MEETING THE CHALLENGE OF A BORDERLESS ECONOMY NEEDED A STRATEGIC SHIFT?

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ABSTRACT

The formation of WTO six years ago is likely to have not only major impact on the economic activities of India, but may have much wider ramifications for the Indian society. The basic objective of the WTO is a creating a border less economy, which means allowing free access to global players in various economic activities: such as reduction in tariff and other protectionist measures (including modification in government policies and various Acts as and where required). The WTO shall also lay emphasis in enforcement of agreements in a timely manner. The agenda is likely to widen in future covering other issues like environment and labour etc. It requires a major, paradigm shift in India's approach in handling development policies as it call for meeting an open challenge of global players in home ground. Is India ready to face the challenge? The successive governments in India have been taking various measures since the enunciation of the liberalisation and globalisation policies by Narasimha Rao. However, the results indicate that reforms are not fetching result that can instill confidence that Indian is emerging to become a global player. Could the reforms also lead India to become a global market instead? Are there certain critical tasks and not attended to meet the challenge? These are some issues that this paper attempts to address

The paper is divided into four sections. The first section traces the development and trends in the balance of trade and the balance of payment of India since economic reforms initiated a decade ago to integrate India with global economy. The observation reveals that the achievements fall short of expectations in terms of balance of trade and balance of payment, an issue of immense concern. The second section points out why the present approach of reforms to liberalise Indian economy more and more alone may not enough. A paradigm shift is required to lay emphasis on the basics that have remained unattended. It then highlights that lack of attention paid to new product development activity in the development policy may prove to be a key vulnerability for India in the new economic era of a borderless economy. The third section examines the nature and demands of New Product Development activities and analyses the factors responsible for lack of it in India. Finally it draws attention of the industry, the government and the academics towards specific actions to change the gear for meeting the challenge of a borderless economy before it is too late.

2.0 *MEETING THE CHALLENGE OF A BODRLESS ECONOMY: NEEDED A STRATEGIC SHIFT?*

2.1 Introduction

In the year 1990-91, due to severe foreign exchange crisis (1) India under the advice of IMF and World Bank India undertook a series of economic reforms to make Indian industry more competitive, globally. The spate of reforms is still underway. The two main planks, which became the buzz words, were liberalisation and globalisation. It was expected that with the economic reform, the country's export/import imbalance would be corrected, the country's balance of payment position would improve and the country will have sufficient balance of foreign exchange to meet the growing requirements of Indian economy.

An analysis of the efficacy of the reforms in bringing the desired effect will be useful to appreciate the implications and impact of WTO for India and help in development of appropriate coping strategies.

2.2 Patterns of India's Foreign Trade

2.2.1 Overall Patterns in Exports & Imports

A look at the relevant data indicates that the reforms did have some desired effect. The country's ***foreign exchange reserves have improved impressively*** (see table 1) over the nine year period (2). ***However, the import /export performance has not been as satisfactory*** (3). For a brief period from 1991-92 to 1994-95 it improved, touching a

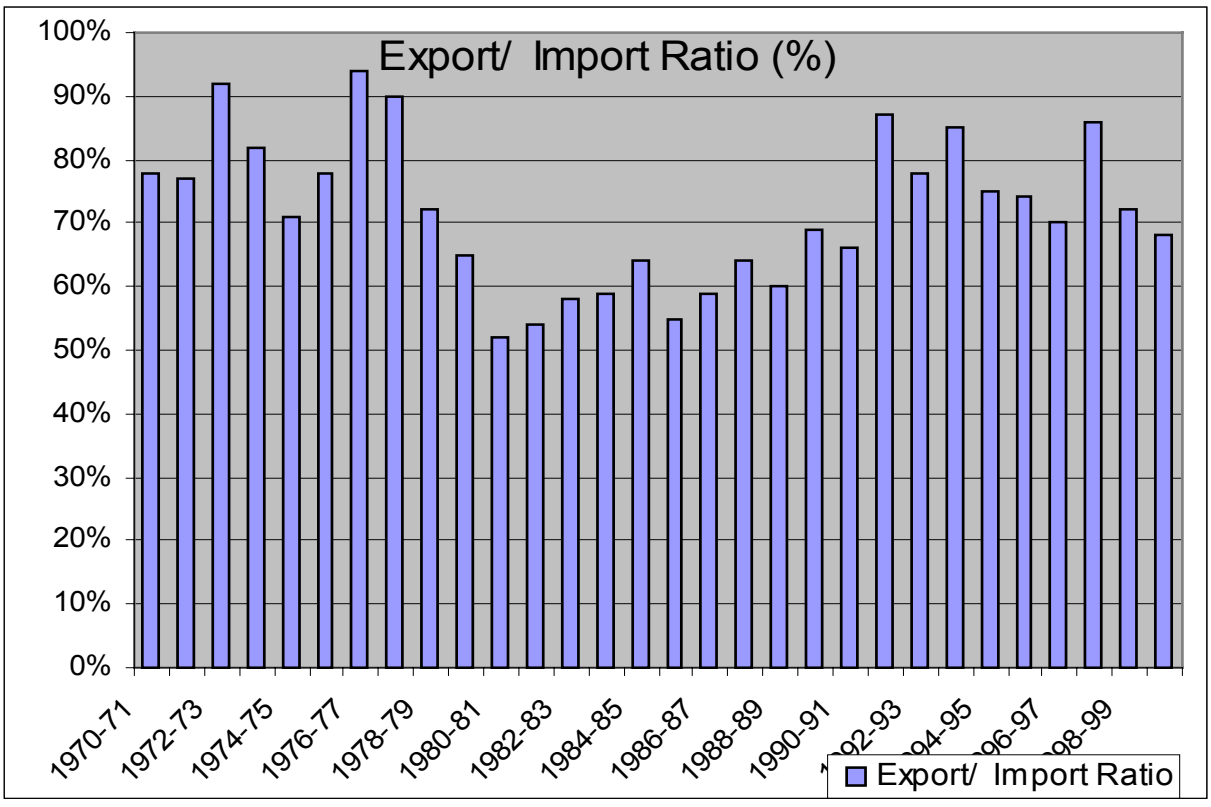
Table 1
India' Foreign Exchange Position over a period of 10 years (1990-91 to 1999-2000)

As at the end of March	Gold	SDR	Foreign Currency Assets	Total (2+3+4)	Reserve Position in the Fund	(US $ m) outstanding use of IMF	
						Credit	(Net)
1991	3496	102	2236	5834			
1992	3499	90	5631	9220			
1993	3380	18	6434	9832	296	4799(Net)	(3433)
1994	4078	108	15068	19254	299	5040	(3568)
1995	4370	7	20809	25186	331	4300	(2755)
1996	4561	82	17044	21687	310	2374	(1625)
1997	4054	2	22367	26423	291	1313	(947)
1998	3391	1	25975	29367	283	664	(497)
1999	2960	8	29522	32490	663	287	(212)
2000	2974	4	35058	38036	658	26	(19)
June 2000	2948	8	33774	36730	653	0	(0)

peak of 95% in 1993-94. But the export/import ratio started declining steadily thereafter (see table 2) going down to 69% in 1999-2000, a level of 1984-85, when there were serious restrictions on imports and less incentives for exports compared to current era of liberalised economy. This indicates that the reforms have not fetched the desired results in the export/ import front.

Table 2
India' Export- Import Performance during 1971-2000

Year	Export	Import	Net	Export/ Import Ratio (%)	Year	Export	Import	Net	Export/ Import Ratio (%)
1970-71	1890	2435	-545	78%	1985-86	9461	17294	-7833	55%
1971-72	2122	2759	-637	77%	1986-87	10413	17729	-7316	59%
1972-73	2579	2796	-217	92%	1987-88	12644	19812	-7168	64%
1973-74	2997	3646	-649	82%	1988-89	14257	23618	-9361	60%
1974-75	4006	5620	-1614	71%	1989-90	16955	24411	-7456	69%
1975-76	4830	6197	-1367	78%	1990-91	18477	27915	-9438	66%
1976-77	5750	6097	-347	94%	1991-92	18266	21064	-2798	87%
1977-78	6354	7051	-697	90%	1992-93	18869	24316	-5447	78%
1978-79	6817	9512	-2695	72%	1993-94	22683	26739	-4056	85%
1979-80	7817	12076	-4259	65%	1994-95	26855	35904	-9049	75%
1980-81	8445	16314	-7869	52%	1995-96	32311	43670	-11359	74%
1981-82	8697	15970	-7273	54%	1996-97	34133	48948	-14815	70%
1982-83	9490	16468	-6978	58%	1997-98	35680	41535	-5855	86%
1983-84	9861	16575	-6714	59%	1998-99	34298	47544	-13246	72%
1984-85	10061	15715	-5654	64%	1999-2000	37542	55383	-17841	68%



2.2.2 Significant items of Export and Inports

A look at the data on imports shows a disturbing trend. Table 3 shows the details of key items of imports having a share of 5% in total imports and/ or the items which have registered high growth rates (4).

Table 3
Significant Import Items

(U.S. $ millions)

	93-94	94-95	95-96	96-97	97-98	98-99	99-2000
Total Imports	23305	38662	36730	39165	41535	42379	47270
Food & Related Items	425 (1.8%)	1264 (3.3)	1103 (3%)	1372 (3.7)	1678 (4.5)	2757 (6.5)	2428 (5.1)
* Fruits & Nuts	69	100	99	129	155	159	84
* Vegetable Oils	53	199	677	825	745	1803	1845
Export Related Items	4397 (18.9)	4318 (11.2)	5265 (14.3)	6143 (15.7)	6922 (16.7)	7129 (16.8)	8946 (18.9)
* Inorganic Chem.	487	755	863	909	1198	1278	1306
* Organic Chem.	386	1382	1706	1754	1762	1404	1576
* Pearls, Prec. Stones	2641	1630	2109	2927	3346	3759	5383
Capital Goods	5541 (13.8)	6654 (17.2)	8861 (24.1)	8657 (22.1)	7968 (19.2)	8117 (19.1)	5800 (12.3)
* Non-electrical m/c	1880	2729	3930	3647	3626	3044	2764
**** Raw Material & intermediaries***	8343	10551	13126	15445	15925	15776	19522
* Gold & Silver	-	712 (1.8)	868 (2.4)	992 (2.5)	3173 (7.6)	5070 (12.0)	4416 (9.3)
• Petroleum Crude & Prod	5747 (24.7)	5929 (15.3)	7537 (20.5)	10045 (25.6)	8174 (19.6)	6397 (15.1)	10495 (22.2)
Manufactured Goods	3743 (16.1)	5012 (13.0)	7160 (9.5)	6194 (15.8)	7296 (17.6)	6749 (15.9)	7203 (15.2)
* Electronic Goods	911 (3.9)	1228 (3.1)	1755 (4.2)	1425 (3.6)	2090 (5)	2223 (5.2)	2658 (5.6)
* Computer Software	18	44	121	85	170	163	16
* Fertilizers Mfd.	631	764	1384	686	845	811	1080
* Paper Board & Mfrs.	74	91	171	190	221	210	208
* Wood & Wood Prod.	143	224	250	270	415	374	447
Miscellaneous	856	864	1214	1354	1746	1851	3370

It will be observed from table 3 that there is an ***increasing trend in the import of manufactured goods, while the share of capital goods has been declining,*** indicating that instead of enhancing the manufacturing infrastructure base in the country, precious foreign exchange is being spent on import of manufactured goods. There is a significant rise in imports of electronics goods. There is also an ***increasing trend in imports of manufactured fertilizer, when many domestic fertilizer companies are turning sick***. Same is the case with the paper board and manufactures. ***There has been an alarming increase in import of the wood and wood products, and the import of gold and silver***. How much of these are essential for the country at the cost of aggravating country's adverse balance of payment conditions, is an important issue that requires serious consideration. There is also an alarming increase in the import of vegetable oil, the reasons for which need thorough analysis, as the item being a consumer good, which is a necessity and daily use item, the demand will continue to increase at rapid pace. Last,

but not the least, there is a sharp rise in the import of petroleum crude and products. This is more concerning a development, as the rise in this item is more on account of increased consumption, because the international price of crude has remained very stable during this period. This is one item whose price rise is quite unexpected at any point of time, and it has potential throw the entire economy out of gear and create a foreign exchange crisis any moment.

Table 4
Performance of Significant Export Items

Agri. & Allied Prod.	4023	4227	6120	6869	6634	6033	5504
* Marine Products	812	1129	1012	1130	1208	1038	1182
* Ores & Mineral	887	989	1197	1173	1062	893	908
Manufactured Goods	16637	20410	23782	24634	26579	25786	29510
* Leather & Leather goods	1298	1611	1755	1605	1659	1660	1540
* Chemi & Related Products	1576	2081	2487	2842	3335	3057	3375
- Drug & Phar	640	800	1021	1224	1460	1487	1532
- Inorg./Org./Agro	231	320	497	555	591	531	654
* Engg. Goods	3019	3480	4364	4929	5275	4433	4915
- Computer Software	23	55	81	71	60	85	8
- M/C & Ins.	638	727	831	1058	1197	1155	1158
- Mfr. Of Metals	662	706	827	914	1024	1039	1244
* Textiles (Excl. RMG)	2871	3811	4341	4868	5163	4481	5030
- Cotton Yarn/Fab	1535	2234	2580	3124	3268	2771	3142
- Man Mode Fab	425	614	752	703	805	700	821
* Readymade garments	2583	3283	3681	3756	3881	4364	4807
- RMG of Cotton	1966	2503	2831	2943	2878	3147	3525
-RMG of Manmade fibre	389	457	520	530	691	923	696
Other Manufacture Good	5290	6144	7154	6632	7266	7791	9834
* Gems & Jewelry	3991	4501	5283	4757	5352	5928	7645
* Handicraft (excluding carpets)	318	386	435	476	526	633	671
* Plastic & Petroleum products.	336	478	586	539	315	472	589
Other Commodities	268	294	308	340	420	410	1692

A look at the export items (see table 4) shows that all but few of the major items (>US $ 100 million) are now either in declining and stagnating sate since last 4-5 years (5). These include Basmati and Non-Basmati Rice, Coffee, Tea, Meat & preparations, Oil meals, Spices, Unmanufactured tobacco, Iron and other ores as well as processed minerals in the **Agriculture & Allied products** category. Among the **Manufactured Goods**, Leather & leather manufactures are in similar state. In the **Engineering Goods** category**, the Electronics goods, Iron and steel bars/ rods, Machinery & instruments, Primary & Semifinished iron and steel, and Transport equipment are**

facing same position. In the Textile (Non RMG) category, Carpets (both handmade and millmade) and Jute manufactures are either declining or stagnating. Same is the performance of **Glass/ ceramics, Paper & Wood products, Plastics & Linoleum** products, **Rubber** Manufactured Products and the **Petroleum** Crude and products in the category of **Other Manufactured Goods**.

2.2.3 Net Exports

The areas in which exports have been growing are **Drugs & Pharmaceuticals & Inorganic/organic/Agro-chemical in Chemical & Allied Products** category, Fabric (both cotton & manmade) and all types of items in the **Readymade Garments** category. The **Gems & Jewellary** and **Handicrafts** (exclusive carpets) are also growing in the other manufactured item category. It may also be noted among textile category (both millmade & manmade) the **growth is higher in cotton** than **manmade** fibre, be it Readymade garments and non-Readymade garments category.

A significant factor to be noted is the import of export related items. ***There are industries in which the exports are growing, but they are seemingly not a major exchange earner (see table-5), as the difference between the export and the import values in these items is not increasing at a high pace*** (6).

Table 5
Import of Export Related items

Imports	93-94	94-95	95-96	96-97	97-98	98-99	99-2000
Inorganic. Chemical	1373 (487)	2137 (755)	2569 (863)	2662 (908)	2960 (1198)	2683 (1278)	2882 (1306)
Org. Chemical	886	1382	1706	1754	1762	1405	1576
Pearls. Precisloing	2641	1630	2109	2927	3346	3759	5382
Exports							
Gems & Jewelry	3991	4501	5283	4757	5352	5928	7645
Chemical & Rel. Prod.	1576	2081	2487	2842	3335	3057	3379
Export Net of Imports							
Gems & Jewelry	1320	2871	3174	1830	2006	2169	2263
Chemicals & Allied Prod.	203	-56	-82	180	375	374	497
Total	**22213**	**26336**	**31842**	**33498**	**35049**	**33211**	**37641**

Source: CMIE Report on Foreign Trade & Balance of Payment, 2000.

Recapitulating, it will noted from the table 2 that adverse trade balance is of increasing order. The trade imbalance of US$ (-) 9438 million in 1990-91 had reduced to (-) 2798 in 1991-92 and (-4056) in 1993-94 due to immediate impact of change in the economic policy. However, it reverted back to the same level in 1995-96 and doubled to US $ (-) 17841 in the next four years. ***The liberalisation and globalisation policies enunciated by the government are thus, not proving to be right so far as the correction in import/ export imbalance is concerned. Indeed, they are fetching almost the opposite results***.

Table 6
India's Balance of Patment (Key indiators) (U.S. $ millions)

1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-200
	-9438		-4268	-4056	-9049	-11359	-14815	-16277	-13246	-17098
	-242		842	2898	5680	5460	10321	9804	9208	12935
	980		1129	535	602	-186	851	1143	2165	3856
	1064		1713	1725	1547	1546	2020	1477	1250	897
	110		-503	-332	-167	-158	-441	-726	-755	-665
			-81							
	2069		2773	5265	8093	8506	12367	11830	10280	12256
	-3752		-3423	-3270	-3431	-3205	-3307	-3520	-3569	-3695
	9680		-3526	-1158	-3369	-5899	-4494	-6473	-4038	-4163
	97		315	586	1343	2133	2716	3202	2480	2167
	3		242	3649	3579	2661	3312	1828	-68	3024
	2210		1856	1901	1528	883	1109	899	820	901
	2248		-358	607	1030	1275	2848	3999	4362	313
	1075			-769	393	49	838	-96	-748	377
	-364		1073	-844	-962	-384	-870	-2195	-1397	790
	-269		-144	1297	164	218	-255	-190	-11	-26
	1537		2001	1205	172	1103	3350	1125	1742	2140
	-222		896	605	292	-175	4	367	1146	-177
	-1193		-878	-1053	-983	-952	-727	-767	-802	-711
	1931		-10	1638	1977	-2537	-254	3800	1157	1508
	7056		3906	8895	8502	4078	11881	11924	8565	10242
	-2492		-560	8537	5757	-1221	6793	4511	4222	6402
	1214		1288	187	-1143	-1715	-975	-618	-393	-260
	1278		-728	-8724	-4644	2936	-5818	-3593	-3829	-6142
75857	83801	85285	90023	92695	99000	93730	93470	94320	97231	98435
68356	75257	78215	83683	89068	94739	88696	86744	89274	93902	

Worse still, they are setting unexpected and unhealthy trends, in that the policies are not leading to building of better manufacturing base (imports of capital goods are reducing and that of manufactured goods is increasing). Nor these are able to check the import of less desirable items. ***Opening of the Indian economy to global competition might have brought superior products to the country, but has not made Indian industry more competitive in general than what it was earlier, before the economic reforms***. This is borne out by the fact that the overall profitability of Indian Corporate sector is steadily declining since 1996-97 (7), although it has not resulted in visible increase in number of sickness cases, since their net worth is not eroded so far.

2.2.4 Balance of Trade and Balance of Payment

The adverse trade balance would, in normal course would have lead to serious deficits in balance of payment and created a foreign exchange crisis. This fortunately has not happened. ***The foreign exchange reserves have been steadily increasing (table 2), thanks to an increase in invisibles (see table 6) in the current account*** (8)

It may, however, be noted here the ***increase in the invisibles are not on account of items that reflect India's increasing competitive prowess***. Travel income is on the decline since 1996-97. Same is the case of transportation income, which is negative and increasing since the opening of Indian economy. This means that the Indian carriers are losing out steadily to the international ones, which is not a desirable trend either. The country is, thus***, losing out badly in terms of both merchandise trade as well as service.*** Thus taken together (the merchandise trade and service), the net effect is adverse (see table 7) than what would appear from the analysis of *total current account.* This is partially mitigated by miscellaneous receipts, largely by Private Transfers as shown in the table 8.

Table 7
Net Merchandise Trade & Services

Item	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00
a)Merch-andise	-9438	-4056	-9049	-11359	-14815	-11359	-14815	16277	-13246	-17098
b)Travel	1064	1725	1547	1546	2020	1546	2020	1477	1250	897
Transport	- 110	-332	- 167	- 158	441	-158	441	-726	-755	-665
Total of Merchandise an Service	-8484			-2663	-7669	-9971	-13236	-15526	-12722	-16866

It may be seen from the table 8 that the ***Private Transfers are reaching almost a plateau and one can not expect a substantial rise in it in the future. On the other hand, the imports are rising at a breakneck speed (see table 2), export/import ratio is declining steadily and the trade and service deficit increasing alarmingly.*** The country may therefore, face a crisis as the ***country's inherent strength of earning is declining rapidly***. It is buttressed by the fact that the capital imports are reducing (i.e., country's infrastructure building process is slowing down). The direct investment is on the decrease, but the portfolio investment is increasing. In other words, while the infrastructure building is slowing down, the external investment is going more in acquisitions and trading on development equities of domestic business that are established in the country. In a nutshell, the flow of funds is not helping the country's infrastructure base to let is emerge as a global player. The trends indicate ***that if necessary corrective steps are not taken India may become only a global market*** with increasing external control. Worse still, the precious foreign exchange for which all the barriers are being shattered and red carpet welcome is being extended to every external agency, is not been properly and timely deployed.

Table 8
Private Transfers Supporting the Mechandise Deficit in Balance of Trade

Item	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99	99-00
Total of Merchandise an Service	-8484			-2663	-7669	-9971	-13236	-15526	-12722	-16866
Private Transfer	2069			5265	8093	8506 (85%)	12367 (93%)	11830 (76%)	10280 (80%)	12256 (74%)
Net	-6415			2602	424	-1041	-869	-3696	-2422	-4610

It may also be noted that while ***in 1990-91, the foreign exchange reserves had reduced to perilous level to support only about 15 days imports*** (9)***, it has now peaked to support almost 9.5 months imports. One has to ensure that the level does not become too high either***, as arranging foreign exchange through loans and deposits involve cost, which can lead to catastrophe, if the same is not used timely***. It must also be realised that the international trade can not be sustained by funding increasing import/ export difference through loans/ external deposits and private inward remittance. It would be seen from table 6 that the India's External Debt has increased 2.6 times during 1990-91 to 1999-2000 in rupee terms and 1.3times in dollar terms. Moreover, these are highly volatile items and the national economy and the international***

balance of payment can not be banked upon private transfers alone for sustained economic development of a country. It may, however be noted here that the private transfers include income received from Indian software and other professionals posted abroad on assignments. The exact amount of income generated on this account is not readily available. But, even if that forms a substantial part, these items continue to be vulnerable on account of their tapering off and their susceptibility to restrictions imposed by foreign governments on Indians going abroad. The merchandise exports and to a lesser extent income from services is less volatile in nature. These require enormous slogging, which does not be easily varnish as the flight of money. Further more, the foreign exchange earned out of net of export and import is real, and if there is a surplus in the Forex it is a real "Forex Reserve". The foreign exchange balance defined as reserve is not the real "reserve' as is generally understood in the accounting parlance. The vulnerability of it can be seen from table 9 below (10).

Table 9
Foreign Exchange Reserves and Liabilities (U.S.$ Million)

	1994	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Total reserves	19254	25186	21687	26423	29367	32490	38036
Foreign currency reserves	15068	20809	17044	22367	25975	29522	35058
Gold	4078	4370	4561	4054	3391	2960	2974
SDRs.	108	7	82	2	1	8	4
Vulnerable liabilities	23133	26447	26623	31208	32769	32522	36056
FII investments (outstanding)	1638	3166	5202	7609	9284	8898	11237
NRI Deposits	12665	12383	11011	11012	11913	12344	13365
Short-term debt	3627	4269	5034	6726	5046	4387	4657
Trade credit	5203	6629	5376	5861	6526	6893	6797
Balances under NRI deposit schemes	16218	17156	17433	20389	20367	21301	23098
FCNR(A)	9300	1751	4255	2306	1		
FCNR(B)	1108	3063	5720	7496	8467	8323	9069
NR(E)RA	3523	4556	3916	4983	5637	6220	6992
NR(NR)RD	1754	2480	3542	5604	6262	6758	7037
FC(B&O)D	533						

2.2.5 WTO and the Challenges of a Borderless Economy

The liberalisation and globalisation policies effected have eased India's balance of payment difficulties and improved the Forex reserve position,

even though it may only be a temporary respite from the threat of default in meeting the international trade an debt obligations. However, it has not increased or strengthened the country's international competitiveness as reflected in increasing trade imbalances. India is gradually moving towards becoming more of a ***global market, which is reflected by increasing inflow of all kinds of consumers goods and inability of domestic players to combat competitions from the Multinationals, their erstwhile technology suppliers), rather*** than emerging as a global player. This is further elaborated in the following pages. If a small pressure of adverse balance of trade has led to a crisis of the order that the country had to reverse some of fundamental policies; like opening the Indian economy, making several changes in the industrial regulation policies, albeit without success in correcting the balance of trade; what would be the scenario when the WTO provisions; including the reduction in ***Tariff Barriers***, treatment of the ***Most Favoured Nation*** (MFN), ***National Treatment*** (NT), ***Removal of Quantitative Restrictions*** (QR's), ***Trade Related Intellectual Property Rights,*** etc. on the one hand, and pressure ***for quick removal of all legislative and other barriers*** that come in the way of these provisions. start applying to the county in full bite in the very near future (11)? To appreciate the implications it is necessary to recall the thrust of the WTO provisions.

The WTO is sequel of a decade of efforts by several developed countries, to ***have free access to the world markets, especially in the developing and the under developed countries***. Combining the laissez faire philosophy of Adam Smith (12) and the theory of comparative advantage propounded by Ricardo (13), Heckscher (14), Ohlon (15) and others, they ***plead that the governments of different countries should not create the protective tariff and legal barriers for the business organisations of other countries. Any such barrier, they plead and maintain, would not be in the interest of such countries***, as such barriers kill competition, which in turn deprives the consumers of their right to have the best possible products at the lowest prices. Initially the dialogues were confined between few developed countries. Later on some other developing and underdeveloped countries followed suit, not necessarily willfully. Subsequently, as the number of countries showing their willingness to abide by the provisions of the proposed agreements, the formal body i.e., WTO came into being (in 1995) that also assumed the role of agreement enforcing body, which could effectively select and isolate the economically weak dissenting countries (16). It is for these reasons that the matter becomes a subject of critical importance and concern for developing countries like India.

2.3 New Product Development and International Trade: Need for a Strategic Shift

The increase in the international competitiveness requires somewhat different approach than the one pursued so far. Till a decade back Indian firms were under no pressure to develop international competitiveness, as they could remain profitable by feeding a very large domestic market by products manufactured through import of technology in a protected economy. For historical reasons, in India, the base for manufacturing (using economies of scale) after the independence was created by and large through import of technology by firms in all the sectors (17). The public sector firms increased in number, initially due to inability of private sector to invest in the core sector and later on due to political philosophy of growth through planned economy with increasing role of public sector. Efficiency was never emphasised or competitiveness in public sector. The private sector too, was never really challenged for efficiency of international level, because hardly any firm had core competence of creating new product on its own. ***Neither there was a direct challenge from any international firm who had ability to create,*** as they were deterred through FERA, MRTP, licensing etc. The firms in different industries scored over each other only through their ability to manage licenses, selecting suitable foreign collaborators for technology import, set up the project fast and develop suitable distribution net work within the country. They could not design the product or service, develop technology for large- scale production, or understand the foreign markets to emerge as global players. Indeed, all but every few did not even dream to be a truly global giant, contented with feeding and playing in the domestic market (18).

The government in the last one decade has introduced many reforms**, removed licensing** requirement from most sectors, deregulated and **de-reserved** most sectors, **removed** the bottle necks of **MRTP** for expansion by large firms, ***reduced import and export barriers and disincentives from the capital market*** etc. ***But these efforts have not fetched desired results in terms of correcting balance of trade after the formation of WTO*** (see table 2)**.** There is, thus, something basically remained unattended, which must be understood and appropriate strategies evolved to correct it. It may be mentioned here that the issue of facing the challenge posed by formation of WTO, the enforcement of various provisions mentioned above and the issue of intellectual property rights etc. are primarily the issues of international competitiveness. They can not be handled by the political processes alone. Neither can they be handled by touching the emotional chord through SWADESHI slogans.

It is more of an economic issue and has to be addressed accordingly. The emotional chords may be touched and the political processes may be used to garner necessary support and commitment of people at various levels to effectively implement the combating strategy. The solutions, however, have to be found by using rational models of decision making process. How to develop and strengthen India' global competitiveness is the key economic issue that needs to be addressed squarely.

It must also be noted here that though the issue on the face of it is an economic one, the concept of borderless economy being pleaded by the proponents of WTO, is not compatible with increasing emphasis and concern for creating and maintaining political and religious boundaries in the world. The concern for sovereignty is not a matter of choice to be ignored in any discussion of a borderless economy. There will be always resistance to WTO unless one is convinced that his country would and can strike an equilibrium in balance of trade, without adverse and exploitative trade terms.

It may not be out of way to mention here that ***the Export/ Import ratio, signifying the favourable balance of trade is observed in all developed countries*** (19), ***except*** United States of America. ***It is adverse in most of the developing and underdeveloped countries, with the exception of China*** and some of others like Indonesia. It may also be noted that a ***even favourable balance of trade may not be good in all the cases***. ***It has to be qualified with the nature and terms of trade***. ***An exploited country may also have favourable balance of trade*** (20)**,** if it is being pushed to export despite adverse patterns and/ or terms of trade, to meet the demands of balance of payment requirements, ***or if it is becoming increasingly more of a subcontractor***, which is a situation of high vulnerability in the hands of main producers. On the other hand a situation of ***temporary adverse balance of trade may not be alarming*** for a country, if has ***outsourced a large low value addition items***. This is especially so***, if it relates to luxury and comfort items*** of affluence, which can be curtailed in the situation of a national economic crisis.

Does India need to worry about the trends and new developments in the international trade agreements? Perhaps yes, perhaps not. It depends upon how well India is able to correct its trade imbalance, taking export/ import ratio at 100% level or more. ***A deficit once a while is inevitable and can be funded through borrowings, private transfers etc. as a short term measure. But a sustained and increasing deficit can not be maintained for long.*** Neither these measures of funding deficits can be

used as a long-term strategy, without getting country's sovereignty affected.

2.3.1 WTO and India's Value Chain

The improvement in international competitiveness of India, thus, requires a critical look at the value chain (21) of its products and services. The value chain comprises several components namely conceptualising and designing a new product, developing technology for its manufacture at large scale, procuring raw material and components resources for its regular manufacture, developing customer awareness and interest in the product, and finally delivering the product to the customer for his consumption and use. At the subsequent stage, it also requires sustained efforts for improving the product features, its cost and delivery time etc. as the competitive pressures build up. It also requires creating new products, which serve new or changing needs of the society to retain leadership position by increase of the length, breadth and the depth of product line to increase customer base and efficiency.

The competitiveness of a firm, industry and country depends ***upon how well the value chain of the products and service is managed*** vis-a-vis the competitors (22). The competition can be met by improving the value chain of existing products, by introducing and switching over to different products, or both. It will depend upon the firm, industry or country's ability to do so.

The ability of a firm, industry or country to compete either of the above ways depends upon their tangible and intangible assets base and the capability base (23). The asset base comprises the factor of production which are available at the disposal of a firm for providing it customers with goods and services like plant and machinery, funds, brand name and so on. Capabilities are skills the firm needs to take full advantage of its assets. Without skills, assets are of no or little value. At one point of time, General Motors had the most advanced technologies, large workforce, most extensive distribution network and strongest brand. But Japanese automobile industry attacked it by lowering cost, improving quality and speeding up the product development process.

What is international competition of a firm and a country will thus depend up its resource and capability. The ***competitive value of the resource base*** can be determined by examining the following factors (24):-

1. Scarcity of the resource base
2. Imitability

    a) Imitability of Design
    b) Physical uniqueness of business
    c) Path difficulty in imitation
    d) Casual ambiguity in understanding how a firm got advantage
    e) Scale deterrence

3. How fast the advantage is depreciated
4. Substitutability of the products by others
5. Superiority i.e, whose resources are better

2.3.2 New Product Development: The Challenge of Managing Embryonic Stage of Product Life Cycle

New product development, competitive value of resource base and capability and the country's balance of trade equilibrium ***are closely related issues***, although this relationship is not easily realised. To appreciate the linkage, one has to understand the nature and process of new product development.

New product development activities have been variously defined (25). They can be classified into the firm, market and product oriented definitions. When a product is new to the firm, it is considered a new product. This definition helps in examining the impact of a new product on the firm. However, it ignores whether the product is new to the market place or consumers. It does not therefore, capture fully the task of introduction of new product to meet the competition. The market oriented approach judges the newness of the product in terms of how much exposure consumers have to the new product. This definition helps in examining the task of new product introduction, but does not capture the difficulty or pains in development of a new product and developing technology for its large scale production to reap the benefits from the economies of scale.

The product oriented approach focuses on the features inherent in the product itself an on the effects these features are likely to have on the consumers' established usage patterns. Product oriented approach may be further classified into three different categories depending upon the extent to which it is likely to disrupt the established patterns of resource and

capability bases of the firm and the behaviour patterns of the consumers and other stakeholders (26).

a) ***The continuous or "tinkering" innovation causes the least disruptions to the established patterns***. It involves the introduction of a modified product, rather than a totally new or radically different product. The examples of "tinkering" innovation are improvement in packaging of products, changing the shapes and sizes or other product features, (like coca cola, surf, parachute oil, shampoos etc.). They are undertaken to create a perceptual difference in the minds of consumer or to claim the superiority of the products by a firm over the other.

b) ***Dynamically continuous innovation is somewhat more disruptive, but does not change the existing patterns of behaviour and the resource \ capability bases of the firm***. It may create a new product or modification of an existing product, but does so moving within the same paradigm. The major innovation is departing a lot from the existing product like electric bulb to tube lights. They happen when the product is put to an alternative use or there is major distinctive differentiating factor introduced to the satisfaction of an established need. If the example of improving the quality of rose is taken, tinkering will measure improving the size and longevity of rose in a plant. On the other hand if by process of budding a new colour like white rose is produced it will come in the second category. In the case of computer it is reflected in terms of generation change.

c) ***A discontinuous innovation*** requires the consumers, the suppliers and other stakeholders to adopt new behaviour patterns ***and radically alters the resource and capability bases of the firm***. Continuing from the previous example, the radical departure from Rose is a development of a new flower with different fragrance, shape, and size such as jasmine.

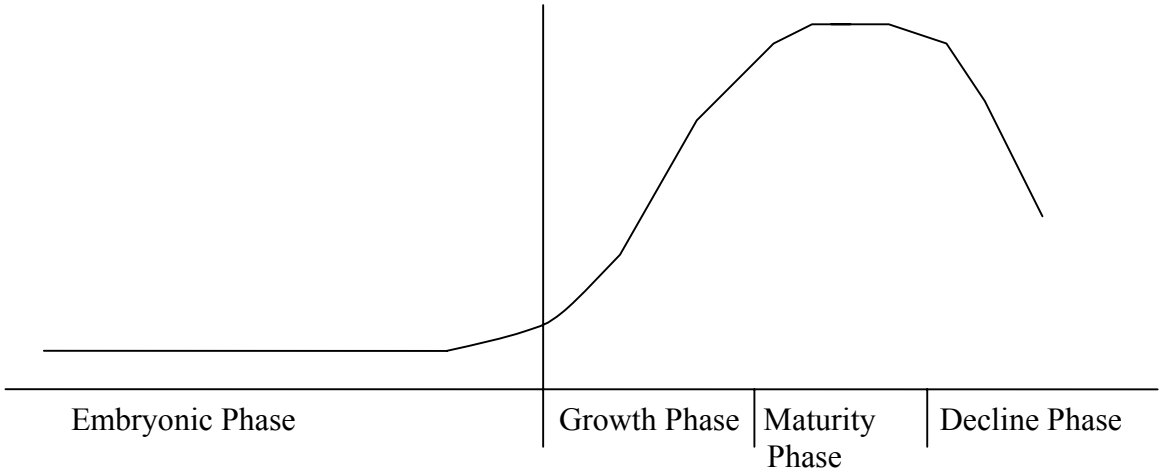
Developing a radically different product is like having Makke ki Roti & Sarson ka saag rather than improving Dosa & Sambhar. Improving Idli to have a variety is tinkering innovation, development of Dosa or Uttapam is a major innovation and Makke ki roti is radical departure. In the field of computers, the successive versions of word processing are tinkering innovations, development of image processing may be called major innovation and the advancement from semiconductor to chip technology, development of personal computers or internet are examples

of radical departure. In the field of transportation improving the exterior is tinkering innovation, making three wheelers is for passenger transport is a major departure and making electric three- wheeler is a radical departure.

It may be worthwhile to discuss in brief the basics of development of a radically different new product. It is typically marked with the application of knowledge to fulfil some unmet latent or unexpressed need of the society. While developing such a new product one sees potential use of an idea or concept, a scientific principle, assortment of available supplies to design a product that meets some need of the society. The idea undergoes a process of refinement until it firms up in terms of a mental picture of product/ service. It takes few more rounds of iterations between the mental design and available supplies (including modifications in supplier characteristics), before the idea takes a physical shape. It can then be shown to potential users and a refined product is developed, which is acceptable to a significant number of users. Economic viability of new product now requires that efficient production methods are developed to manufacture it at large scale, thus reducing the cost to a level which is within the reach of such a number of users that is good enough to provide necessary revenue to cover all the costs. ***The product is now ready in terms of the design, manufacturing equipment, raw material, components and supplies etc. for production on a large-scale***, ***the technology has arrived***. The customer accepted and commercially viable product ***then enters the growth phase*** of the product life cycle (27), when the ***embryonic stage of the product life cycle ends.***

The embryonic stage is typically several years long, and a large number of man days are used up before the product enters the growth phase. The new product development activity takes into account the local natural endowments, the state of component suppliers etc. as essential ingredients to various design and other decisions related to output, before mass production infrastructure called "technology" is created. *It is worth noting here that the manufacturer who has designed and developed the new product technology has complete control over all the factors of production*, be it the raw material or component supply, the technique of production, deletion, addition or modification of the design features etc. All of this goes in meeting the requirements of the customers; be it his satisfaction with service the product offers, the price that he can pay, the mode of delivery required or the after sale services to be provided. ***For a firm or a country that banks upon the import of technology to manufacture a proven product, all the above factors tend to be more or less given.*** The firm can't alter them easily. The investment, the cost and

the design features all get predetermined. The firm can only feed a large, starving domestic market with whatever it can manufacture. ***A firm, which has not learnt the management of embryonic stage associated with the development of radically different product, can't meet any major change in the requirements of customer, nor bring any major innovation. Nor can it meet the challenge of global competition from the creators of new products.***



The Product Life Cycle

It should be noted that while in "tinkering" and dynamically continuous innovations, one moves within same paradigm, in ***radically different new product development activity he moves to a different paradigm. These paradigm shifts are not only in physical terms like plant and machinery, but are major mental, conceptual shifts***. They provide to the firm the cutting edge, mentioned in the previous section, to achieve superiority in terms of product differentiation, cost leadership or delivery time advantage.

The purpose of giving the above details of innovation is to bring home the point that the tinkering, dynamically continuous and radical innovations have different utilities and provide different levels of competitive prowess. These also require different levels of preparation. Tinkering is necessary for a market leader to keep the product “live” and “improving” in the eyes of customers to maintain its market share or to fit it to meet the demands of new geographically different markets. Dynamic innovations may provide the firm a competitive edge in the product line. ***Radical departures, however, enable a firm to even pull the carpet below the feet of the competitors and provide competitive control over the market***. Tinkering and dynamically continuous innovations may keep the market leader ahead of others. These at times may allow even a

laggard to stay-on in a protected market. ***But these can not provide any long term competitive edge to a firm,*** which manufacturers products through import of technology, unless the firm learns backwardly, to manage products' embryonic stage, to have control over all the factors of production and come out with substantially superior products.

2.3.3 Import of Technology and New Product Development

Undertaking mass production through import of the manufacturing technology right away), provides a firm the advantages of quickly starting the production to meet the market demands and immediate gains and exploitation of domestic markets and a part of the international markets (28),

However, such an approach has the following major disadvantages:-

i) It ***uses sales concept***, product is thrust on the customer,
ii) It ***does not provide cost effective products***, as it may not incorporate the features that the customers want or may have features which customer may not use/need, because the firm can not adjust product technologies to incorporate necessary design changes,
iii) The ***design change ability is limited to minor alterations*** within the existing "overall" design, thus necessitating the import of raw material and components for a long period,
iv) It may ***not use/ help in the use of local natural endowments*** nor genuine development of vendors' skills,
v) It requires foreign exchange/ capital, thus***, limits the growth*** by availability of the same,
vi) Repeated incidence of growth through import of technology leads to development of a dependence psyche,
vii) It increases resource requirements, impedes efficient creation of physical infrastructure required by the purpose.

Although the process of new product development is an arduous, long and painful one, it fetches rich dividends in the years to come, to the organisation concerned in particular and the country in general. In concrete terms these can be listed as the following:

a) It ***develops internal strengths in the organisation***, with increasing control (depending upon the type of new product development exercise undertaken) over all the ingredients of product design and manufacture, that enables the organisation to adjust/ modify the

design features, cost, after sales service parameters to suit the customer requirements.

b) It impresses upon and helps in the ***development of the efficient production methods***, commensurate with locally available resources, which on the one hand help in making the product price attractive to the customer and reduces the capital investment requirements on the other,

c) It ***augments the organisation's ability to develop radically different products***, which is necessary for sharpening the competitive edge, both for domestic and international markets, especially the latter,

d) It is able to give efficient designs that meet the various requirements of not only few customers but the society in general, thus ***reducing the demands of painfully (and often unsuccessfully) fitting products designed*** for the other societies to meet the requirements of Indian society.

e) New product and technology development ***provides higher level of employment generation opportunities*** as a large number of man days are used up in trying to create a new product. The manufacture of product comparatively gives lesser levels of employment.

f) It helps ***development of appropriate technology*** commensurate with the natural endowment of the country. Production of items through import of technology from the developed western countries leads to manufacture by use of capital intensive technology in labour intensive manner.

g) New product development activity ***reduces the capital expenditure*** as the setting up the plant and its expansion is within the control of the technology developer.

2.3.4 India's Competitiveness in the Liberalised Era

It may not be out of place at this point to see how the situation has change in this regard since the government started initiating reforms. The opening of Indian economy since a decade ago, one had expected or assumed that the Indian companies will be more competitive through development of internal strengths to face the challenges of the global competitors, head on. Instead, the situation is just opposite. With the opening of Indian economy, the number of foreign collaborations has shot up (see table 10). The total number of foreign collaborations during the 7 year period of 1992-99 stands at 15836 almost as much as the total number of foreign collaborations (16372) that India entered into in the 40

years period between 1951-1991 (29). To cap it the ratio of pure technical and techno-financial has reverse from 70:30 to 30:70. This further buttresses the point that India is heading for becoming a global market that global player.

The fact that India is not moving towards becoming a global player, is also borne out by
the fact that although the number of Indian Joint Ventures abroad (see table 11) have increased since 1991-92 (30), the increase has been on the average to the tune of about 100 Joint Ventures per annum, in contrast of over 2000 foreign collaborations in India. Not many of them are technical ones and a good number among them are software business, not the consumer products

Table 10
India's Foreign Collaborations (1951 -1999)

Year	No.	Year	No.	Year	No.	Year	No.	Year	No.
51	44	61	602	71	242	81	404	92	1531
52	41	62	474	72	269	82	599	93	1476
53	56	63	450	73	274	83	676	94	1854
54	61	64	530	74	373	84	723	95	2337
55	84	65	351	75	285	85	986	96	2303
56	94	66	212	76	280	86	950	97	2325
57	112	67	190	77	276	87	841	98	1786
58	171	68	136	78	319	88	930	99	2224
59	380	69	143	79	276	89	616		
60	495	70	189	80	539	90	662		
						91	1037		
Total	1538		3277		3133		8424		
				Total (51-91)			16372	otal (92-99	15836

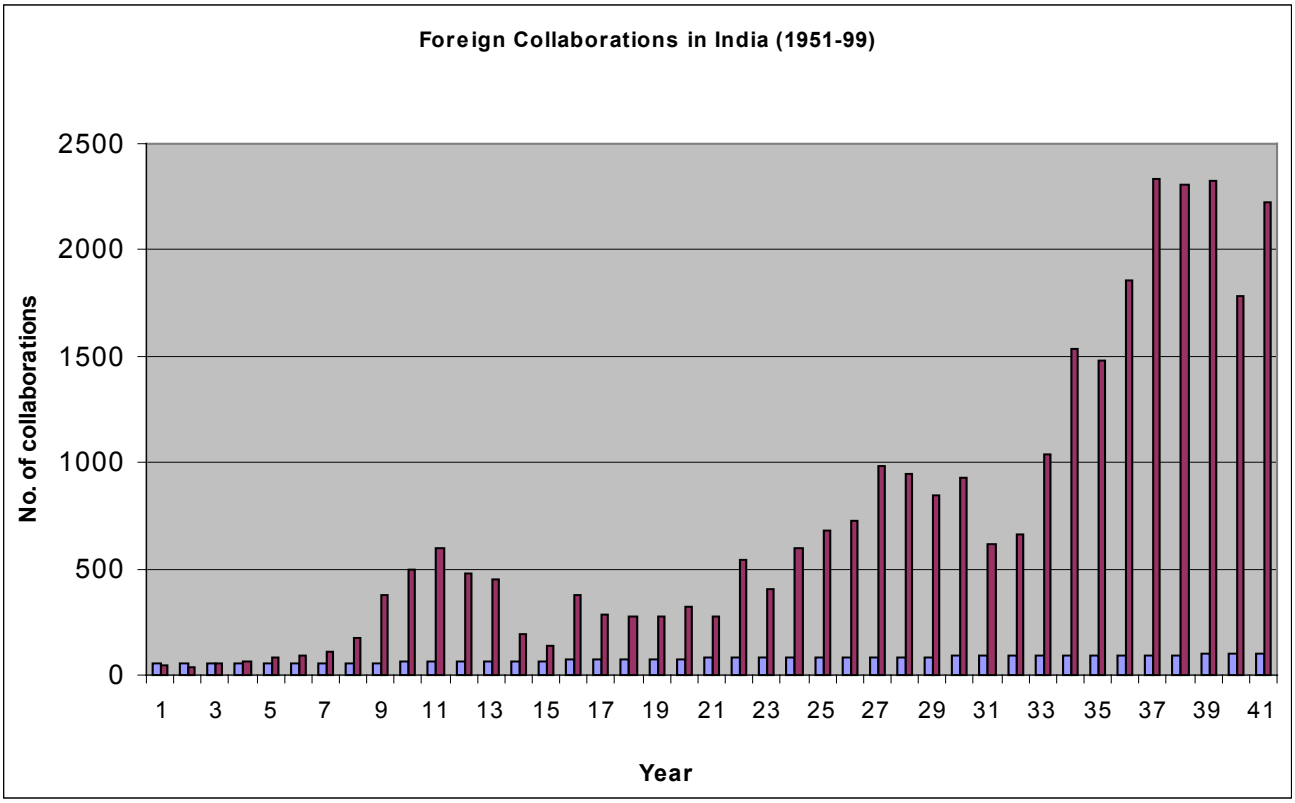


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Table 11
India's Endeavours Abroad (Joint Ventures/ Subsidiaries)

	Africa ← J.V. sub. →		America ← JV Sub. →		E. Asia → JV sub. →		Europe ← JV Sub. →		Oceana ← JV Sub →		S. Asia ← JV Sub. →		W. Asia ← JV Sub. →		Total ← JV Sub →	
Upto 1995	45	55	106	58	91	161	151	158	3	14	16	83	11	68	423	597
1996	25	20	39	16	24	18	49	26	-	1	4	21	2	14	143	116
1997	9	9	39	21	20	23	41	25	2	3	5	14	6	6	122	101
1998	5	13	57	15	19	13	31	25	1	2	7	20	3	14	123	102
Total	84	97	241	110	154	215	272	234	6	20	32	138	22	102	811	916

2.4 Moving Towards Emphasis on New Product Design and Development

It is time that due attention is paid to the activity of new product development. Indian firms have been at best engaged in tinkering innovations before the economic reforms started a decade ago. They have also increased their efforts of undertaking dynamically continuous innovation. But the efforts on radically different designs are still a far cry. The net results of these unattended tasks are seen in various products mismatches with the basic needs of society.

Does India lack the innate ability to visualise the new product design, the radically different ones. Perhaps not. History reveals that ***India has given many new products to the world, some of them are mentioned earlier. Of late, since independence, the activity has not been drawing attention in the presence of products designed elsewhere, but made available to the domestic market by manufacture through import of technology***. Further more***, it has lagged in the development of technology for large- scale commercial production.*** An analysis of the factors responsible for the lack of new product development is necessary to gear up for facing the challenge of the borderless economy.

2.4.1 Factors Responsible for Lack of New Product Design and Development in India

There are several factors that are responsible for such a lack of focus on new product development activity in India (31). These are briefly mentioned below:-

2.4.1.1 Lack of pressure/ indifference of industry to engage in NPDD

a) India ***industrialised through import of technology***. Being a protected economy, the domestic firms never faced the competitive challenge that pushed them to engage in dynamically continuous innovations or develop radically different new products.
b) There has been ***availability of imported technology*** to satisfy demands of large starving market
c) Government permitted ***repeated import of technology*** following the policy of "catching up by latching up"
d) ***Presence of large domestic market***, did not let firms feel the pressure to go for tapping foreign market that would demand NPDD to face international competition.
e) ***Companies could earn enough profit without engaging in NPDD*** due to license raj
f) The industry ***leaders had no dreams to be world leaders***, being satisfied with the large domestic market.
g) NPDD based businesses were not attractive, being costly, risky, time consuming and not fetching quick returns.

This has lead to such an over dependence of industry to manufacture through the import of technology that NPDD did not go beyond "tinkering". Even reverse engineering route was not followed. For creating new things it looked outwardly for import of technology. This worked well to meet the demands of domestic market or efficiency based competition among domestic players***. The scene is totally changed now with international players, having the ability of improving the existing products through tinkering, dynamically continuous innovation for efficient operation, along with ability to create new things, challenging the domestic players*** with provisions of MFN/TN and removal of tariff and quantitative restrictions.

2.4.1.2 Artisans' inability to assess customer needs and assess true market potential due to lack of customer orientation, expertise and information

Indians can still design and even manufacture new producer, but in an artisan or craftsman manner, following the patterns of decentralised society that had existed for centuries. The country, being under colonial rule missed the opportunity of benefiting from the industrial revolution, of centralised mass production, through its own efforts. The industrialisation came through import of increasingly complex mass production technology. ***Management of embryonic stage described above has been the weakest link in India's industrialisation.*** The R&D and innovation remained confined to the indigenisation of supplies. ***If the new product design and development activity had been taken to the mass production level, the competitive advantages and strengths would have been different and it would not have been easy for foreign companies to compete in its domestic market.***

2.4.1.3 Social psyche of "Foreign goods are good" does not allow industry and artisan to take the risk associated with NPDD

There is a craze for foreign goods in India. It is a ***strong social psyche that does not allow industry and artisans to take the risk associated with NPDD***. There is no doubt that foreign goods from developed countries have better finish and reliability of performance due to use of capital intensive technologies. But this is not the sole or a major factor. The craze for the foreign goods is as much due to the social psyche as due to superior quality or powerful advertising compaigns.

2.4.1.4 Absence of Appropriate Government Incentive for NPDD

There has been ***almost a complete lack of government support to push the new product development activity***. It did create research institutions, many of them have done wonderful work. But the efforts of integrating them to the business were not realised. Even when the realisation dawned, the attention got focussed more on covering the cost, rather than giving new product, rooted in the natural endowment of the country, meeting the needs of society and developing technology for large scale production for international consumption.

2.4.1.5 Indifference/ Inadequacy of Institutions of Higher Learning

The institutions of higher learning, ***technical as well as management institutions, have not focussed enough attention to the task of NPDD,*** especially the integration of design, technology and management that

suits the requirements of Indian customers and exploits full potential of total Indian market (rural and urban). ***Neither it was able to encourage development of technology for large scale commercial product production*** through national efforts. Repeated imports of technology, to achieve modernisation following "catching up by latching up" policy mentioned above, also created a false sense of technological and managerial superiority, measured in numerical terms as the third largest force in the world, for the task of new prodcut development. It is true in terms of qualifications and ability to produce with given technology, adjust to available local supply etc., but *the* ***expertise is by and large in respect of making more of same thing than creating new things***

2.4.1.6 Irritants Caused to Entrepreneurs

There are several irritants caused by various factors such as ***Tax authorities, Law & Order authorities, Mafia, Political and other elements interested in various gratifications*** that suffocate an entrepreneur.

2.5 Action Strategies

New product development activity will not take roots in the country on its own, in view of the powerful forces working against it as mentioned above. What kind of action strategies are required to mitigate the issue? All round efforts would be required to undertake the tough task of new product development, at political and policy levels, at industry levels, at the firm's level and at the educational levels to make impact and arrest the adverse trends (32).

2.5.1 Challenge to Technical and Management Education

New Product Development activity can not take place unless some special skills are developed. For technical expertise to be used well, one has to be enabled to identify opportunities by creating something that did not exist. ***Creativity is important to let people dream pragmatically. A dream that galvanizes them into action to design, to give a physical shape, which only a technical person can.*** The problem with technical persons is that they tend to think vertically, in a building block manner. As soon as they face a problem that does not fit in their structured learning they believe is insurmountable. They conclude to fast about a solution, which solves the problem as they see it. They do not think there

could be many more solutions possible, deficient in certain respect as compared to the one they have thought, but better in many other respects.

This single mindedness has one more deficiency. The technical education makes one think of closely similar solutions, not radically different ones, because of adherence to the frame of reference given. Creativity helps them in rocking the established frames of references. The technical education also leads to another deficiency, that of finding complex solutions to even simple problems. If one had basics clear many simple solutions can be found, which are cost effective.

Creativity is thus an important element to exploit the technological competencies for developing low cost, relevant products and contain the cost of physical infrastructure required. Further, it helps in development of new product development competencies in an exponential manner. ***Creativity thus ought to be made an integral part of the curriculum of technical and management education.***

It is not easy to for a pragmatic ***creative person to talk to a non- creative one***. Like for an architect it is not easy to talk his vision to a non-architect. It is not easy in a society that understands something, which is more physical that an abstract idea. They need a different language to talk. It is utmost necessary to ***develop this communication ability***, something which appreciated but not put successfully in practice as yet.

The technical and management institutions also need to focus attention to ***imparting knowledge and developing skills for managing the embryonic stage;*** i.e., conceiving a product and working towards its complete design as well as development of maufacturing technology for large scale production, instead of focussing attention on developing competence for "maintenance" or 'multiplication" jobs, which was a demand in the bygone era.

Another area of deficiency is the ***lack of awareness about the social and economic realities of the country to a large mass of the society, especially to the students of the institutions of higher learning***. They are thus ***neither able to visualise the role they can play nor able to identify the opportunities*** to exploit. Management education, which was to play the role of bridging this gap, unfortunately fell short of it. It has not focussed on providing the approaches for new product development and identification of potential for new products, but confined itself to the technicalities of demand forecasting of the physical products developed elsewhere.

Last but not the least is the issue of ***integrative thinking***. In this stage of specialisation we find that the left hand does not know the right hand. This is O.K. when some one else is guiding, playing the role of integrator. But, if the country has to have new product development activity in right earnest, this widening gap has to be bridged. Unfortunately, this role is not being appreciated. It is not only a desirable thing, but is an imperative.

Management and technical institutions have to consciously consider these emerging demands of the country if they have to play a significant role to make India walk confidently in the 21st century.

2.5.2 Challenge to Industry Leaders

The Indian industry has played a significant role in meeting the key demands of burgeoning population. It had to rely heavily on the import of technology for the purpose. The pressure of meeting the demands on the one hand and relative ease of achieving growth and profit objectives (even industry leadership) through import of technology, did not put enough pressure on them to engage in new product development activity. This also helped in avoidance of risk associated with the new product development.

This, however, has lead to one of the most unfortunate consequences. It deprived the industry the place it deserved. The industry leaders in India could not become world leaders, to in any way which was possible if it had developed lateral competencies for new product development on their own.

The lack of new product development in a way also reflect the ***lack of keenness on the part of domestic firms, even the industry leaders, to identify with the problems that the country is facing in terms of foreign exchange and shortage of capital, and play a significant role in mitigating the same.*** They still do seem to be coming out of the parochial view of maintaining the interest of "their own organisations". They have not graduated from treating their organisation as a tool for maximizing material benefits to their owners (at best of some of their employees), to become ***an institution; serving, protecting and preserving the interest of society at large, where they exist.***

It is time that domestic companies, especially the leaders assumed the role of nation builders in terms of economic development. Focussing on

new product development ought to become both an objective as well as an effective strategy for playing the role effectively. Once it is taken seriously it will fetch them rich dividends in the long term. It will automatically demand new and additional inputs to be introduced into in the educational curriculum. The educational institution industry - R & D institution linkages too will be strengthened.

2.5.3 Challenge to the Policy Makers

New Product Development activity in the country has remained at low ebb due to deficiencies in the national policies. The pressing needs of society on the one hand and ready availability of borrowed solutions have had its toll. The policy makers never realised that the it can not happen on its own, as is the case with ***developed countries where the industry leaders have to slog to develop competencies to be able to develop new products as a competitive strategy.*** They don't have things readily available for manufacturing and sale. Since the context is different the approaches also ought to be different.

First and foremost is the fact that there are distinctive advantages of manufacturing a product by importing technology. This ***competitive advantage*** has to be mitigated by provide comparative advantages in tangible terms. ***It would require novel approaches of advantages. It must not be a subsidy oriented strategy, which often benefits people without delivering the goods. It must be related to performance related bonuses.*** For example, ***if the product is designed and produced through indigenous efforts it may be given the incentive***. Use of knowledge may be permitted but not imported physical facilities. It would then disqualify or may get only notional incentive. The incentives may be in the form of exemption from excise duty, sales tax etc. ***It should not be related to those things, which are likely to be misappropriated for some other purposes.*** For example, it should not be in terms of concessional electricity, land etc. But there may be priority in terms of electric connection. ***Severe penalties may have to be associated for any diversion or misuse for any other purpose***. If new product activities have to be undertaken at large scale it may require encouragement to small firms. ***Matching grants commensurate with the level of profits may be given to firms up to a particular size so that they can actively engage in new product development activities***.

There is need for protecting the efforts of the new product developers, e.g. patenting the new products. It would once again require imaginative strategies. For example, it would require active support for the product

from being copied by the "well off" firms. ***A strict regulation that the multinational corporations can not acquire the patents of products developed in India may be required***. They may have limited rights for a year or two, not long terms or unlimited ones.

There is a need for selecting the ***Chief Executives who are native strategists***, ***who have understanding the new product development process and have qualities of undertaking new product development themselves.*** If they have not been innovators themselves they will only plead and bank on the import of technology. They would not be encouraging the new product development activity because being ignorant of the process, pains and advantages of new product development, they can not lead it. Worse still, they engage in active discouragement of the activity, getting it sabotaged by those who can not do it. ***New structural designs, accounting systems and auditing practices will have to be developed to protect the activity from being killed in the hands of mercenary leaderships***.

Last, but not the least, there is need for ***promoting special, exclusive types of institutions which can impart education and training in the new product development***. These may ***be interfacing with the technical and management institutions as well as the industry*** and the non-corporate sectors for the giving the new product development activity. What should be the actual modalities involved has to be thought through, but the need for integrating idea generation abilities, design skills to fructify the idea and making it attractive to the end user in totality, and managerial skills to be able to manufacture it in a economically viable manner, it will newer be possible to give impetus to the new product development activity in the face of powerful forces working against it.

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