority (APEDA) in enhancing exports from the North Eastern region.
4. To examine the problems of entrepreneurs engaged in cross-border trade from North Eastern region.

3. METHODOLOGY

The present study is based on both primary and secondary sources of data. Required primary data have been collected by visiting and interviewing the concerned officials at the office of Customs (Guwahati and Shillong), Agricultural and Processed Food Products Export Development Authority (APEDA) and Inland Container Depot in Assam. Besides, certain prominent Land Customs Stations of the region have been visited and information was gathered through observation and interviews. Moreover secondary sources of data like publications of APEDA, Ministry of Development of North Eastern Region (DONER), as well as Ph.D theses, books, newspapers and relevant websites have also been used for the purpose of this study.

4. EXPORT AND IMPORT SCENARIO IN NORTH EAST INDIA

North Eastern India has agreements of overland trade with Bangladesh, Bhutan, China and Myanmar through Land Customs Stations. The Land Customs Stations (LCS) on the international border are notified under Section 7 of the Customs Act, 1962 by the Department of Revenue, Ministry of Finance. For trading through LCSs situated on Bangladesh and Bhutan border there a free trade agreement known as South Asian Free Trade Agreement (SAFTA). Moreover Border Trade Agreement has been entered into with Myanmar and China through Nathula pass that reopened in 2006.

Table1: Table showing the State wise classification of Land Customs Stations (LCS) along with their customs division, status and neighbouring country with which they share border.

STATE	CUSTOMS DIVISION	NAME OF LCS (INDIA)	STATUS *	LCS IN NEIGHBOURING COUNTRY	NEIGHBOURING BORDER
ASSAM	Dhubri	Mankachar	F	Natun Bandar	Bangladesh
		Dhubri-Steamerghat	F	Rowmati	-do-
		Golakganj	NF	Bhurungamari	-do-
		Hattisar	F	-	Bhutan
	Karimganj	Ultapani	NF	-	-do-
		Sutarkandi	F	Sheola	Bangladesh
		Karimganj-Steamerghat and Ferry Station	F	Zakiganj	
		Mahisasan Railway Station	NF	Sahabajpur	
Silchar RMS	NF	-			

	Guwahati	Darranga Guwahati Steamerghat	NF NF	- -	Bhutan Bangladesh
ARUNACHAL PRADESH	Dimapur	Nampong (Pangsau Pass)	NF	Pangsu	Myanmar
MANIPUR	Imphal	Moreh	F	Tamu	Myanmar
MIZORAM	Aizawl	Champai (Zokhawthar) Demagiri	F NF	Rih Rangamati	Myanmar Bangladesh
MEGHALAYA	Shillong	Dawki Shellabazar Bholaganj Borsora Rynku	F F F F NF	Tamabil Sonamganj Chattak Borsora Kalibari	Bangladesh
	Dhubri	Baghmara Ghasuapara Dalu Mahendraganj	F F F F	Bijoypur Karoitoli Nakugaon Dhanua- Kamalpur	Bangladesh
SIKKIM	-	Sherathang (Nathu La)	F	Renginggang	China
TRIPURA	Agartala	Srimantapur Agartala Muhurighat Khowaighat Dholaighat	F F NF NF NF	Bibir bazaar Akhaura Belonia Balla Khurma	Bangladesh
	Karimganj	Manu Old Rangabazar	F F	Chatlapur Betuli	Bangladesh

Source: Self compilation from the office of Customs, Guwahati, Commissionerate of Customs, Shillong and <http://www.mdoner.gov.in/content/list> (accessed on 3rd July, 2013)

Note: *F=Functional, NF=Non Functional

Thus, there are 25 LCS along Indo-Bangladesh border, 3 LCS each along Indo-Myanmar and Indo-Bhutan border and 1 LCS along Indo-China border. The total number of LCS in this region is 32 out of which 20 (62.5%) are functional and the rest 12 (37.5%) are non functional with respect to goods movement. Apart from the LCS, there exists 1 Inland Container Depot (ICD) at Amingaon, Guwahati and an international airport known as Lokapriya Gopinath Bordoloi International Airport (LGBIA) at Guwahati, Assam. Some significant developments with respect to border trade are highlighted below:

- It has been proposed to open up 5 more Land Customs Stations in NER to increase cross border trade. The proposed LCS along the Indo-

Bangladesh border are Kuliang, Maheskhola, Balat, and Nongtrai-Lafarge Surma Cement Cross Border Project in Meghalaya and Sabroom in the state of Tripura.

- The Indo-Bangladesh joint working group on trade in June 2013 has approved a scheme to set up 22 Border Haats along the Indo-Bangladesh border in West Bengal and NER. The special features of Border Haats are that it will be used to facilitate trade of indigenous products at lower tariffs between the two countries. Of these 22 proposed Border Haats, Tripura, Mizoram and Meghalaya would have four each.

The Central Government has floated a Rs. 467 crore scheme in June 2013 to upgrade and modernize India's 7 Border Trade Centres (BTC) along the Indo-Bangladesh border, 4 of which are in NER namely Dawki, Sutarkandi, Agartala and Demagiri. The Sutarkandi BTC, inaugurated in January 2007, has already facilitated enhanced trade with Bangladesh registering an export of Rs. 42.79 crores and import of Rs. 45.87 crores during 2012-13.

5. Items of export and import

Prominent export items from North Eastern region at present are:

1. Tea, which is exported to United Kingdom and other countries of Europe, Russia, USA, China, United Arab Emirates, Pakistan, Sri Lanka.
2. Coal and boulder stones occupy a significant place in exports to Bangladesh.
3. Patented medicines and food items like flour, dry chilli are important items that are exported to Myanmar.

4. Orange, citrus fruits, passion fruits and ginger are prominent exports to both Bangladesh and Myanmar.

Apart from the above mentioned export commodities, there are certain products which are produced in the North Eastern region itself but exported through other parts of the country. Prominent items among them are:

- a) Bhut Jolokia or Ghost Pepper (both in raw and powdered form) that is exported through Kolkatta and Delhi to Europe and Middle East.
- b) Agar wood chips and oil are exported to Middle East through Mumbai.

The important items of *import* to the North Eastern Region at present are cement, food products of Pran brand, other food items, synthetic net fibre (which is stitched in India as mosquito net), mobile phones and accessories, tin, ladies garments, perfume, cotton yarn and cotton waste. An observation has been done here showing the important items of export and import from the prominent functional LCS along with the value of export and import.

Table 2: Important items of import and export through the prominent functional LCS in the North Eastern Region

LCS	EXPORT ITEMS	EXPORT VALUE	IMPORT ITEMS	IMPORT VALUE
Mankachar	Coal, Boulder stone	11	Cement, cotton waste, Synthetic net fibre	253
Sutarkandi	Coal, orange, citrus fruits, passion fruits	1954	Products of PRAN brand, cement, hilsa fish	3073
Karimganj-Steamerghat and Ferry Station	Orange, citrus fruits, ginger	822	Cement, Synthetic net fibre	12
Moreh	Food items	26	Food items	380
Zokhawthar	Nil	-	Garments and food items	4
Bholaganj	Boulder stone	22373	Nil	-
Dawki	Coal, boulder stone, lime stone, orange and seasonal vegetables	9720	Food items	0.1
Borsora	Coal	16768	Nil	-
Dalu	Coal	1890	Cement, cotton waste, stnthetic net fibre	296

Baghmara	Coal	385	Nil	-
Ghasuapara	Coal	6701	Nil	-
Mohendraganj	Coal	362	Cotton waste, synthetic net fibre	449
Shellabazar	Boulder stone	829	Nil	-
Agartala	Ginger and other vegetables	157	Products of Pran Brand, cement, tin	20352
Old Rangabazar	Citrus fruits	5	Textile items	68

Source: Self compilation from the office of Customs, Guwahati, Commissionerate of Customs, Shillong and <http://www.mdoner.gov.in/content/border-trade> (accessed on 3rd July, 2013)

Note: The values are in Rs (lakh) and pertain to the year 2010-11

6. Export and import through Airport and ICD Amingaon

- The LGBI Airport is the primary and the only international airport in the region which came into international air traffic map by connecting Bangkok with Guwahati on 4th April, 2002. It has been gathered that only import of goods takes place through air cargo facility at the airport. Mobile phones and accessories, memory cards, ladies garments are the chief commodities imported mostly from Bangkok region through this unit at present.
- The Inland Container Depot (ICD) at Amingaon in Guwahati, commissioned its activities in November 1989. With a total area of 94425 square meters, it has regular and on demand rail link service for all major ports and hinterlands in the country. The chief export item of the ICD is Tea

and there is no significant import. The rail-linked depot is under the Container Corporation of India Limited. Tea is exported in containers from the ICD through railways up to Kolkatta and from Kolkatta, they are sent through ships to different parts of the world namely, the UK and other European countries, Russia, the USA, China, United Arab Emirates, Pakistan, Sri Lanka, to name the major importers. The highest number of containers in 2012 was sent by McLeod Russel (1,863) followed by Apeejay Tea Limited (308) and MK Shah Exports Limited (204). The other important players were Assam Company, Goodricke Group, Warren Group and Gillanders. Among the shipping lines engaged in its shipments, Shipping Corporation of India has garnered the largest share followed by Mediterranean Shipping Company, Maersk and K Line.

Table3: Tea export from ICD Amingaon since the last four years.

Year	Quantity (in kg)	Export value (in Rs.)	Variation (in kg.)
2008-09	27307571	3290541357	-
2009-10	32777414	4654714764	5469843 (16.6%)
2010-11	25862366	3929929337	6915048 (-26.7%)
2011-12	29302447	4894234251	3440081 (11.7%)

Source: ICD, Amingaon (Guwahati)

It can be observed from the above table that besides 2010-11, all the other three years have shown an increase in the export of tea. The drop was mainly due to the loss of tea crop caused by incessant rain and consequent pest attack in April-May-June during that year in Assam. The recent rise in tea exports from the depot is because

of the availability of good quality exportable tea in the state at a better price. In June 2013, the Tea Board of India has adopted a massive initiative to sustain the quality of Assam tea in order to sustain our export market share. Meghalaya has a tea plantation producing a specific variety of organic tea and Hatikhuli Tea

estate under TATA Tea in Assam is producing organic tea meant for export market. Besides Mizoram has undertaken a coffee plantation near Bhairangte which is famous for an international centre for guerilla training warfare technique.

7. Services

- It was found that healthcare is a significant and upcoming service sector where doctors from Imphal travel to Myanmar to offer medical service. The Smile Train Team, led by the chairman of Shija Hospital of Manipur, operated on eighty seven patients with defective lips and palates at the government run General Hospital Monywa in Sagaing region of Myanmar in May 2013. During the trip, it was found that Myanmar was lacking in modern facilities and plastic surgeons and hence healthcare is a major area that Manipur could develop in neighbouring Myanmar under the Look East Policy. Therefore the Manipur Government is sponsoring the next trip of the team which shall commence in September 2013.
- The Palatana thermal power project, situated 60 kilometers south west of Agartala is the brightest example of inter-governmental economic co-operation for mutual benefits. The first unit of the project (363.3MW) has already been inaugurated on 21st June 2013. This project is a pollution free clean energy project as certified by the United Nations Organisation and the biggest of its kind in the North East. It is also the largest project in the world registered under the Clean Development Mechanism of the United Nations Framework Convention on Climate Change (UNFCCC) and will earn India over a million carbon credits. Bangladesh allowed transportation of heavy equipments of this project through its sea port at Chittagong and river port at Ashuganj. The electricity generated would be shared in an agreed proportion both by India and Bangladesh.
- It is worth mentioning that Meghalaya has developed Shillong as an educational hub that has been able to attract the students of Bangladesh for higher education since it provides the best of English medium education. They cross the

border at Dawki on production of their passport, continue their studies in Shillong and then return back. Moreover the state promotes visit by Bangladeshi tourists during peak seasons taking Meghalaya as a tourist destination. This has enhanced marketing opportunities for local products, travel and tourism services in the state. Meghalaya also benefits from foreign exchange through the promotion of tourism and educational services.

8. Transit facility

As narrated earlier, connecting North East with rest of the country is a cumbersome process. Hence, transit facility from Haldia dock through the territory of Bangladesh can easily connect the land locked North East and thus provide intra-country as well as inter-country movement of goods, passengers, trade, commerce and investment. Movement of food grains from West Bengal to Mizoram, Tripura and South Assam is crucial. Because of co-operative bilateral agreement between India and Bangladesh, Bangladesh Government agreed to permit shipment of PDS rice and food grains to Tripura to South Assam and to Mizoram through its territory. According to information gathered from Inland Water Transport Authority of India office in Karimganj, Bangladesh allowed transit facility via its river port in Ashuganj and sea port in Chittagong. The terms of transit agreed were:

- Consignment was shipped from Haldia port in barges to Ashuganj river port in Bangladesh about 25 Kilometers from Agartala; from there food grain was ferried in trucks to Tripura,
- Dhaka also agreed to permit shipment of PDS rice from West Bengal to Tripura without imposing any Customs duty or tariff under the condition that it should involve the deployment of only Bangladesh vessels in this 'humanitarian act'.
- The distance of about 1700 kilometers from West Bengal to this part of the country can be reduced through this transit facility and thus ensuring easy food grain access for the populace.

9. Movement of travellers through LCS

- Tourists and visitors flow is allowed through several LCS namely, Dawki in Meghalaya,

Nampong in Arunachal Pradesh, Dalu in Tura hills of Meghalaya, Moreh in Manipur, Mankachar, Karimganj Steamerghat and Golakganj in Assam, Zokhawthar in Mizoram and Akhaura LCS in Agartala. Visitors are allowed to cross the border on production of passport, visa and other requirements as applicable.

- It has also been found that in order to facilitate limited movement of hill tribes residing along the Indo-Myanmar border, the Governments of India and Myanmar have permitted entry of such persons residing within 16 kilometers of the international border with only permits and certain terms and conditions but without visa. Local nationals on both sides can stay in the other country for three days within 16 kilometers on either side. Movement is allowed through Gate number 1 and 2 in Moreh border of Chandel district in Manipur.
- Nampong (Pangsau Pass) in the Changlang District of Arunachal Pradesh bordering Myanmar lies in the Stilwell road or Ledo Road. Although there are no goods movement through this LCS at present, but it is a significant point for movement of travellers along the Indo-Myanmar border. This LCS can be developed for movement of tourists who want to visit the Lake of No Return situated in a nearby village in the territory of Myanmar adjacent to the Indo-Myanmar border as well as the Stilwell Road. Stilwell Road was historically very famous for trade purpose. This road was constructed in 1943 by General Joseph Warren Stilwell the chief of American Army staff to allied forces in China-Burma-India for defence of Burma from Japanese forces. It was built connecting Ledo in Assam through Lekhapani to Burma Road, and passes up to Kunming city of China in South China. However this road was abandoned after the Second World War.
- Rih Dil Lake in Myanmar is situated about 3 kilometers from the Zokhawthar LCS in Champai district of Mizoram. This lake establishes a religious and emotional attachment for the people of that region. Hence movement of travelers is allowed through this LCS.

10. Role of Agricultural and Processed Food Products Export Development Authority (Apeda) In North East

APEDA was established by the Government of India by enacting the Agricultural and Processed Food Products Export Development Authority Act, 1985 which came into effect from 13th February, 1986. Export promotion, organizing buyer-seller meet and market development for agricultural commodities, processed foods is undertaken by APEDA. It has implemented several schemes for market, infrastructural and quality development as well as transport assistance and research and development (R&D). The products under the purview of APEDA includes fresh fruits and vegetables, floriculture, processed foods, meat, poultry, milk and other livestock products, food grains, cereals, seeds and allied products.

In NER, fruits like orange and other citrus fruits, pineapple, banana, guava, mango; spices like ginger, cardamom, garlic, turmeric, chillies; vegetables like tomato, potato, peas; flowers like rose, gerbera, chrysanthemum and orchids like Dendrobium, Cymbidium, Anthurium; and other crops are the major horticultural crops which have immense export potential provided assistance is available. Thus APEDA functions as a catalyst by providing support services and implementing schemes of the Government besides giving an exposure to exporters by enhancing their participation in international trade fairs.

Agricultural exports from NER at present include orange, pear, banana, pineapple, citrus fruits, tomato, ginger, turmeric, wheat and rice besides flowers like orchids, gerbera and rose. The major exporting destinations are Bangladesh and Myanmar. Moreover, red rice has also been exported to the USA. APEDA is also considering the export potentialities of the famous Jaha and Bora rice of Assam. During the year 2012-13 agricultural exports from the region amounted to Rs. 45 crores which registered an increase of 57% over last year.

Through the support of APEDA, integrated pack house facilities for floriculture in Sikkim and multipurpose cold storage in Mizoram have been set up; walk-in-type cold rooms are being set up at Agartala, Aizwal,

Dimapur and Imphal besides imparting training to the farmers of the region. Moreover setting up of a centre for perishable cargo at LGBI Airport in Guwahati is also being considered. A special Scheme for NER implemented through APEDA is Inland Transport Assistance scheme which brings down the heavy expenditure on transportation involved in movement of goods with a view to boost the export of fresh and processed horticulture products from the North-East Region through international airports of the country or through LCS. Thus it can be concluded that APEDA has been playing a significant role in enhancing agricultural products of NER.

11. Export Procedure and Customs Clearance Mechanism

1st step: For export/import, the exporter/importer has to obtain IEC code (Export-Import code) and BIN (Business Index Number) from Director General of Foreign Trade.

2nd step: Exporter in India should have a firm contract with the importer abroad. Secondly, the exporter is also required to obtain proforma invoice, letter of credit and fulfill bank procedures as required.

3rd step: Exporter should submit the following documents at the port of export- Shipping Bill to customs authorities, submit invoice, packing list, contracts, export authorization, necessary declaration for export. They should also submit GR/SDF/SOFTEX as required under Foreign Exchange Management Act, Excise ARE-I form and make export value declaration in proper format.

4th step: The customs officials at this point does noting of shipping bill, makes valuation and classification of goods, undertakes a customs check to identify whether export goods are restricted or prohibited followed by examination of goods. Then the goods are stuffed in containers, if not already done and finally export order is laid by the customs officials.

5th step: The exporter should obtain ARE-I form duly signed by customs officer, obtain Bill of Lading from the shipping company (required only when goods are shipped) and submit proof of export to excise authorities.

12. Problems Faced by Local Entrepreneurs in Their Export Efforts

In this section the major problems faced by the local entrepreneurs of North Eastern Region who are engaged in export trade have been highlighted below.

The greatest barrier with respect to export trade is the infrastructural related problems such as the problem of credit availability followed by the facilities of cold storage for perishable commodities, warehousing, weigh bridge, as well as loading/ unloading facility. Another major problem is that of transportation bottlenecks. It was found that in terms of both roadways and waterways, NER has a better connectivity with Bangladesh than with that of Bhutan, China and Myanmar. Further illegal taxation and illegal trade has hampered legal trade to flourish and dampened the spirit of exporters. Fulfillment of statutory requirements of trade with limited availability of export and import related information has adverse consequences on the development of cross border trade in the region.

13. Conclusion

Through this research enquiry, it is discernible that cross border trade in respect of existing products and service of North Eastern region has become a preferred destination for attaining economic liberalization of North East India. Geographical distance can be reduced by connecting through information technology and thus bringing the other neighbouring sovereigns into our trading partnerships. The important ingredients for enhancing exports in NER are the proper implementation of export promotion schemes and an international exposure to the rich and varied products of the region.

Mekong, Kaladan and Irrawaddy River in Burma be connected for promoting trade through marine route. Haldia port via Ashuganj and Chittagong port in Bangladesh can be linked with Sittwe and Patheingyi ports in Myanmar to establish trade route up to Vietnam and Hanoi. This is an essential but not sufficient condition of emergence of new diplomatic ties among the Asian neighbours for garnering reciprocal benefits from international trade.

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He who has never learned to obey cannot be a good commander
- **Aristotle**

The key to successful leadership today is influence, not authority
- **Kenneth Blanchard.**

*A good plan violently executed now is better than a
perfect plan executed next week*
- **George Patton**

Understanding the Dimensions of Organizational Climate and Culture: An Exploratory Micro Level Analysis

S.Ravishankar*, H.L.Kaila**

ABSTRACT

This paper begins with a comprehensive review of the definitions and characteristics of organizational culture, management literature on climate and culture, and demonstrates close parallels with research and writings on the subject. The paper then reports the findings of an empirical investigation into the relationship between the organisational culture, climate, and workplace environment factors of an organization in advertising sector versus an organization in IT sector. The relative strengths of organizational dimensions of culture in the organisations were measured using appropriate techniques. Added to this there were items from a questionnaire for which responses provided scores across many specific dimensions of organisational climate. The measures of working environmental conditions were examined; and results present that the levels of culture within the particular organisation are at variance. Analysis indicates a strong link between specific organisational climate items and a number of workplace environmental-dimensions. Additional relationships between particular dimensions of culture, climate and workplace values are also reported.

1. Introduction

When employees join an organization, at any level of hierarchy, they bring with them the *values and beliefs* they have been taught. Often such values and beliefs are insufficient for helping the individuals to succeed in the organization. They need to learn ‘how the particular organization performs various functions’.

2. Understanding Organizational Culture

There is no single definite definition for organizational culture. From a variety of perspectives, the topic has been studied – ranging from disciplines such as anthropology and sociology, to the applied disciplines of organizational behaviour, management science and organizational communication. Edgar Schein (1992), who is one of the most well-known expert and prominent theorist of *organizational culture*, defined culture as ‘a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration’, that has worked well enough to be considered valid and therefore, to be taught to

new members as the correct way to perceive, think and feel in relation to those problems’.

In other words, as groups evolve over time, they face two basic challenges: (i) integrating individuals into an effective whole; and (ii) adapting effectively to the external environment in order to survive. As groups find solutions to these problems over time, they engage in a kind of collective learning that creates the set of shared assumptions and beliefs which we call ‘culture’.

Gareth Morgan (1997) describes culture as ‘an active living phenomenon through which people jointly create and recreate the worlds in which they live’. For Morgan, the three basic issues for cultural analysis include:

- i) What are the shared frames of reference that make organization possible?
- ii) Where do they come from?
- iii) How are they created, communicated and sustained?

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3. The four essential strengths of organizational culture approach, as identified and proposed by Morgan include

- i) Focusing attention on the human side of organizational life, and finding significance and learning in even its most mundane aspects (for example, the setup in an empty meeting room).
- ii) Importance of creating appropriate systems of shared meaning to help people work together towards desired outcomes.
- iii) Members and especially leaders acknowledging the impact of their behaviours on the organization's culture. (Morgan proposed that people should ask themselves 'what impact am I having on the social construction of reality in any organization?' and 'what can I do to have a different and more positive impact?').
- iv) Encouraging the view that the perceived relationship between an organization and its environment is also affected by the organization's basic assumptions.

Morgan observes that "*we choose and operate in environmental domains according to how we construct conceptions of who we are and what we are trying to do; and we act in relation to those domains through the definitions we impose on them; the beliefs and ideas that organizations hold about who they are, what they are trying to do, and what their environment is like have a much greater tendency to realize themselves than is usually believed*".

Organizational culture includes formal codes of behavior, pay systems, tasks, rituals, ways of interaction with co-workers, jargons and jokes understood only by insiders. It also includes the way these factors are interpreted and understood by the employees. *Organizational culture is quite complex to describe.*

Long back, in 1993, Morrison found that not only are these cultural values were *taught* to newcomers, but also newcomers *seek out* and want to learn about their organization's culture.

There are many characteristics of organizational culture and some of them are:

- Observed behavioural regularities, norms and standards of behavior.
- Dominant values of an organization and philosophy / beliefs about 'how employees / customers are to be treated'.
- Guidelines and rules concerning 'to get along in the organization'.
- Climate of an organization, i.e. overall feeling which is conveyed by the personnel, the way employees interact mutually and the way members of the organization conduct themselves with customers.

4. Climate and Culture

Schneider, Gunnarson and Niles-Jolly (1994) opined that *climate and culture* are powerful psychological mechanisms through which managers communicate their priorities to employees. Priorities leading to organizational effectiveness include *quality* service provided to both *external and internal* customers, innovation in research and development, and marketing of new products and services and good behaviours (*employees' willingness to cooperate and contribute to organizational success*).

A number of studies have been conducted on organizational climate in many other countries.

West (1993) dealt with the personal qualities that form the *advertising creative personality*. It was hypothesized that differences in culture, marketing orientation, industrial development and scope and influence of advertising agencies would result in *significant differences* in the nature of the creative personality, the control and participation of the creative process, and the type of '*agency philosophy*'.

Kumar (2000) carried out a study to compare the organizational climate of public sector, new private sector and foreign banks in India based on the *perception of the organizational climate*. By using the 'organizational climate scale', developed by Likert (1967), to assess the *organizational climate*, the study

revealed that the organizational climate of new private sector banks and foreign banks has been perceived as significantly better than the organizational climate of public sector banks. The organizational climate of foreign banks has been perceived as significantly better than the organizational climate of public sector banks on all factors, except in the aspect of *motivation level* of employees.

5. Commitment in Work Settings

When the employees are made to feel that they are an integral part of the organization, they would show more commitment to their work, superiors and the organization as a whole than when they feel ignored. Subsequently, the employees attitudes would lead to 'commitment to deliver and deliver the commitment'. In a wide variety of work settings, organizational commitment has been studied by academicians and practioners. Porter and Steers (1982), for instance, define organizational commitment as '*the relative strength of an individual's identification with an involvement in a particular organization*'. In India, Balaji (1986) in his study '*Towards a New Measure of Organizational Commitment*' describes the development of a scale to measure organizational commitment and also points out some of the problems of the organization. Researches have shown that a *favourable organizational climate creates an incentive for people to contribute and continue with the organization* (Singh and Das, 1978 ; Prasad, 1996).

Campbell et.al.(1970) identified four general categories of organizational situation, which are structural properties, environmental characteristics, organizational climate, and formal role characteristics. Organizational climate was described as "a set of attributes specific to a particular organization that may be induced from the way the organization deals with its members and its environment. For the individual member within the organization, climate takes the shape of an attitudes and expectations that describe the organization in terms of both static characteristics (*such as degree of autonomy*) and behavior-outcome and outcome-outcome contingencies".

Campbell et.al.(1970), identified few dimensions of organizational climate and the factors on which they were based ; and some of these included the following:

- (a) **Individual autonomy:** based on factors of individual responsibility, agent independence, rules orientation and opportunities for exercising individual initiative.
- (b) **Degree of structure imposed upon the positive side:** based on the factors of structure, managerial structure and closeness of supervision.
- (c) **Reward orientation:** based on the factors of reward, general satisfaction, promotion-achievement orientation, and being profit minded and sales oriented.
- (d) **Consideration, warmth and support:** based on the factors of managerial support, nurturance of subordinates, and warmth and support.

Campbell and Beaty (1971) defined organizational climate as ' a summary variable intended to represent perceptual filtering, structuring and description of numerous stimuli impinging on him from domain we so casually refer to as '*the situation*'.

Pritchard and Karasick (1973) redefined organizational climate as '*a relatively enduring quality of an organization's internal environment distinguishing it from other organizations; which results from the behaviour and policies of members of organizations, especially top management; which is perceived by members of the organization ; which serves as a basis of interpreting the situation ; acts as a source of pressure for directing activity*'.

In 1988, Rousseau provided a useful chronology of climate definitions that enables one to compare and contrast different conceptions:

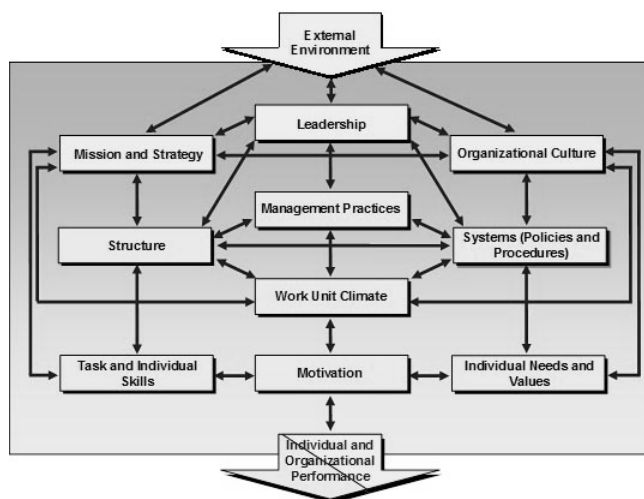
Forehand and Gilmer (1964)	Characteristics that (1) distinguish one organization from another, (2) endure over time, and (3) influence the behavior of people in organizations.
Findlater and Margulies (1969)	The personality of the organization; perceived organizational properties intervening between organizational characteristics and behavior.
Campbell et.al.(1970)	A set of attitudes and experiences describing the organizations' static characteristics, and behavior-outcome and outcome-outcome contingencies.
Schneider and Hall (1972)	Individual perceptions of their organizations affected by the characteristics of the organization and the individual.
James and Jones(1974)	Psychologically meaningful cognitive representations of the situation, perceptions.
Schneider (1975)	Perceptions or interpretations of meanings that help individuals make sense of the world and know how to behave.
Payne et.al.(1976)	Consensus of individuals' descriptions of the organization
James et.al (1978)	Sum of members' perception of the organization
Litwin and Stringer(1978)	A psychological process intervening between organizational characteristics and behavior
Joyce and Slocum (1979)	Climates are (1) perceptual, (2) psychological,(3)abstract,(4) descriptive,(5) not evaluative, and (6) not actions.
James and Sell (1981)	Individuals' cognitive representation of proximal environments, expressed in terms of psychological meaning and significance to the individual – an attribute of the individual, which is learned, historical and resistant to change.
Schneider and Reichers (1983)	An assessed molar perception or an inference researcher's make based on more particular perceptions.
Glick (1985)	'Organizational Climate' – A generic term for a broad class of organizational, rather than psychological, variables that describe the context for individuals' actions.

Various researchers have attempted to describe the *effects or consequences of organizational climate*. For instance, Gordon and Cummins (1979) argued that considerable research has showed that various 'climate' issues were clearly related to company profit. They listed the following:

- An organization has clear goals and defined plans to achieve its goals.
- The planning system is formal and comprehensive.
- Information for decision making is available and is used.
- Good lateral communication exists and overall communication is good.
- Units understand each other's objectives.
- Clear measures of managerial performance exist.
- Managers are clear about results expected of them.
- Benefits are competitive.
- Compensation is related to performance.

They assert, with some evidence, that if these structural and climate features occur in an organization, it is likely to be profitable.

One of the most influential models of the role of organization climate in business performance is the Burke-Litwin model. It shows the various drivers of change and ranks them in terms of importance. The model is expressed diagrammatically, with the most important factors featuring at the top. The lower layers become gradually less important. The model argues that all of the factors are integrated (to greater or lesser degrees). Therefore, a change in one will eventually affect all other factors. Burke-Litwin believe environmental factors to be the most important driver for change. Indeed, most change can be traced back to external drivers for change. Important elements of organizational success, such as mission and strategy, leadership and organizational culture, are often impacted by changes that originate outside the organization.



Burke-Litwin Model (1992)

Although it appears to be clear from the above model *'what one needs to change to alter the climate'*, the essence lies in individual as well as organizational performance. Certainly, the research that has been done till date suggests that the most direct path is focused on *'down the centre of the model'*, which plays an influential role in organizational climate.

6. Literature Review

A number of studies have been conducted in the field of organizational climate, ranging from the dimensions of climate to the influences of climate on the behavior of the employees.

Sandhu, Singha and Das (1977) analysed the *organizational climate as perceived by the employees at various levels of hierarchy in a bulb factory*. A sample of 192 employees consisting of 27 managers, 60 supervisors and 105 workers having a minimum of 2 years of experience in the organization completed the Hindi version of the organizational climate questionnaire (G.Srivastava, 1988). Results revealed that *authoritativeness* was perceived mostly by the managers and workers, whereas supervisors felt bureaucracy to be most persistent. *Participation, bureaucracy, rules observation, job specificity, union management, relationship and authoritarianism dimensions were found to have statistically significant differences*. Managers' vs. supervisors' were found to have significant differences on participation, bureaucracy, authoritarianism, and job specificity dimensions. Supervisors' vs. workers' had significant differences only on participation and rules observation dimensions. Lastly, managers' vs. workers' had significant differences on all 6 dimensions.

Orpen (1994) investigated 119 employees of a financial services firm performing a variety of jobs who completed measures of perceived political climate, organizational commitment and job satisfaction. The firm's personnel manager rated their status or level in the firm. Employees' level or status moderated the relationships between political climate and also both commitment and satisfaction, with high status employees being less adversely affected than their low status peers in both cases.

Organizational climate, is defined as the way in which organizational members perceive and characterize their environment in an attitudinal and value-based manner (Denison, 1996; Moran and Volkwein, 1992; Verbeke, Volgering, and Hessels, 1998), and it has been asserted as an important and influential aspect of satisfaction and retention, as well as institutional effectiveness. As a result of its subjective nature and vulnerability to control and manipulation by individuals within an organization's decision-making mechanism, the organizational climate is greatly influenced by organizational leadership (Allen, 2003; Cameron and Smart, 1998; Johnsrud, 2002; Smart, 1990; Volkwein and Parmley, 2000).

Pratap and Srivastava (1985) did a comparative study of *job satisfaction and organizational climate in private and public textile industries*. The employees of four textile industries (private and public) were located at Kanpur, India. 40 executives, 60 supervisors and hundred operating staff were measured on job

Satisfaction scale (Ganguli, 1954) and organizational climate (Likert, 1967, modified scale). The main findings were that: (a) the private sector employees are more satisfied as compared to the satisfaction of public sector employees in terms of salary, promotion policy, behavior of superior and supervision etc; and (b) the climate of private sector employees is perceived better as compared to the climate of public sector employees. It means that private sector provides more opportunities for responsibility, good communication, sophisticated technology and less conflicting situations as compared to the public sector.

Gibson and Marcoulides (1995) explored differences in leadership style across four countries. The 'Leadership Effectiveness Questionnaire' was used to measure the emphasis a leader places on each of the six leadership styles: *autocratic style, benevolent autocratic style, consultative style, participative style, consensus style and laissez-faire style in the model*. Respondents included 47 middle level management employees from Norway, 53 from Sweden, 64 from Australia, and 54 from the US. The leadership model did not differ with respect to the number of factors, the pattern of the estimates, or the correlations between factors among these countries.

Mazal, Elkachaly and Hasan (1994) investigated the effective link between organizational dimensions and managerial attitudes towards leadership styles and participation. A questionnaire was designed to test organizational dimensions and managers' attitudes towards decision-making (Mansfield, 1981), leadership styles (Haire et.al.1966), and organizational effectiveness (Negandhi and Reimann, 1972). A sample of 195 was drawn. It was found that most directors tend to follow the autocratic style in their management, attempting to be restricted by official guidelines as well as consider rewards and punishment to be best to secure control of work to be done. Managers have positive attitudes toward indirect participation

in decision making through their representatives. It was recommended not to ignore managers' social and cultural backgrounds.

Lipman-Blumen (1992) describes an integrative leadership model (connective leadership (CL), that combines the traditional masculine American ego-ideal with additional female role behaviours, more appropriate for an interdependent world. CL emphasizes connecting individuals to their own, as well as others', tasks and ego drives. Gender differences in achieving styles (i.e. Characteristics / behaviours individuals use to achieve goals) are discussed and related to the connective leadership paradigm.

Kool and Saksena (1989) explored prevalent managerial styles and their effectiveness in one private and one public sector organization by surveying 220 executives in top, middle, and lower level management. Four management styles were examined: (1) high task / low relationship; (2) high task / high relationship; (3) high relationship / low task ; and (4) low task / low relationship. The majority of managers (87 %) adopted style-2 as their primary or secondary leadership style , followed by style-3. Top and middle level managers preferred style-2 more than lower level managers. Ownership also affected the leadership preference. Private sector organization was found slightly task-oriented. 74 % of the managers were effective. Public sector managers differed significantly. Level of management did not affect the leadership effectiveness.

The above studies reflect the leadership styles which are used by the managers to balance the relationship between leadership styles and organizational climate.

The climate approach to understanding 'how work contexts affect behaviour and attitudes', grounded as it is in perceptions, provides a much needed alternative to motivation theories as explanations for just about everything that happens to people at work. It seems that contemporary organizational behaviour / industrial psychology is dominated by need or instrumentality explanations of '*why people behave the way they do*'. Irrespective of the different types of motivation theories, whether of the content (need) or process (instrumentality) related, they fail to recognize the key role of perception in organizational climate. Employees'

perceptions are excellent sources of data for climate behaviours 'paying off', in the sense that the action will be reinforced by the organization's reward structure, which may be a good indication of the climate for the particular behaviour that the employee is considering. Perceptions play an important role in both motivational and climate approaches to the understanding of behavior at work.

A second advance that climate research has provided for theorists and researchers has been its focus on multiple level of analysis. While motivators tend to focus on the explanation of phenomena from an individual perspective, climate research tends to focus on the aggregated or group level data to discover relationships between clusters of perceptions and organizationally relevant outcomes.

7. Case Example

An exploratory study was recently carried out with the objective of probing the dimensions of organizational climate and to know if there is any relationship between the climate prevailing in an organization and the leadership style of its managers, the role stress that they might perceive, the levels of commitment and achievement motivation of the employees. *Purposive sampling technique* was used to select the respondents, as the availability depended on the permissiveness of the organization. This sampling technique is a form of non-probability sampling, which is characterized by the use of judgement and deliberate effort to obtain representative sample by including typical areas in the sample.

Organizations that are in the *advertising sector and information technology sector* were chosen for the study. These sectors have been selected as they have been known to have a high rate of turnover. Also high levels of competition are present which may lead to burnout. The size of the sample was 72; 40 being from an advertising agency and 32 being from the information technology firm. It included males and females within the age range of 21 to 45. The average age of the employees was 28.08. There were 50 males and 22 females. All employees have completed their graduation and have been working in the organizations for at least 6 months and having *executive authority/power/or decision making and implementing powers*.

The number of junior level managers in the sample was 37, middle level managers were 25 and senior level managers were 10. There were 30 married respondents and 41 unmarried respondents in the group. There was only one respondent who was divorced. *Tools* used included : (a) bio-data questionnaire; (b) organizational Climate questionnaire; (c) Leader's style Scale; (d) organizational role stress scale (developed by U.Pareek (1983)); • organizational commitment scale; and (f) achievement motive scale (developed by AJM Hermans (1970).

The inventories were scored as per respective scoring methods. The scores were then fed into an excel sheet and appropriate statistical techniques were administered, with the help of the SPSS package to analyze the data.

The work environment of the organization was measured based on its various dimensions viz. *orientation, quality of work life, leadership, management of change, empowerment, problem solving and decision making, conflict management, creativity and innovation, communication, image, customer service, goal setting, role efficacy, career planning, training and rewards*. A series of 't' tests were done in order to see if there were any significant differences between the two groups on the dimensions of work climate. The groups differed significantly only on two aspects of work environment, viz. *orientation and image*. With reference to 'orientation', this refers to the way the employee perceives himself with regard to the organization. On this factor, it was found that the orientation of the two groups differed significantly with the $t= 2.322$, $df= 70$, $p<0.05$ level. This significant difference between the two organizations on the dimension of orientation can be explained in terms of the age of the organizations. The advertising agency has been in the field for the last 20 years, while the IT company is only 3 years old. Thus, the way the employee regards himself positively with reference to the organization and the way the organization portrays itself affects the perceptions of the staff. As the longer one has been in the field, the more experience one has and is able to portray a better image of one. In terms of image, it was found that $t=2.541$, $df= 70$, $p<0.01$ level. This refers to the ability of the organization to retain people and the employees' perception of it being the 'best'.

This difference could be due to the fact that the IT industry is still developing and there is a lot of competition and uncertainty in this sector. Thus, the company may not be able to retain its people and is not able to project itself as being then 'best'.

With reference to the *advertising agency*, the areas that need improvement are 'role efficacy' and 'career planning'. And the areas, which the employees perceived as satisfactory are orientation, leadership, empowerment, creativity and innovation, communication, image training and rewards. This shows that most of the employees are satisfied with the work conditions in the organization.

With reference to the *IT company*, it is observed that on the dimensions of orientation, quality of work life, leadership, empowerment, image, training and rewards, the median values were below the overall values. Whereas in the areas of career planning, problem solving and decision making, the company had higher median values than the overall value indicating that the

employees were satisfied with these particular areas; and that the condition needs to be maintained for full benefit to both the company and the employees. *This indicates that there is a degree of discontentment with the organizational climate on the part of employees.*

Overall, the two companies differed significantly on two dimensions of work environment, i.e. *orientation and image*. In terms of individual organizations, *the advertising agency employees* were more *satisfied* with their work environment than *the employees in the IT company*.

The 't' tests conducted revealed that there was no significant difference between the two organizations on the dimensions of the commitment scale. The 't' values obtained were : job integration and challenge ($t=0.89$, $df=70$, $p>0.01$ level), company prestige and synergistic work relationships ($t=1.46$, $df=70$, $p>0.01$ level), trust and confidence in the organization ($t=-0.36$, $df=70$, $p>0.01$ level) and career growth and development $t=1.94$, $df=70$, $p>0.01$ level.

't' values of 'commitment' :

	N	Mean	SD	' t '
Job Integration and Challenge :				
Advertising agency	40	56.93	11.10	0.89
IT company	32	54.78	8.87	
Company Prestige and Synergistic				
Work Relationships :				
Advertising agency	40	23.40	3.27	1.64
IT company	32	21.91	4.47	
Trust and Confidence :				
Advertising agency	40	14.68	5.54	-0.36
IT company	32	15.16	5.84	
Career Growth and Development :				
Advertising agency	40	10.65	2.12	
IT company	32	9.56	2.65	1.94

The above findings indicate that the employees in both these organizations are involved in high stress and extremely competitive jobs and this could be one of the reasons that there is no strong difference in their levels of commitment.

There was a positive correlation between *quality of work life and achievement motivation* with $r = 0.249$, $p > 0.05$ level. It can be said that as employees' perception of satisfaction in their work atmosphere increases, the level of achievement motivation of employees' increases or vice-versa.

8. Conclusion

- * The two companies differed significantly on two dimensions of work environment, i.e. orientation and image. In terms of individual organizations, the advertising agency employees were more satisfied with their work environment than the employees in the IT industry.
- * Overall, the most dominant style was the task-oriented style, while the least popular styles are the authoritarian 'and' bureaucratic styles.
- * Participative leadership style was found to be significantly correlated to orientation, creativity and innovation and career planning.
- * Authoritarian style was found to be negatively correlated with orientation, quality of work life, conflict management and rewards.
- * Nurturant leadership style was found to be significantly related to empowerment.
- * Task oriented style was found to be significantly related to empowerment, communication and rewards.
- * Bureaucratic style was negatively related to customer service, goal setting and rewards.
- * In the advertising agency, the most dominant role stressor was 'inter-role distance', while the least dominant was 'role ambiguity'.
- * With reference to the IT industry, the most dominant stressor was found to be role erosion. The least dominant were found to be role overload and self-role distance.
- * Executives in the advertising agency experience more 'inter-role distance' than those in the IT company.
- * Role stress was negatively correlated with the dimensions of climate.
- * Commitment was strongly related with the dimensions of work environment.
- * Experience and age were positively correlated with commitment.
- * Higher levels of commitment and achievement motivation was found in employees from the advertising agency.
- * Achievement motivation was positively correlated with quality of work life, image and empowerment.

The results of the study indicated that most of the aspects are highly valued by the organization. They are neither very lowly valued nor highly valued; they fall in the middle range as per the norms.

Thus, to sum up, one of the most intangible resources is the organizational climate and culture. It is a fact that organizational culture has to interact with multiple external and internal organizational-environmental factors and depending on its characteristics; the company may reap its benefits. In relation to organizational climate variables, some significant results emerge from the analysis. For instance, with reference to the advertising agency, high scores recorded for orientation, leadership, empowerment, creativity and innovation, communication, image, training and rewards provide evidence to suggest that working conditions are highly valued and positively encouraged. It is indicative of a positive climate in terms of work as well as working relationships generally within the organization.

The implications of the analysis are clear. However, whether they are extrapolated to other type of organizations is less obvious. Sufficient evidence emerges to deduce that inter-relationships between climate, culture and variables of working conditions / values do exist; and with the inclusion of additional dimensions of work environment, these inter-relationships and linkages have to be more formally and accurately assessed in a new research perspective aimed at developing a predictive model of these important concepts.

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Interviews



Prof. C. Panduranga Bhatta, Coordinator, Management Centre for Human Values, Indian Institute of Management Calcutta

Professor Bhatta is a Full Professor in Business Ethics and Communication Group and Coordinator of Management Centre for Human Values at the Indian Institute of Management Calcutta. He was the Chairperson of Post Graduate Programme for Executives (PGPEX) during 2010-12. He is also the Editor of the Journal of Human Values (JHV) published by SAGE Publications, Los Angeles, London, New Delhi, Singapore and Washington DC.

He has three and half decades of teaching and research experience in postgraduate and doctoral level. He teaches Business Ethics, Creativity and Leadership. He has published four books and more than one hundred journal papers besides regularly chairing sessions and presenting research papers at international and national conferences. He has been associated with number of research and academic institutions like Sahitya Academy, National Book Trust, India, and National Council for Education, Research and Training, and University Grants Commission etc. He has also organized many workshops/seminars/MDPs on various topics and has presented papers in national and international conferences besides participating in conferences and delivering lectures in India and abroad.

Prof. Bhatta has secured Gold Medals, National Scholarship, Research Associateships, Jawaharlal Nehru Memorial Fund Award (Twice) for the distinctions achieved in Academic field. He also has been honoured with Dewang Mehta Award in 2010 for Best Teacher in Business Ethics and Communication besides being honoured with a gold medal by the Association of Indian Management Schools for securing the prestigious "AIMS-ICFAI Best Teacher Award-2011".

1. Do you feel that we need to have a different set of Values and Ethics in the 21st century?

I do not think so. Moral values are eternal and universal and they do not change according to time or region. I will give an example here. Recently, Harvard Business School has started an Oath taking ceremony for its MBA students which is popularly known as "The MBA Oath". In this Oath, as the students become business

leaders, they are asked to recognize their role in society. They are required to promise that they will manage their enterprises with loyalty and care, and will not advance their personal interests at the expense of their enterprise or society. They are also to assure that they will refrain from corruption, unfair competition, or business practices harmful to society besides protecting the rights and dignity of all people affected by their enterprises, and will oppose discrimination and exploitation. This Oath emphasises the importance of a myriad of core values like honesty, equality, selflessness, sincerity, ethical actions, etc., which have been insisted from time immemorial in all countries and cultures.

Ancient Indian thinkers also focussed on building a disciplined and values-based culture. Human values such as trust, respect, honesty, dignity, and courtesy are the building blocks of any free, advanced society. Discipline, like character, is an essential quality for personal as well as social life. The convocation address found in the Taittiriya Upanishad throws more light on this aspect. The conditions of studentship mentioned in this convocation address are to honour superiors and to give in proper manner and spirit, in joy and humility, in fear and compassion. This convocation address tries to inculcate in students, qualities such as social consciousness based on love for humanity, character, honesty based on moral law and, discipline based on the sense of duties and responsibilities of an individual. How is this convocation address different from "The MBA Oath"? Therefore, we can say that there is no need to create a different set of values and Ethics in the 21st century. What we need to do is to operationalize timeless values through practice.

2. What do you think are the reasons for wide-spread corporate unethical practices in the world?

One reason could be the tendencies of the leaders in all fields just to preach values and ethics without caring for their own thoughts and actions. Personal examples of leaders inspire people to do what they are expected to do and people normally follow the example of their leaders. All over the world people setting personal examples and standards are missing. When people in leading positions behave in unethical or improper manner, people observing them will imitate their unethical practices and also openly express that they are just following the example set by their leaders. A beautiful verse in Bhagavad-Gita quoted below captures this message:

“Whatever a great man does, other men also do the same.

Whatever standard he sets (for himself), the people follow that”.

Second reason could be not practising the Strategic Pursuit of Human Needs formulated by ancient philosophers and thinkers. According to them the life of humans consists in their desires. A human being is described by the Upanishads as a collection of desires. “As his desire, so is his nature”. To fulfill these desires, humans have to earn and gather material aid, i.e. wealth. All such material aid is called artha. It is an instrumental value, and should not be pursued as an end in itself. The pursuit of wealth becomes a value only when it does not contravene the canons of social justice and morality (dharma). Otherwise it becomes a disvalue and stands condemned. Both passions (kama) and possessions (artha) have to be regulated by dharma. The term artha comprises the whole range of tangible objects that can be possessed, enjoyed, shared or lost. Artha is absolutely necessary for living a life. Without wealth virtues become impracticable. Sri Aurobindo Observes:

Power, wealth and sex are the strongest attractions for the human ego and they are mostly misused by those who retain them. The seekers or keepers of wealth are more often possessed rather than its possessors; few escape entirely the distorting influence stamped on it by its long seizure.

The main cause of unhappiness among humans is evil actions of their own or those of other human beings particularly related to their desire to acquire more and more wealth and material pleasures. The doctrine of strategic pursuit of human needs was formulated to strike a reasonable balance between the interests of the individual and the public interest, which means the interest of all individuals who constitute society or the nation and even the entire humanity. It offers an invaluable solution for all the problems of human beings. The fulfillment of desires is an essential aspect of life and without it life is meaningless. What are the natural desires of a human being? Desire to have good living conditions, good food, clothing and dwelling, wealth and all other articles or things which, secure comfort and pleasure as also sexual and emotional enjoyment.

The author of the *Mahabharata* laments with upraised arms over the fatal greed of people who ignore integrity and fellow feeling in the insatiable pursuit of power and pleasure. He says, ‘it is a fact that people do pursue virtue (*dharma*) i.e. they want to conform to the laws of virtue, but this impulse may not be as strong or widespread as the impulse to seek profit and pleasure. Hence the need to emphasise that virtue has to be, ought to be followed.

An idea that is to be drawn from the ancient Indian ethical thought tradition is the meaning of desire. Lord Krishna says, “dharmavirudho bhuteshu kamosmi” that “I am desire which is not against the rules of dharma”; meaning that desire itself is not bad, provided it is not harmful to other beings.

This significant concept of harmonious development upholds the legitimacy of humans’ desire for economic security and sensuous satisfaction. But it does not support the insatiable greed, which could destroy the possibility of realizing them.

Ancient thinkers do not advocate the starvation of vital impulses. They advocate the regulation in such a manner as not to endanger society or one’s mental health. Human beings are not supposed to deny themselves the normal pleasures of life.

Patanjali’s work viz. Yoga sutras are still the most profound and enlightening study of the human psyche.

In his work, Patanjali describes the enigma of human existence.

He shows how, through the practice of yoga, humans can transform themselves, gain mastery over mind and emotions, and overcome obstacles to their fullest development. J. Krishnamoorthy, the famous philosopher of India has expressed the opinion that only meditation is of no use in controlling the wrong doings. According to him 'putting the house in order' should be given the top most priority. In his opinion meditation does not help in 'putting the house in order'. According to him one can put the house in order by taking care of personal and community values.

Buddhism talks of the middle path i.e. harmonious development of multiple dimensions of the human personality which lie between two extremes, viz. vile pleasure seeking and extreme asceticism. Emphasis here is on: Purity of conduct, truthfulness, love and benevolence, respect for the elders, non-drinking, charity and kindness and mercy to all living beings.

3. *How can we promote and sustain an ethical society? What do you think is the role of the individual, family, business firms, governments and society?*

To promote and sustain an ethical society, it is better to desist from talking about what the others should do or what politicians should do or what leaders must do. Instead, individuals, families, and business firms must talk about what they should do. If each of these units decide today to make the world a better place for living and for future generations, certainly it will produce great results.

Great leaders all over the world were concerned with practising values rather than talking of values. Mahatma Gandhi once said that his life is his message. He said, "you must watch my life, how I live, eat, sit, talk, behave in general. The sum total of all these in me is my religion". All these great persons ask people to do only one thing: 'practice whatever you preach'. If each one of us practises values and ethics instead of expecting others to lead, the world will become ethical and sustainable. The standard to be followed here is, "Being Honest when no one is watching".

This means we must wake up the better human being embedded in each one of us. This may be done by appealing to the inner conscience of every living human being.

4. *In the wake of wide-spread corporate unethical practices, what is your suggestion to offer a course on Business Ethics to B-School students who argue that business ethics cannot be operationalized in the real corporate world?*

This may be answered by looking at the vision and mission statements of top Business Schools. Had they believed that ethics cannot be operationalized in the real corporate world, they would not have any reference to ethics and values in their vision and mission statements. A cursory glance at their vision and mission statements would convince the relevance of values and ethics in Business. I quote some the statements found in the top B-Schools of the world below:

"To develop outstanding business leaders who will contribute to the well being of society" –Harvard Business School for its MBA programme.

"To develop principled, innovative leaders who improve the world" –Sloan

"To develop innovative, principled, and insightful leaders who change the world" –Stanford

"To develop innovative, ethical and caring future leaders"- Indian Institute of Management Calcutta

"To develop ethical, dependable, entrepreneurial, and socially sensitive leader-managers committed to excellence"- Indian Institute of Management Ahmadabad.

"Let us together join our mental forces in strength for the benefit of humanity.

Let us never be poisoned with the seeds of hatred for anyone.

Let there be peace and serenity in all the three universes"-Indian Institute of Management Bangalore

“To develop Humility, honesty and hard work for individual and corporate success,

Holistic development of individual, institution and the society at large,

Harmonious co-existence with the environment and the society at large”- Indian Institute of Management Ranchi.

Surprisingly IIM Ranchi has adopted a Crow in its logo. Instead of going for Swan or Lotus which is the normal practice, they accepted crow in their logo! Its founder Director, Professor M.J. Xavier says,

“Crow has several positive traits that the Institute stands for. Crow is an epitome of community living and sharing and caring of each other which are the ethos of IIM Ranchi”.

The path breaking empirical research done by Professor Srikant Datar, David A Garvin and Patrick G Cullen of Harvard Business School is printed in a book viz. “Rethinking the MBA: Business Education at a Cross Road”. To improve the value dimension of B-School students they have suggested “Knowing, Doing and Being model” of education in their book.

Being part includes:

Values, attitudes, beliefs that constitute one’s character & worldview, being aware of the line between right & wrong, the preferred treatment of others, the purpose & goals of organisations & the behaviours that exemplify integrity, honesty, & fairness. The buzz word in today’s corporate circle is 3Ps, Planet, People and Profit. If values and ethics are not congruent with profit making, CSR and Environmental auditing would not have been insisted in the corporate world.

5. It is increasingly realized that business organizations should have inclusive business model in the wake of sustainability development and inclusive growth. What inclusive business model do you have in mind for business organizations?

The globalised business world needs inclusive business model. We need to adopt innovative approaches that

foster understanding and build bridges across ethnic, racial, cultural and religious groups besides promoting social welfare, economic development, and tolerance of all religions and cultures. Out of compassion, we must promote the welfare of the world by setting up the right norm of action. The delicate and holistic balance that exists in nature has to be respected and maintained. We should care for the well being of the planet as a whole, together with all its inhabitants (including human being) and nonliving resources. We must live in harmony with nature and eschew violence to any form of life. Violence harms the sacred unity and causes disease and suffering which sends life out of balance.

6. How do you think teachers can nurture and mould the thought process of the students to develop enduring values with an ethical foundation? Please share with us some of your experiences.

Management Centre for Human Values’ agenda is to provide an effective approach to make students more socially concerned, compassionate, liberal, inclusive, ethical, and humane. There is no denial that the purpose, the aim and drive of the educational institutes, must be to equip the students with the most excellent technological proficiency so that the students may function with clarity and efficiency in the modern world. But a far more important purpose than this in the opinion of J. Krishnamurti is to create the right climate and environment so that the students may develop fully as total human beings.

Total human being means not only a human being with inward understanding, with a capacity to explore, to examine his or her inward state and the capacity of going beyond it, but also someone who is good in what he or she does outwardly. The two must go together. That should be the real issue in management education also: to see that when the students leave the B-School, they are well established in goodness, both outwardly and inwardly.

In order to achieve this, the management educational process must awaken the intelligence of students so that they may ‘flower in goodness’. The cultivation of a global outlook, a love of nature and a concern for fellow human beings and environment should be

part of the scheme of management education. In order to achieve this, management education has to cover the four distinct dimensions of human personality beginning with the physical body, the development of intellectual and aesthetic sensibilities, the development of socially desirable moral values and finally, the inner dimension of spiritual growth. Management education must also facilitate the students to identify the meaning and purpose in life through connections to the community, to the natural world, and to spiritual values such as compassion and peace. Essentially, a universally applicable management

educational framework should highlight the purpose of human life and interconnectedness at all levels of existence as a basis of human values. In this system, understanding oneself (self-knowledge) is as important as understanding the world. Management education must also help in understanding one's relationship with nature, with ideas, with fellow human beings, and with society besides developing a deep respect for all life. True management education must also lay a secure foundation for trust, cooperation, teamwork, altruism and similar indispensable lubricants of societal life.

* * *

*The indispensable first step to getting the things you want out of life is this:
decide what you want*

-Ben Stein

If you can't live through adversity, you'll never be good at what you do. You have to live through the unfair things, and you have to develop the hide to not let it bother you and keep your eyes focused on what you have to do

— **Maurice "Hank" Greenberg**

The goal is not perfection but rather a posture of moving toward healthy habits and characteristics

— **Brad Lomenick, The Catalyst Leader**

Tom Copeman, Founder & CEO of Nara Logics, Inc.



Tom Copeman is a creative visionary and serial entrepreneur who has built companies and brands such as lululemon athletica Australia - New Zealand, BodyGlide, and now Nara, (www.nara.me) a start-up that looks to solve the problem of web search by crafting a more personalized and liberating Web with a next-generation personal internet platform. In addition to his life as an entrepreneur, Tom has worked in the Internet sector in roles ranging from principal investor and analyst for both private and publicly held companies, to corporate development for a national web developer and consultancy.

1. *What made you want to become an entrepreneur and how did you fund your first business?*

I decided I wanted to become an entrepreneur after I realized that working in a conventional and corporate environment really was not me. Ever since my childhood, I have always been challenging the status quo with creative possibilities. I always try to imagine how we could take something ordinary and make it extraordinary.

For BodyGlide, I was begging and borrowing from anyone I could and wasn't afraid to quit my conventional job and take the big plunge – a plunge that many people see as risky, but that I see as more stimulating and rewarding.

2. *What inspired you and motivated you to create your numerous startups, and now Nara?*

Ever an eternal optimist, I have a drive to make the world better and people's lives brighter. I have always had a deep drive to turn my visions into the world's reality.

I've always had a passion for building brands and products that create new categories, challenge existing boundaries, and improve your life so that's what inspired me to create BodyGlide, bring lululemon athletica to Australia/New Zealand, and now launch Nara.

I originally had the idea for Nara in the late '90s when I was traveling frequently for business and wanted to maximize my experiences in each destination. I became fascinated with the idea of the human condition and self-awareness, how people spend their time, and how they ultimately get to the decisions they make. At the same time, I realized that I didn't enjoy my

relationship with technology, and I wanted to do something to change that.

I wanted to build a system of technology that shifted back the powers of control by making it work for me, rather than against me. Around five years ago, in the midst of the tech and Internet boom, all of these ideas became much clearer to me and I realized that I needed to act on them. I finally saw an opportunity to pursue the idea in 2010 when I was exiting my position at lululemon as co-founder and executive director of Australia/New Zealand and trying to figure out my next move.

3. *What made you move from LA to Cambridge to start up Nara?*

In general, you want to go where the market opportunity lies and where the best talent is located. For example, with BodyGlide (athletic driven product) it made a lot of sense to position the brand in California which has a highly athletic driven culture; lululemon athletica – the market opportunity was wide open to build the brand in AUS/NZ; with Nara – it's all about the brain trust and resources that are available in Cambridge.

For Nara I wanted to be near the center of innovation, the very best breed of neuroscientists, physicists, and computer scientists who specialize in artificial intelligence and we believe those people are in Cambridge at MIT. Once I knew I wanted to set up shop in Cambridge, I was introduced to Dr. Nathan Wilson who holds a doctorate in brain and cognitive sciences from MIT and a master's in engineering with an emphasis in computer science and artificial intelligence from Cornell University. Soon after, I packed up my family in sunny southern California and moved the clan to Boston to launch Nara with Nathan.

4. *How did you get others to take you seriously as a young entrepreneur when first starting out?*

My level of demonstrated focus, commitment, passion, and conviction in my idea helped them take me seriously. It's also important to concisely express the market opportunity, the problem you're solving, any competitive differentiators, why it will be successful, and why they can't afford *not* to invest. In short form, investors are always looking for innovative, value adding and proprietary ideas.

5. *What challenges and fears did you have to face in the first year of starting your first business and how did you overcome them and motivate yourself to keep going?*

When I started my first company, BodyGlide, my biggest fear was failure. In the early days of building a company, one fear is that you'll run out of money before the business begins to cash flow. One way to stave off this fear is to be a very strong custodian of capital by maximizing all of your available resources. Never give up. What kept me motivated through it all was that I knew going back to work in a corporate environment was just not an option for me.

6. *What has been your most successful approach to marketing your businesses and building a following for them?*

Grassroots, viral, and community!

With Bodyglide it was all about local field marketing at athletic events and competitions. Lululemon does an extraordinary job of building local communities for the brand, and at Nara we are leveraging PR, social media, and viral community marketing to build our brand.

7. *What's been your philosophy for new hires for your companies? What qualities do you look for in a new hire?*

My philosophy has always been hiring passionate, optimistic, curious, confident, and high-energy individuals with a strong work ethic and moral code. It's also important that they are intuitive, creative, and

are self-motivated. At Nara, for example, we have hired an amazing brain trust of creative artists, neuroscientists, physicists, computer scientists, and technology and internet industry veterans. At the end of the day, we are looking for people who are ready to have fun because we want to spend our days with people we enjoy being around.

8. *What have been your most rewarding experiences as an entrepreneur?*

It has to be taking something all the way from ideation to commercialization. It's always rewarding to see strangers use products you've built. I really enjoy watching people grow inside a company and develop their own sense of self and accomplishment. Building a culture is everything. Great companies are a by-product of a great culture.

9. *How have you best managed to balance the demands of your business with your home life?*

It's all-inclusive. While family and work can tend to blur together, it's integral to look at these various parts of your life as distinct entities, giving them each the proper time and attention that it deserves. I have two daughters and if I miss dinner with my kids, I make sure to have breakfast with them in the morning. I also try to give my children a perspective of my days at work by having them visit the office from time to time. Unplugging is important - we make sure to enjoy time together as a family whether we are skiing, out on the beach, or just at home watching a movie.

It's a double edged sword, you get to work for yourself but work can also always be on your mind. I find myself able to detach somewhat on the weekends when I'm out at my daughters' sports activities or exercising myself. A startup environment in general is very time intensive and demanding. So it's very important to love what you're doing and to have the support you need from home. If you don't have the support you need from home, your business will not be successful.

10. What's your educational background like and what aspect has been the most beneficial to you as an entrepreneur and start up CEO?

I have a BA from the University of Southern California in marketing and finance, have started and sold two companies: lululemon athletica Australia and Body Glide, and have 10+ years of Internet sector experience ranging from principal investor and analyst for both private and publicly held companies. Marketing and finance have served me well as it relates to building consumer brands and fostering their growth and financial success. I think my educational background coupled with my own self-awareness that I view the world uniquely has been most beneficial to me as an entrepreneur and startup CEO.

11. What have you learned on your journey that you wish you knew when you were first starting out as an entrepreneur?

Over the years I've learned the importance of staying true to my visions and beliefs. And most importantly, you want to surround yourself with very strong and confident people that can add to and believe in your vision.

12. Finally, what overall advice would you offer young entrepreneurs who are hoping to emulate your success?

Once you have something, whether it's a thought or an established startup, pour every ounce of passion, enthusiasm, and commitment to see it through. Don't be swayed by group think – think for yourself, remain independent and true to your vision. And most importantly, get up every morning and tell yourself "I'm gonna kill it."

Courtesy: Puneet Lakhi, www.EntreRev.com

* * *

The quality of a man's life is in direct proportion to his commitment to excellence, regardless of his chosen field of endeavor

- Vince Lombardi

An army of lions commanded by a deer will never be an army of lions

- Napoleon Bonaparte

Two captains sink the ship

- Turkish Proverb

International Trade and Business Updates

Trade and Development Report, 2012 by United Nations Conference on Trade and Development, United Nations, New York and Geneva

Trade and Development Report 2012 presents that the world economy, which continues to suffer from the fallout of the financial crisis that began in late 2007 and the meltdown in September 2008, has not been able to revive the growth conditions of the preceding decade. Those conditions had been particularly supportive of economic and social progress in the developing world, and the resulting momentum, especially in some of the larger developing countries, helped to stoke recovery in the world economy once the worst of the crisis had been contained. However, the report finds that those countries are now losing that momentum and downside risks for the world economy are growing again. Now, the immediate problem is the inability of the developed countries to return to a normal growth pattern, but there is also an equally serious problem of contagion. Amidst their fragile recovery, an unreformed (and unrepentant) financial sector and macroeconomic policies that are timid at best, and counterproductive at worst, the developing countries will find it difficult to sustain their own growth dynamic, let alone that of the global economy.

Source: www.unctad.org > Publications

Financial Instability as a Threat to Sustainable Development, Policy Brief, No. 11 by Yilmaz Akyuz, Chief Economist, South Centre, October 2012

This policy brief of South Centre finds that as seen over and over again during recurrent financial crises in both developing and advanced economies (DEs and AEs), including the recent global crisis originating in the US and Europe, financial instability and boom-bust cycles undermine all three ingredients of sustainable development – economic development, social development and environmental protection.

Financial bubbles generate excessive investment which remains unutilized for an extended period even after full recovery from the ensuing financial crisis. This

includes investment in industry as in Japan in the late 1980s and early 1990s as well as in property, as seen during the current crisis in the US and Europe. The policy brief explains that this is the main reason why recoveries from financial crises see little investment.

Source: www.southcentre.org > Policy Briefs

Asia-Pacific Trade and Investment Report 2012: Recent Trends and Developments by United Nations ESCAP Trade and Investment Division

The Asia-Pacific Trade and Investment Report (APTIR) is a recurrent publication prepared by the Trade and Investment Division. It aims to deepen understanding of regional trends and developments in trade and investment; emerging issues in trade, investment and trade facilitation policies; and impacts of these policies on countries' abilities to meet the challenges of achieving inclusive and sustainable development. APTIR 2012 focuses on trends and developments in the economies of Asia and the Pacific in their post-recovery from the 2008-2009 crisis and trade collapse. The Report finds that after the initial promising signals of a recovery in 2010, exports from Asia and the Pacific are again facing a risk of deceleration. The intensified pressure in the euro zone and the rising threat from a slowdown in the emerging economies has raised the fear of a re-emergence or trade and investment contraction. The growth of goods exports in developing Asia and the Pacific countries, in real terms, is expected to drop from 6.5% in 2011 to 2% in 2012, while import growth is projected to fall from 9% to 3% during the same period.

Source: www.unescap.org > Documents

Financial Stability Report: December 2012 by Reserve Bank of India, December, 2012

The sixth issue of the Financial Stability Report (FSR) of the Reserve Bank of India is being released in an environment of global macroeconomic instability and uncertainty. The report finds that economic growth in India has moderated in recent quarters, buffeted by global headwinds and domestic policy uncertainties. Growth, however, needs to accelerate if the momentum

of poverty reduction, employment generation and pay off from the demographic dividend is to be accelerated. The Report reflects the collective assessment of the Sub Committee of the Financial Stability and Development Council (FSDC) on risks to financial stability.

Source: www.rbi.org > Publications

2012 World Development Report on Gender Equality and Development by the World Bank, December, 2012

The lives of women around the world have improved dramatically, at a pace and scope difficult to imagine even 25 years ago. Despite the progress, the report observes that, gaps remain in many areas. The worst disparity is the rate at which girls and women die relative to men in developing countries. Excess female deaths account for an estimated 3.9 million women each year in low- and middle-income countries. About two-fifths are never born due to a preference for sons, a sixth die in early childhood, and over a third die in their reproductive years.

The report argues that closing these gaps is a core development objective in its own right and it is also smart economics. Greater gender equality can enhance productivity, improve development outcomes for the next generation, and make institutions more representative. The analytical core of the Report constitutes a conceptual framework that examines the factors that have fostered change and the constraints that have slowed progress. The analysis focuses on the roles of economic growth, households, markets, and institutions in determining gender differences in education and health, agency, and access to economic opportunities.

Source: www.worldbank.org > Publications

Thinking Local, Going Global: Building Tech Start-ups in Africa by Knowledge at Wharton, January, 2013

With limited infrastructure, a challenging regulatory environment and a small pool of skilled employees, tech start-ups in Africa face a difficult road to success. But panelists at the recent Wharton Africa Forum say that the companies also stand to tap into a continent ripe with opportunity and one where there is limited

competition from powerful multinationals. Yet they find that it can also be a great opportunity for those willing to negotiate their way through those challenges, according to experts and entrepreneurs on a panel titled, “Technology Start-ups in Africa,” at the recent Wharton Africa Business Forum.

Source: Knowledge @ Wharton > Innovation & Entrepreneurship

Achieving Excellence in Energy Networks: A Holistic Approach to Operations by Magín Yáñez, Pattabi Seshadri, Alfonso Abella, Javier Argüeso from The Boston Consulting Group on February, 2013

BCG studied best practices of energy networks worldwide to understand how operators can best address investment, regulatory, and customer pressures. The study found that following a holistic approach, pulling the right combination of levers, and implementing the appropriate program, network operators can reduce total expenditure by as much as 15 percent.

Source: www.bcgindia.com > Publications

Towards better reference rate practices: a central bank perspective by Bank for International Settlements, March, 2013

This Report reviews issues in relation to the use and production of reference interest rates from the perspective of central banks. These issues reflect the possible risks for monetary policy transmission and financial stability that may arise from deficiencies in the design of reference interest rates, market abuse, or from market participants using reference interest rates which embody economic exposures other than the ones they actually want or need. In parallel to initiatives in other forums and jurisdictions, including work by the International Organization of Securities Commissions (IOSCO), the European Banking Authority (EBA) / European Securities and Markets Authority (ESMA) and the UK Wheatley Review, the Report provides recommendations on how to improve reference rate practices from a central bank perspective. The Working Group (WG) identifies an urgent need to strengthen the reliability and robustness of existing reference rates and a strong case for enhancing reference rate choice. Both call for prompt action by the private and the public sector.

Source: www.bis.org > Publications > Research at BIS

THE STATE OF FOOD AND AGRICULTURE 2012, INVESTING IN AGRICULTURE for a better future by Food and Agriculture Organization on December 2012

The State of Food and Agriculture, FAO's major annual flagship publication, aims at bringing to a wider audience balanced science-based assessments of important issues in the field of food and agriculture. Each edition of the report contains a comprehensive, yet easily accessible, overview of a selected topic of major relevance for rural and agricultural development and for global food security. This is supplemented by a synthetic overview of the current global agricultural situation. The current edition finds that investing in agriculture is essential for reducing hunger and promoting sustainable agricultural production. Eradicating hunger sustainably will require a significant increase in agricultural investments, but also an improvement in their effectiveness.

Source: www.fao.org > Publications

Doing Business 2013 Smarter Regulations for Small and Medium-Size Enterprises by the World Bank Group on October, 2012

Doing Business 2013: Smarter Regulations for Small and Medium-Size Enterprises assesses regulations affecting domestic firms in 185 economies and ranks the economies in 10 areas of business regulation, such as starting a business, resolving insolvency and trading across borders. This year's report data cover regulations measured from June 2011 through May 2012. The report marks the 10th edition of the *Doing Business* series. Over the past decade, these reports have recorded nearly 2,000 regulatory reforms implemented by 180 economies.

Source: www.doingbusiness.org

Energy Resources Development Series 42 - Widening Energy Access and Enhancing Energy Security to Achieve the Millennium Development Goals in Asia and the Pacific by Environment and Energy Division of UNESCAP on March, 2013

In 2013, ESCAP will convene the Asian and Pacific Energy Forum a ministerial-level event to facilitate dialogue among member States towards promoting energy security and sustainable development. This

assessment report presents an overview of the energy access situation in the Asia-Pacific region, including prevalent policies and programmes to address them, with the view to identify common challenges that could be addressed through regional cooperation, and a plan of action towards the Forum.

Source: www.unescap.com > Publications

Achieving Development Success: Strategies and Lessons from the Developing World by United Nations University World Institute for Development Economic Research No. 978-92-808-3103-0, February 2013

This Policy Brief highlights successful development strategies and lessons from in-depth case studies of select countries from the developing world. The coverage of the brief includes East Asia and the Pacific, the emerging Asian giants, sub-Saharan Africa, Latin America and the Caribbean, and the Middle East and North Africa, along with respective regional syntheses. Although countries' experiences are not necessarily replicable, the recurrent themes across countries and regions provide the appropriate connectedness for a comprehensive global perspective on development strategies and lessons.

Source: www.wider.unu.edu > publications > policy-briefs

Pacific Economic Monitor by Asian Development Bank on March 2013

This edition of the Pacific Economic Monitor discusses 2013 and 2014 GDP growth and inflation projections for ADB's Pacific developing member countries. The theme of the policy briefs included in this issue is energy in the Pacific. The report finds that economic growth in the Pacific moderated to 7.3% in 2012, from a post-crisis high of 8.3% recorded in the previous year. This regional trend was driven primarily by the performance of the region's larger, natural resource-extracting, economies. Growth is seen to moderate further in 2013, before picking up in 2014. Inflation moderated to 5.3% in 2012 from 8.5% in 2011 as international food and fuel prices stabilized, albeit at high levels.

Source: www.adb.org > Publications

Book Reviews

Ruchir Sharma (2012), *Breakout Nations: In Pursuit of the Next Economic Miracles* (Amazon Publications, New Delhi); 304 pages, ISBN: 9780393080261

Yogesh Kulkarni*

Where will the money go?

Assessing economies as investment destinations is not an easy task, but given someone with the credentials of Ruchir Sharma, the outcome is a set of delightful essays throwing light on which nations are likely to flourish or disappoint in coming decades. Ruchir Sharma is the head of emerging markets at Morgan Stanley and a longtime columnist for Newsweek, the Wall Street Journal, and the Economic Times of India. In *Breakout Nations*, the celebrated author conducts a brisk worldwide tour in search of new markets ready for takeoff.

Post global financial crisis of 2007-08, it has become clear that advanced economies are set to lose their grip on the world economy to the emerging economies. However, the critical task is which specific economy or economies have power to replace the supremacy that has been enjoyed by the world's leading western economies. The total amount of funds flowing into emerging –markets stocks grew by 92% between 2000 and 2005 and by a staggering 478% between 2005 and 2010. The emerging market mania began with China. The economies like India, Brazil, Russia, joined the party in early years of the last decade.

The global financial crisis has played critical changes in the global economic power game. The global investors have identified the emerging economies are the new source of yield maximization. Sharma pointedly says, "not all trees grow to the sky". The book focuses on the countries, which have the potential to grow with few assumptions associated with political and economical landscape.

The average length of time investors hold stocks has been falling from a peak of 16 years in the mid-1960s

to under 4 months today. In the 1970s it took \$1 of debt to generate \$1 of U.S. GDP growth; by the last decade it took \$5. Real GDP growth in developed nations is expected to fall this decade to about 2-2.5%. Author Sharma is head of emerging markets at Morgan Stanley and as such spends one week each month visiting other nations looking for the best places to invest.

The book is an attempt to find the out the question – where the money will go? Is it India- the world's fourth largest growing economy? The country has serious problems with its twin deficit (fiscal and trade). The political paralysis is in place and 2014 will be the vital year for the country.

The challenges are many to sustain the economy on the current growth path even though it is just 5%, which is significantly below the 9%, achieved in the first half of the last decade. Ruchir describes India as the country, which has a new map of the middle class. The growing population is a competitive advantage for the nation rather than a threat. The wild card for India is its freewheeling democracy. The major line of the difference is lies with India and China at this ground. These two counties often get compared however, the key difference remain unnoticed. Despite of inflation and deficits, growth story of the country has enough fabric to keep global audiences's interest in India. However Sharma pointed out concern for reforms and government policies. The huge potential in infrastructure and long-term projects is untapped. Ruchir remarks on worlds fastest growing economy is not fully positive, he said China's growth would slow sharply. Total debt as a share of GDP is rising, it's cheap labor advantage is rapidly disappearing, its consumers are already strongly participating in its new economy - spending has increased nearly 9% year

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for 30 years, and some estimate China already has a 25% share of the world's luxury market, its 'one-child' policy is now bringing an aging population (average age 37 in 2020, vs. 29 in India and 49 in Europe).

Brazil, like India, also has high expectations for state-provided social welfare, its currency has risen sharply, growth has fallen to 4% GDP year during the 2003-07 period, and to combat inflation, Brazil has one of the highest interest rates in the world. Mexico's top ten business families control almost every industry in Mexico, with market shares ranging between 60 - 80%. U.S. corporate profits average about 12% GDP, in Mexico they're 25%.

As far as Russia is concerted, Sharma sticks to the basic ground realities haunting the resource rich nation. He tellingly says that despite a relatively high per capita income, citizens incur frequent power outages and the roads and airports are old. Oil comprises about half of the government's income. Despite Russia having been first into space and has produced 27 Nobel winners in science, mathematics, and economics, it has no global

manufacturing companies on its stock exchange; Sharma concludes his downbeat assessment of the once roaring global superpower.

Investors need interest on the investment. In this connection the political and economical analysis of the country has vital importance. Sharma's day job is head of emerging markets at Morgan Stanley Investment Management. In this role, he gets opportunity to interact with global leaders, policy makers, fund managers, analysts.

He is positive about the India's growth story while he is worried more about Brazil. Sharma is worried for Russia in particular the way it has failed to build a substantial middle class. His gold medal goes to South Korea, the "Germany of Asia", in particular for the way it has become a manufacturing powerhouse. Sharma has bright hopes for South Korea. Every country has some advantages and disadvantages in this global trade. The money will go where the profit is visible. Undoubtedly, it will come to emerging economies. The search for the best profitable market will be active always.

If you command wisely, you'll be obeyed cheerfully

- Thomas Fuller

Go before the people with your example, and be laborious in their affairs

- Confucius

11. Concentration is the secret of strengths in politics, in war, in trade, in short in all management of human affairs

- Ralph Waldo Emerson

Vineet Nayar (2011), *Employees First, Customers Second: Turning Conventional Management Upside Down* (Boston: Harvard Business Press); 198 pages, ISBN 978-1-4221-4387-2

Shiva Kumar Srinivasan *

The conventional wisdom in management, needless to say, is that the 'customer is king'. What does it mean then to put 'employees first, customers second'? Vineet Nayar's contention is not that customers don't matter, but rather that they are more likely to be looked after if employees feel that they matter. In the attempt to please customers, firms have increasingly focused on the loyalty of customers without realizing that it will come at the cost of the loyalty of employees. The larger question at stake in such debates is whether there is a trade-off between being loyal to employees as opposed to being loyal to customers. Is there a way of avoiding such a trade-off? Or is making such a trade-off inevitable? Another question that is worth asking is whether Vineet's claim is specific to the kind of knowledge workers that he has to manage in the IT sector in India or whether the lessons of this book can be scaled-up into a theory of general management. While Vineet doesn't address this question as one that can and should be answered in all possible contexts that constitute the socio-economic relationship between a firm and its employees or a firm and its customers, it is safe to infer that Vineet is quite serious in making this claim at the level of his own firm HCL, and his own sector, IT. This book has the rudiments of a CEO doing a case study of his own firm. What is really at stake however is not reducible to the IT sector as such, but has important implications for those working in the areas of HR and organizational development. This book should be of use to both executives and consultants who are on the lookout for ways to rethink the traditional arrangements and relationships between management and its employees. One way of situating this book is under the aegis of HR approaches to organizational development though the scope of its applications should be decided on a case-by-case basis by OD consultants and HR teams who are trying to turn around firms.

While some aspects of this book are like a case study, there are some parts that are structured like the memoir of a CEO (who reflects on how and why he accepted the audacious responsibility of trying to turn around a firm that was in decline, and how he found the means to communicate with his employees in a way that would increase their sense of commitment and trust to the firm). Vineet differentiates between three categories of employees: the transformers who were willing to experiment with something new, the nay-sayers who were cynical, and the fence-sitters who were waiting to see how things would play out in the firm before committing to organizational change. The main interventional strategy described in this book is 'reverse accountability'. What this means is that within his span of control, the person in charge of an area or a department is as accountable to those under his wing, as are those employees for performance in the traditional model of management. This is a radical departure from the conventional model where management doesn't have to explain its rationale, but can work instead by issuing orders, instructions, and requests to its employees. The problem with this approach is that it doesn't work in the 'knowledge economy' where employees insist on understanding the *strategic rationale* for *why they are doing what they are doing*. It is also important to understand that it is *not* possible to sell ideas to knowledge workers; one can only hope that they will buy ideas on their own once they have understood its significance for their line of business. That is why reverse accountability is a way of cutting through the cynicism that might have overcome the firm. It is the ultimate proof that management wishes to give them a stake in the success of the firm. It is also proof that HR processes can be re-arranged by defining the employees as 'internal customers' who are as important as the 'external customers' who generate revenue. This is the only

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approach that is sustainable in employee relations, argues Vineet, especially if a firm is preoccupied with taking Gen Y employees along. The cognitive patterns, the levels of individualism, and the forms of multimedia entertainment that this generation is used to are more likely to be appreciative of reverse accountability rather than the top-down models of management that have been the mainstay of management theory until now. Vineet's book is an indication of the far-reaching changes underway in the IT sector as it becomes the prototype of a new breed of HR relations that will revolutionize how firms manage the expectations of employees and customers in the years to come. Those who ignore the innovative arguments in this book do so at their own peril.

The main goal of this book is to create an environment where an employee is more likely to bring his 'whole self to work' rather than feign participation. Under-commitment on the part of employees to the firms where they work is often a result of not being able to situate their own efforts within the strategic goals and objectives of the firm. This approach of putting employees first is also of significance from the point of view of Strategic HR because it amounts to saying that employees will be fully consulted on matters of strategic significance. A good example of this is the huge number of meetings that Vineet participated in during the change effort. The main goal of these meetings was to decide whether HCL should compete for the market controlled by the Big Four IT firms or redefine its market segments. Vineet is haunted by the idea that the IT sector has not been able to capture more than 1% of the global market for IT products and services, and the portions captured so far do not give these Indian firms pride of place as strategic

partners in a long-term relationship with their global clients. It is therefore important to push beyond what Sumantra Ghoshal elsewhere described as 'satisfactory under-performance', and attempt a strategic rethink on the extent of the market segments that the IT sector should aim for in the years to come. Most readers will be taken aback by Vineet's revelation on how miniscule the present size of the market for Indian IT is abroad, but simultaneously heartened to learn that the IT revolution in India is far from over. If we take Vineet's numbers seriously, we might want to conclude that the best of the IT sector is yet to come. The IT revolution has barely begun. What this means for HR teams and OD consultants should be clear: the great breakthroughs in HR processes and OD interventions are going to be modeled in this sector since the leaders of this sector are working with intangibles in the form of 'human capital' rather than with conventional physical assets. It is time for HR teams to seriously track the IT sector if they are to understand, come to terms with, and remain at the cutting edge of human resources, and thereby manage the successful transition (both in terms of business policy and public policy) from the traditional notion of HR to what economists term 'human capital management'. Vineet's book is an invaluable contribution to that effort. I would also like to invite readers to watch Vineet discuss the significance of this book with Sara Green of HBS publishing in a video that is available on the internet. It must also be mentioned that Vineet was one of the few Indian CEOs to have been invited by Harvard Business School Press to write up the results of his forays in organizational change and development. This lucid and insightful book is a result of that endeavor.

The higher our position the more modestly we should behave

- Cicero

You don't manage people; you manage things. You lead people

- Admiral Grace Hooper

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