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JAPANESE CORPORATE STRATEGIES TO ACHIEVE INTERNATIONAL COMPETITIVENESS: A CASE OF THE TELECOM INDUSTRY

***Kiarankumar Momaya**
Banwet Ajitabh
Himanshu Shee
Indian Institute of Technology

ABSTRACT

Japan, a competitiveness leader, for most of the 1970s and 1980s is at the crossroads. Most of the 1990s, it remained in recession, and there are serious doubts about the competitiveness of Japan and its leading industries. Telecom is a vital infrastructure industry for emerging e-lance economy. An attempt was made to evaluate the competitive performance of the Japanese telecom industry in an Asian context. The strategies of Japanese firms to enhance their and their industry's competitiveness are also briefly examined. The findings of an attempt to evaluate relative competitiveness at the industry level in the context of the telecom industry in India, Japan and Korea are presented here. Competitive analysis of the industry in three countries is done using the Porter's Diamond model. Detailed evaluation is performed using an adaptation of Asset-Process-Performance model. Then, an attempt is made to understand the role of corporate strategy in the remarkable success of the Japanese industry. The strategies of Korean firms and Indian firms are also compared briefly. Finally, conclusions are drawn based on findings of the research.

BACKGROUND

Japan was seen as the world's pre-eminent economic power and a number of widely read books credited Japan with creating a new and superior form of capitalism (Porter, 1990). However, the economic performance in the 1990s and the recent research raised serious questions about competitiveness of Japan. Porter et al (2000) and team mentioned about two Japans; the uncompetitive Japan remained obscure and often hidden. An attempt has been made in our research to examine the issue of competitiveness at the industry level in the context of the telecom industry, an infrastructure for modern economy. The Telecom industry can play a very important role in enhancing the competitiveness of many other industries, as it is a vital supporting industry that creates the basic infrastructure. It is necessary that the industry itself is competitive to meet unparalleled challenges of the new knowledge century.

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This is a time of turmoil in communications and media, and for good reason; digital technology undermines the very premise on which these industries were built (Hills, 2000). For instance, more mobile phones are now sold worldwide than PCs and TVs put together. No other technology has been adapted as quickly on such a large scale (Maarten, 2000). Digital convergence and e-business are other exciting opportunities. Convergence is at the heart of the TIME (telecom, information, media and electronics), and E-business is playing an increasingly important role. At the same time e-business can represent a major threat to core business revenues, making action imperative (Barnaby, 2001). Whereas, the Japanese and Korean industries seem to have made rapid strides in absorbing new concepts and technologies, the Indian industry seems to be lagging far behind in satisfying customer needs. Recognizing this need, a research was initiated to understand the dynamics of international competitiveness as a basic step to think about enhancement strategies. The key objective was to develop a better understanding of the performance of the industry through benchmarking. Competitive analysis was performed using porter's diamond model to understand the elements of the dynamics of competitiveness. Alternative approaches to quantify competitiveness were evaluated. Detailed competitiveness evaluation was done using adaptation of the Asset-Process-Performance model. It is the companies that compete ultimately (Porter, 1998) and their strategies can play an important role in enhancing industry level competitiveness. Hence, an attempt is made to understand strategies of Japanese firms. Here, a glance at competitiveness theory and issues is given first.

COMPETITIVENESS

Competitiveness will decide winners and losers in the market place. In accelerating moves towards a truly global economy, it is international competitiveness that matters the most. Hence the focus is on international competitiveness in our research. Winds of liberalization, globalization and privatization have become more intense in the last decade of the millennium. Many countries have initiated drastic reforms to align their economies with the global economy. The formation of the World Trade Organization (WTO) has further strengthened the process of globalization. The national borders are becoming more pervious to flows of goods, services and investments. All these changes have brought new forms of competition to hitherto many protected industries and public monopolies such as telecom.

This intensifying competition has led to the emergence of competitiveness as a crucial enabler of prosperity in a globalized era. Liberalization policies of the 1990s and resulting delicensing and deregulation have exposed Indian firms to intense competition in a very short period. The days of assured returns in regulated markets have gone. Firms with poor operations and management are finding it very difficult to compete.

Firms with poor operations and management are finding it very difficult to compete. Not only firms, but also industries and countries are waking up to the reality of improving their competitiveness, if they wish to grow and be prosperous. For instance, a number of countries regularly monitor competitiveness performance of their countries on benchmarks such as the Global Competitiveness Report (GCR), and initiate changes in policies to create environments that facilitate the competitiveness of their firms and industries. In commensuration with increasing interest in the industry, competitiveness has attracted research efforts. The pioneering work on competitiveness was done at Harvard under the guidance of Porter (1980, 1990, 1998a, 1998b). Other researchers (D'Cruz, 1992; Momaya, 1998) have also attempted to bring clarity to key issues. The following key issues at the country and industry level have emerged from the literature review and discussions with experts across continents. Issues at the firm level overlap significantly with strategic management issues, and are beyond the scope of our research. Issues at the country level are as follow:

- How do countries shape their industries/firms and their competitiveness?
- Do the countries have choices in selecting competitive industries?
- What kind of reforms and at what pace do countries need to undertake successfully to transform their telecom industries in an era of deregulation and global competition?
- Are the current approaches to evaluate country competitiveness such as The Global Competitiveness Report (GCR, 1999) or The World Competitiveness Yearbook (WCY) very reliable? For instance, many countries feel that these do not reflect their real competitiveness.

Similarly, critical issues at the industry level were identified as follows:

- Does it make sense to talk about competitiveness at the industry level?
- Which are the useful frameworks to understand the dynamics of competitiveness at the industry level and its enhancement?
- Can the competitiveness of an industry be improved significantly if the industry has better indices to plan, evaluate and monitor its overall health through competitiveness?
- How is competitiveness evaluated at the industry level?
- What kind of implications can be drawn from the findings of evaluations?
- How can linkages at country and firm level be understood and used to enhance the competitiveness of an industry?
- Do all industries develop in clusters? How centralized do the clusters need to be?

The issues at the country level are addressed quite adequately by researchers such as Porter (1990, 1998a, 2000). For instance, Porter et al (2000) attributed the Japanese competitiveness to the following key elements of the Japanese corporate model:

- High quality and low cost
- Wide array of models and features
- Lean production
- Employee as assets
- Permanent employment
- Leadership by consensus
- Strong inter-corporate networks
- Long-term goals
- Internal diversification into high-growth industries
- Close working relationship with government

While the country level competitiveness provides the environment for fostering industry competitiveness, this paper discusses the findings of a research focusing on the industry level competitiveness. The first two issues within the industry level have been discussed and a reasonable consensus was reached in earlier researches (Porter, 1990; D'Cruz, 1992; Momaya, 1996). The several reasons for the focus on the industry level are discussed in Momaya (1998). Porter et al. (2000) have discussed competitive diamonds of many Japanese industries; unfortunately Telecom is not covered in detail. The findings presented in this paper are based on the research that primarily focused on issues 3 to 5 of the industry level issues in the above list. The findings are discussed in detail in subsequent sections of the paper. Next the characteristics of the industry will be discussed.

CHARACTERISTICS OF THE INDUSTRY

Characteristics of an industry can have major impact on the dynamics and rules of competition. The telecom industry has certain unique features. Distinct features the of telecom industry worldwide are identified as follow:

- Rapid technological changes
- Domination by large global players, particularly in equipment segments
- Traditionally a natural monopoly in service segments
- Currently undergoing major deregulation and privatization, in many countries.
- Size is important as demonstrated by the spate of mergers and acquisitions
- Standards such as GSM play an important role in shaping competitiveness
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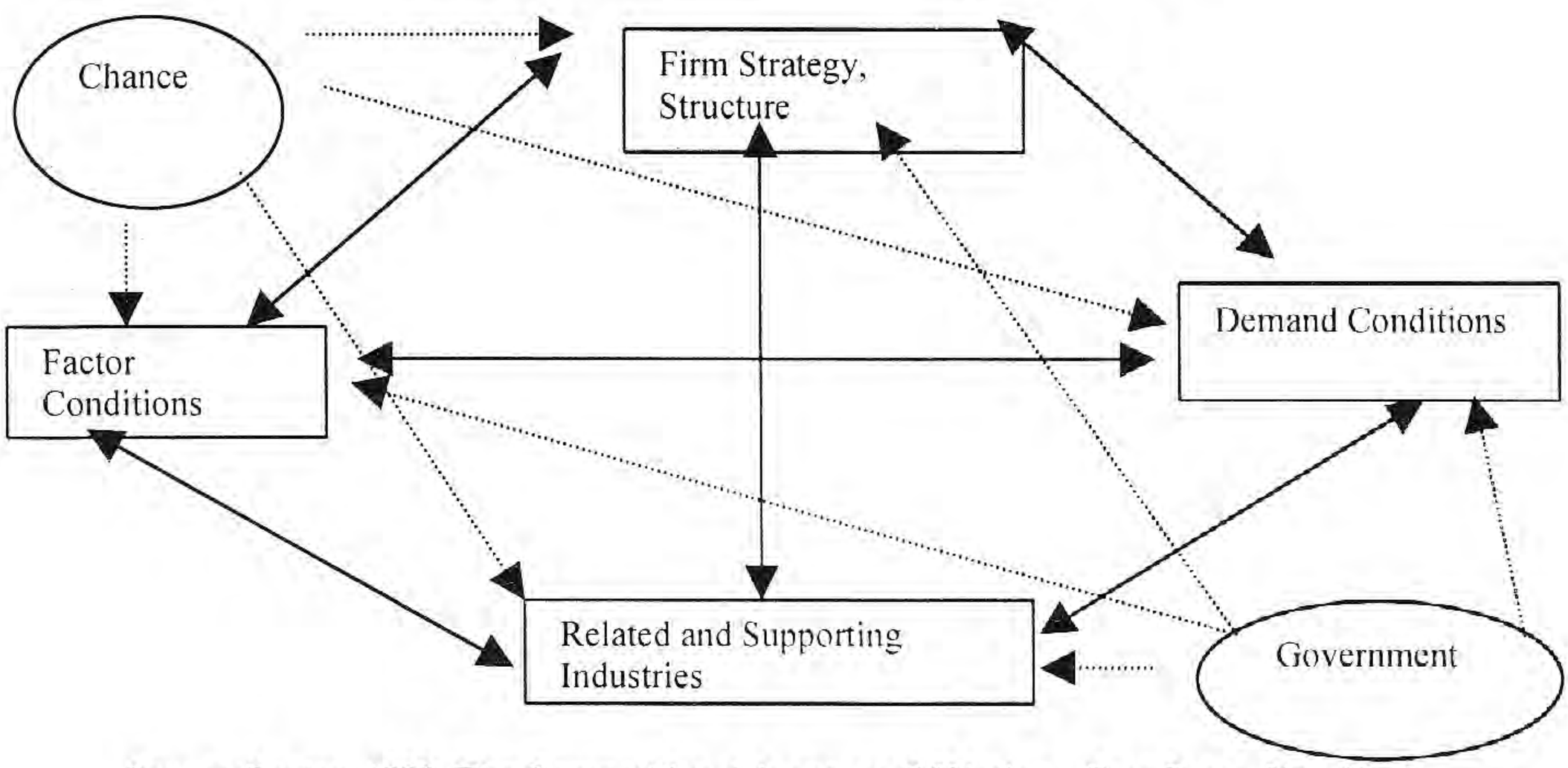
COMPETITIVE ANALYSIS

Competitive analysis using proper framework can provide useful insights into the dynamics of competitiveness of an industry. Porter's diamond framework (Porter, 1990) has found to be quite useful among competing approaches. Competitiveness environment of an industry is assessed in terms of four main facets, which are constrained or supported by two complementary factors: government and chance (Figure 1). Comparative detailed data about all countries are rarely available, but fair assessment of competitiveness dynamics of a country can be done based on qualitative parameters. An attempt was made to quantify relative strengths or weaknesses of the telecom industries in the three countries. The findings are summarized in Table 1. The relative plus or minus scores given in Table 1 are subjective judgments quantified based on analysis of numerous reports, papers and articles about the industry in the three countries followed by brainstorming and group consensus among groups of researchers. A country with a very strong performance will get a relative score of two pluses (++), whereas a country with a very poor performance will get two minuses (-- --) at the other extreme. For instance, Japan has a two- plus scores on number of facets due to its superior diamond.

Figure 1: Porter's Diamond Framework



Source:Porter, 1990, The Competitive Advantage Of Nations, Free Press, New York

(1) Factor Conditions			
• Skilled Human & Knowledge Resources	+	+++	+
• Capital resources	- -	++	-
• Advanced infrastructure	- - -	+++	+
(2) Demand Conditions			
• Quantity	++	+	+
• Sophisticated Nature of buyers	- -	++	+
(3) Related & Supporting Industries			
• Related Industries	-	++	+
• Sophisticated Suppliers	- -	+++	+
(4) Firm Strategy, Structure & Rivalry			
• Advanced management Strategies	- -	++	+
• Leadership and Commitment	- -	+	+
• Domestic internal Rivalry	+	+	+
Sub total	**4+, 14 -**	**21+, 0 -**	**9+, 1 -**
Total (+/-)	**10-**	**21+**	**8+**

Vast gaps in the competitiveness environment of India, Japan and Korea and the dynamics are captured concisely in the summary of Table 1. Weaknesses in the competitiveness environment of India are evident from the summary. Although the demand conditions have turned favorable, particularly after liberalization in the 1990s, major weaknesses are evident on advance factor conditions such as modern infrastructure and capital resources, related and supporting industries, leadership, commitment and advanced management strategies. Whereas Japan has been a leader on most factors, South Korea has made some rapid strides in the last two decades to bridge the gap. This is reflected in the middle position of Korea with significant positive scores. This competitive analysis lays foundations for evaluation of competitiveness.

EVALUATING COMPETITIVENESS

Evaluations are prerequisites to systematic improvements. Here we have followed a widely accepted wisdom: "You measure it to improve it." The importance of evaluating competitiveness has been well documented (Momaya, 1998). It might be useful here to review briefly the alternative approaches of evaluation and their relative merits or limitations. Competitiveness can be evaluated at different levels: country, industry and firm. Definitions of competitiveness at different levels and examples are given in Momaya and Selby, (1998) and Momaya, (1999). Here, only competitiveness at the industry level is being considered. One of the continuums for classifying evaluation approaches can be approximate versus detailed. An example of approaches on the continuum is given in Figure 2.

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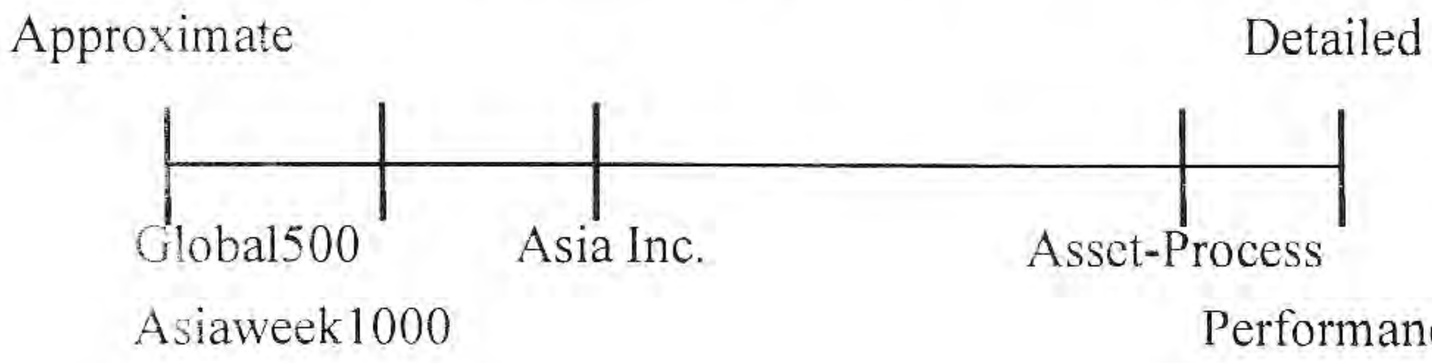
Figure 2: An Example of Positioning of Different Approaches on a Continuum



Evaluation of industry competitiveness in approximate manner can be achieved in numerous ways. One of the popular approximate methods is analysis of listings published annually by popular magazines such as Fortune, Asia Inc. and Asiaweek. A number of firms from a given country and their performance indices such as, revenues, assets, market capitalization and profitability give approximate pictures of the competitiveness of that industry of the country. For instance, performances of the telecom industries of the three countries are captured through rankings in Asiaweek (Table 2).

Table 2: Performance of the Telecom Industries on Indirect Indicators

COUNTRY / COMPANY NAME	SALES Million US $	% OF SALES
JAPAN		
NTT	78,106.00	41.09
NTT DOCOMO	21,705.00	11.42
DDI CORP.	9,739.00	5.12
MATSHUSHITA COMM. INDL.	7,139.00	3.76
JAPAN TELECOM	3,403.00	1.79
KDD	3,016.00	1.59
JAPAN RADIO	2,282.00	1.20
NIPPON COSMSYS	1,862.00	0.98
KYOWA EXEO CORP.	1,815.00	0.95
SUB TOTAL	**129,067.00**	**67.90**
INDIA		
VSNL	1,687.00	0.89
MTNL	1,282.00	0.67
SUB TOTAL	**2,969.00**	**1.56**
KOREA		
KOREA TELECOM	**8,510.00**	**4.48**
Total % Sales of Japan, India & Korea	**140,546.00**	**73.94**
Total Sales of all Asian Countries	**190,093.00**	**100.00**

Source: Adapted from Asiaweek, 1999.

evolution of the industry. However, things are changing and global equipment manufacturers such as Nokia, Motorola and Fujitsu are large firms. The importance of size for competitiveness is evident from examples of Japan and Korea in table 2

The "Global500" (Global500) list of Fortune magazine can provide some data for approximate evaluation of competitiveness of firms and industries. However, its utility at the industry level is very limited as only very large firms are ranked there. For instance, only two Japanese Telecom firms (NTT at Rank 1 and DDI at Rank 20 of the Telecom industry list) had revenues to be ranked in the Global500 list in 1999 and only NTT was left at Rank 1 in 2000. No Telecom firm from India and Korea could get there. So relative competitiveness cannot be evaluated from Global500.

When a detailed picture of competitiveness is needed, the approximate approaches discussed above may not be suitable. The approaches have inherent limitations. Many of these approaches focus on financial parameters only. Important factors such as productivity, quality, cost effectiveness, human resources and technology are often not accounted for adequately. Inclusion of only large firms leaves little data for evaluation. For instance, only one Indian firm ranks in the Global500 list in the oil sector; hence there is little utility of the list in evaluating the competitiveness of any other Indian industry. Here the Assets –Process Performance (APP) framework that has been tested in the context of North America and Japan (Momaya and Selby, 1998) was adapted.

The model provides for a comprehensive hierarchical evaluation of competitiveness at criteria, factors and facet levels. Competitive positions of industries in selected countries are evaluated based on statistical or questionnaire-based feedback from the industry. Related criteria are grouped under factors that capture their essence. The factors are further aggregated under the three facets: assets, processes and performance. A number of issues demanded focus on competitive performance in this study (Momaya, 1999); hence only performance related criteria are considered in the evaluations.

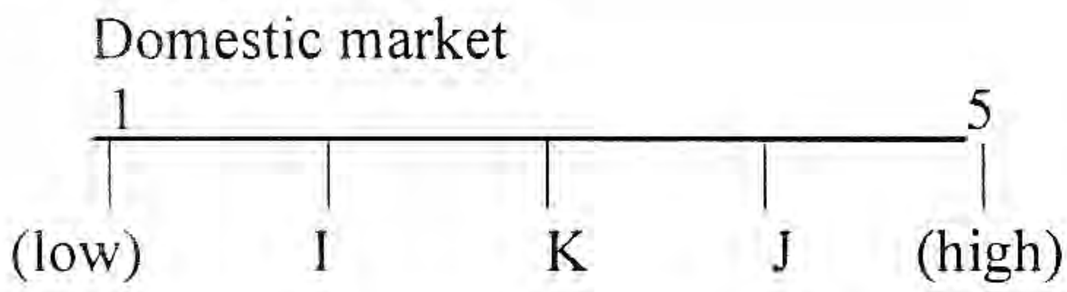
METHODOLOGY OF EVALUATING COMPETITIVENESS

Considering the complexity of the competitiveness concept, a systematic methodology was evolved. Data were collected from secondary sources (statistical data) and were complemented by questionnaire data to get a complete picture. Secondary sources included research papers in journals, books, newspapers, magazines, annual reports, newsletters and industry reports. Modern tools, such as the Internet, were also used extensively for this purpose. A four-page detailed questionnaire was used to supplement statistical data. The questionnaire was sent to about 75 (about 25 in each

included research papers in journals, books, newspapers, magazines, annual reports, newsletters and industry reports. Modern tools, such as the Internet, were also used extensively for this purpose. A four-page detailed questionnaire was used to supplement statistical data. The questionnaire was sent to about 75 (about 25 in each country) firms, academic institutions, associations and relevant government ministries/departments. The response rate was 14.7 %. The respondents were requested to compare the performance of the Indian, Japanese and Korean industry on a number of criteria and position the country using symbols I, J, K as shown in the Figure 3. The difficult task of integrating the results of different data collection methods to create a cohesive picture of industry competitiveness was attempted by the use of the technique of *standardized score.*

Figure 3: An Example of a Question in the Survey

What is the ability of the industry to generate financing needed for the Telecom related projects from the following markets?



Standardized score techniques are used to calculate and aggregate the relative competitiveness score of the three countries. Comparative statistical data collected from secondary sources was a major source to calculate the standardized score. The score for a country on a criterion is the average of the feedback from all participants for the surveyed criteria. Standardized score is defined as follows:

$$\text{Standardized Score}_{ij} = (\text{Average}_j - \text{Score}_{ij}) / \text{STD}_j$$

Where Scoreij = Score of country *i* on criterion *j* (average)

Average_j = Average of scores of the three countries on criterion *j*

STD_j = Standard deviation of scores of the three countries on criterion *j*

RESEARCH FINDINGS

Findings of the competitiveness evaluation of the Telecom industry using the APP framework provide a comprehensive picture. The detailed findings are given in Table 3. Overall, the excellent competitiveness of the Japanese industry and competitiveness

made tremendous strides in the last two decades. Rankings of the Korean Telecom industry in global equipment markets have improved continuously from nowhere in the 1980s to 10th in 1991 and 6th in 1994 (Kim, 1997). Today, Korean firms such as Samsung are providing telecom solutions in high-tech segments such as wireless telephones to even developed countries. For instance, Samsung provided a $210 million full CDMA system in Sydney and Melbourne and is one of the five-telecom majors working on a universal wireless system for the 21st century.

Table 3: Competitiveness Performances of the Telecom Industries: Standardized Scores Table

FACTOR / Criteria of Competitiveness	India	Japan	Korea
PRODUCTIVITY	-4.89	3.38	1.51
Telecom Revenue/employee ($ mill)	-0.84	1.11	-0.26
Annual Telecom Revenue as % of GDP	-1.12	0.80	0.32
Annual Telecom Expenditure as % of GDP	-0.79	-0.34	1.12
*Permit Process - Licensing, etc. (a) Basic	-1.06	0.92	0.14
(b) Cellular	-1.08	0.89	0.19
HUMAN RESOURCES	1.15	-0.57	-0.58
Telecom Employees (per thousand lines)	1.15	-0.57	-0.58
QUALITY/ EFFECTIVENESS	-4.57	5.01	-0.44
Tele-density (Basic phones per 100 inhabitants)	-1.14	0.73	0.41
Internet Hosts	-0.65	1.15	-0.50
*Customer satisfaction a) Products	-1.02	0.98	0.04
b) Services	-0.78	1.13	-0.35
* Timeliness of Delivery	-0.98	1.02	-0.04
TECHNOLOGICAL	-1.89	2.1	-0.21
Switching digitization (%)	0.33	0.79	-1.12
Transmission digitization (%)	-1.14	0.41	0.73
*Commercialization	-1.08	0.90	0.18
FINANCIAL	-0.49	2.28	-1.81
Revenue per line	-0.71	1.14	-0.44
Return on Sales (RoS)	1.15	-0.46	-0.69
Return on Assets (RoA)	1.12	-0.33	-0.80
*Ability to generate finance a) Domestic market	-0.98	1.02	-0.04
b) International market	-1.07	0.91	0.16
INTERNATIONAL	-1.19	-0.51	1.7
Minutes per inhabitants (outgoing traffic) (1990-96)	-1.15	0.47	0.68
CAGR (%) of International Outgoing Traffic (1996)	-0.04	-0.98	1.02
OTHERS	-1.14	0.75	0.39
*Extent of outsourcing	-1.14	0.75	0.39
TOTAL SCORE	-13.02	12.44	0.56

Notes: 1. * Denotes results from questionnaire survey
2. The technique of Standardized score is used to normalize scores on each criterion,

The Japanese telecom industry may be the most competitive in the Asian region, but its global competitiveness position may not be No. 1 and some trends are not favorable. Despite being very successful in Japan in bringing the latest light weight 3G cellular handsets, the Japanese terminal equipment manufacturers have very limited success in

The Japanese telecom industry may be the most competitive in the Asian region, but its global competitiveness position may not be No. 1 and some trends are not favorable. Despite being very successful in Japan in bringing the latest light weight 3G cellular handsets, the Japanese terminal equipment manufacturers have very limited success in other countries. For instance, the Japanese firms have very a low market share in segments such as mobile handsets in India and Korea. Part of this can be traced to different standards being followed in these countries, but part may lie in their competitiveness on factors such as cost, marketing and flexibility.

Similar adverse trends for Japanese firms are visible in global markets also. For instance, the Japanese industry seems to have lost its share in world exports since its pre-1990 peak (Porter, 2000, p.11). Porter et al. (2000) has hinted at the so-called "Telecom-War" between MITI and the Ministry of Post and Telephone (MPT) as a key reason that hindered competitiveness. MITI did not want MPT to influence the computer industry, while MPT wanted MITI to stay away from the telecom industry. This rivalry seriously hindered advancements that involved the combination of information technology and telecom.

CORPORATE STRATEGIES OF JAPANESE FIRMS

Having seen the superior performance of the Japanese industry, it would be worthwhile to get a glimpse of the strategies of the firms that are at the root of the success. Japanese firms have traditionally followed internal development and alliance route to strategy. Alliances with foreign firms have been used very effectively for learning and technology acquisition. They have been found to emphasis internal development more than acquisitions of firms. In terms of alternative directions (Johnson, 1996), Japanese firms seems to focus on rapid product and market development with emphasis on home market first and then aggressive push into foreign markets. These strategies are supported by superior technology strategies.

Sophisticated integration of technology strategies with corporate strategy is the other remarkable feature of Japanese firms. "Future Strategy Group" has attempted to provide a glimpse of technology strategy in the context of the construction industry (Miyanohara, 1989). Elements of integration of different facets of corporate strategy such as finance, globalization, diversification, technology and innovation are given. The superior competitiveness of the Japanese firms can also be partly attributed to their ability to build technology competencies. The arduous process of opto-electronics competence building in 11 Japanese firms was noted by Miyazaki (1999). In-house development was identified as the primary mode of competence building spanning decades. The study confirms coherence in the Japanese strategies and top management

Evolving change in the corporate strategies of Japanese communication firms can be captured quite well in the strategies of an emerging firm like Hikari Tsushin. Hardly a household name internationally, Hikari Tsushin Inc., a mobile phone subscription agency and avid investor, has joined an elite group of top 10 by market capitalization, which includes NTT Docomo, Sony and Fujitsu in a very short time (ET, 1999). Hikari Tsushin has followed unique profit structure strategies of subscription commission, stock commission and effective use of sales channels such as "Hit Shops" for rapid growth (Hikari). Its strategy is a radical departure from the strategies of other Japanese communication firms. The firm has invested in many vibrant upstarts such as Liquid Audio Japan, Cyber Agent and Japan Digital Broadcasting. Strategies of such firms are indicative of major transformation in Japanese business thinking and strategies.

Japanese telecom firms still have good positioning and may improve competitiveness. For instance, the Japanese telecom giant NTT still ranks first ahead of its main competitors with US $ 93.6 billion in revenues. It has grown at a healthy 23% as compared to 1998, far better then the 16% of AT&T, 5% of Deutsche Telekom and 8% of BT (Global500, 2000). It's profitability record is not very good, but it may turn-around as it has good foundations for implementing the new corporate agenda of Japanese companies, such as one provided by Porter et al. (2000):

- Create distinctive, long-term strategies
- Expand the focus of operational effectiveness
- Learn the role of industry structure in strategy
- Shift the goal from growth to profitability
- Reverse unrelated diversification
- Update the Japanese organizational model

Indications are that many Japanese firms, including the ones in the Telecom industry have taken note of their competitiveness problems and have initiated major transformations to enhance competitiveness. On the other side, sustainability of aggressive strategies of firms such as Hikari is increasingly questioned. Even the strongest Japanese industry would also have to continuously review their competitiveness dynamics and take proactive steps to improve competitiveness.

Indian and Korean firms have chosen quite different paths and with different competitiveness performance. It seems that Korean firms were quite early and fast adapters to understand the dynamic changes happening in the convergence industry. With good strategic and technology management, they have achieved commanding positions in some segments of the equipment industry. For instance, Samsung and LG have been able to compete very successfully even in sophisticated equipment such as

With good strategic and technology management, they have achieved commanding positions in some segments of the equipment industry. For instance, Samsung and LG have been able to compete very successfully even in sophisticated equipment such as cellular handsets. Similarly, Korean service firms such as Korea Telecom have been investing very aggressively to install sophisticated intelligent broadband infrastructure. In contrast, many Indian firms have shifted their focus on services only, often giving up the good positions they had in equipment segments.

CONCLUSION

The detailed evaluation of the competitiveness of the telecom industries in India, Korea and Japan confirms the superior competitiveness of Japan. Efforts to understand the dynamics of such superior competitiveness do hint at some potential sources. However, the dynamics of competitiveness still remain an enigma. Competitive analysis using Porter's diamond model provides some clues. Japan has very positive scores on factor conditions and demand conditions as well as related supporting industries. Superior performance on these may be attributed to better strategic management in Japanese firms. A glimpse of Japanese corporate strategies and their changes is provided, but much more research is needed to understand the dynamics of competitiveness. The analysis of the successes and failures of the Japanese industry indicates that even the Japanese industry with so many factors in its favor faces an uphill task in maintaining its position. It is very necessary to continuously strive for a better understanding of competitiveness dynamics and improvement efforts.

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