

CHAPTER 3

The Product Life Cycle of Inner Tubes

Torita has been the leading inner tube manufacturer in Malaysia for several reasons. Among the reasons for the large market share are emphasized superior quality control and a successful branding strategy, which has enabled the production of superior quality inner tubes and the marketing of previous premium price inner tubes. However, since 1993, Torita has been plagued by declining sales, loss of market share, stagnant overall market growth, rising production costs, price volatility of natural rubber that resulting in losses. In response, Torita is attempting to reduce its unit operating costs and diversifying its business by entering into new business ventures that emphasize low labour content and the production of high technology rubber related products. Torita is in the midst of diversifying its products line so as to strengthen its foothold in the rubber industry by adopting a production strategy that focusing on reducing unit costs through the advantage of economies of scale.

Due to recent rapid globalization, there are lucrative markets opening up for high-tech rubber related products¹⁰. As such, Torita plans to establish its presence in those emerging markets by adopting its business diversification strategy. However, Torita is taking a risk because entering into new business markets and market segments where it has very little or no experience. Torita is in the transformation process producing low-tech, low productivity and high labour intensive rubber related products to producing high-tech, high productivity and low labour content rubber related products.

However, the major challenges facing Torita in the 21st century are in identifying what kinds of high-tech products to produce, where to secure the necessary technology in producing high-tech products, which organisation culture is appropriate for Torita to adopt to achieve its new goals¹¹.

3.2 Product Life Cycle of Inner Tubes

The Product Life Cycle theory will be used to illustrate the inner tube sales. The inner tube Product Life Cycle can be divided into four distinct major stages : (1) Market Introduction Stage { From 1970 To 1984 }, (2) Market Growth Stage { From 1985 To 1987 }, (3) Market Maturity Stage { From 1988 To 1992 }, and Market Decline Stage { From 1993 To Beyond 2000 }.(See Exhibit 4.)

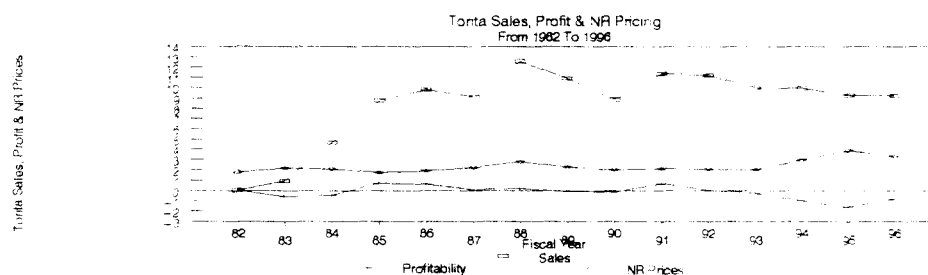
¹⁰ Tan Sri Dato' Dr Othman Yeop Abdullah, (1997), "*The changing Malaysian policies and their impact on the world natural rubber market*", Malaysian Rubber Products Manufacturers' Association 1996-1997 Industry and Export Directory, pp. 95-101.

¹¹ *The Industrial and General Rubber Goods sector in Malaysia* (1997) by Malaysia Rubber Development Board.

Exhibit 4

Torita Inner Tube Product Life Cycle Chart

Description	Introduction			Growth			Maturity				Decline				
	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
Malaysia Tube Production (RM Million)	26.5	22.3	20.6	20.4	26.0	45.5	51.1	54.6	49.1	52.8	46.8	54.5	60.1	64.2	64.2
Torita Sales Turnover (RM Million)	0.0	0.9	4.7	8.8	9.8	9.1	12.6	10.9	8.9	11.4	11.2	10.0	9.9	9.3	9.2
% Inner Tubes Market Share	0.0	4.2	22.7	43.0	37.8	20.0	24.6	20.0	18.0	21.6	24.0	18.3	16.6	14.4	11.0
Torita Net Profits Before Tax (RM Million)	(0.00)	(0.56)	(0.49)	0.74	0.60	0.11	0.19	(0.12)	(0.16)	0.66	0.07	(0.27)	(0.96)	(1.63)	(0.84)
Natural Rubber SMR 20 Price Levels (RM)	1.78	2.16	2.09	1.74	1.91	2.24	2.78	2.26	2.05	2.13	2.09	2.03	2.93	3.65	3.31
Torita Fixed Assets (RM Million)	2.96	3.30	3.29	3.11	2.89	2.60	2.90	2.69	2.84	3.50	3.31	3.20	3.16	2.66	5.09
Torita Total Workforce (Employees)	10	150	200	250	280	263	235	204	213	184	194	212	179	135	125
Malaysia Rubber Industry Productivity Ratio	—	—	—	1.35	1.75	1.83	2.06	1.19	0.86	0.80	0.84	0.86	0.94	—	—
Torita Productivity Ratio – Added Value/Fixed Asset	—	—	—	—	—	0.59	0.69	0.60	0.60	0.66	0.57	0.51	0.34	0.12	0.23



Torita Inner Tube Product Life Cycle	Introduction			Growth			Maturity					Decline			
	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
Sales	<-- Low -->			<-- Rising -->			<-- Peak -->					<-- Declining -->			
Costs	<-- High -->			<-- Average -->			<-- Low -->					<-- Low -->			
Profits	<-- Negative -->			<-- Profit -->			<-- Profit -->					<-- Losses -->			
Customers	<-- Innovator -->			<-- Early Adopter -->			<-- Middle Majority -->					<-- Laggards -->			
Competitors	<-- Few -->			<-- Growing -->			<-- Growing -->					<-- Growing -->			
Natural Rubber Price (RM)	1.75	2.18	2.09	1.74	1.91	2.24	2.78	2.26	2.05	2.13	2.09	2.03	2.93	3.65	3.31

Sources: This Table was assembled from several sources: The Malaysian Rubber Review (1982–1997), Torita Income Statement & Balance Sheet, The 1985–95 Productivity Report from NPC and Philip Kotler (1996) Marketing Management – An Asian Perspective.

The inner tube industry entered its “Market Introduction” stage in the 1970s to tap the increasing demand for inner tubes from bicycle and motorcycle segment. The first company to produce inner tubes was Fung Keong Rubber Manufacturing (M) Sendirian Berhad. The market for Inner tubes of other range such as passenger cars, van, light truck, truck and bus were also being introduced in the 1980s.¹²

¹² Source: *The Malaysia Rubber Reviews & MIDA Investment Reports* from 1980 to 1996

3.2.1 Market Introduction Stage

The Market Introduction Stage of inner tube was from 1970 To 1984. However, since the secondary data available was only from 1982, therefore the later stage of inner tube Product Life Cycle was studied. By the end of 1984, there were only nine players in the Malaysian inner tubes industry namely Fung Keong Rubber Mfg (M) Sdn Bhd, Tian Thai Pabrik Getah Sdn Bhd, Eastern Union Rubber Products Sdn Bhd, Lit Sing Rubber Sdn Bhd, Yit Heng Trading Co., Sun Yuen Rubber Mfg Co. Sdn Bhd and Shum Yip Leong Rubber Works Sdn Bhd.(See Exhibit 5.) Due to low output, the price of the product tend to be very high. Technological problems in production may have not yet been fully mastered and higher margin are required in order to support the heavy promotional expenditures which are necessary to achieve growth.

Torita's total inner tube sales was relatively low and relatively fewer players at the introduction stage. This stage starts when bicycle and motorcycle tubes were launched. It takes time to roll out the product in several markets and to fill the dealers pipelines, so sales growth is apt to be slow. Therefore, Torita's sales in 1982 recorded only RM 6,511 followed by RM 1 million in 1983 and then subsequently growth to RM 4.6 million in 1984. This explains that Torita was not utilising its full production capacity. This was in compliance with the Product Life Cycle theory where profits are negative because of the low sales and heavy distribution and promotional expenses for which much money is needed to attract distributors and "fill the pipelines" from 1982 to 1994.¹³

¹³ Source: *Torita Management Report* from 1982 to 1996.

Exhibit 5
A table of the formation of companies producing inner tubes in Malaysia

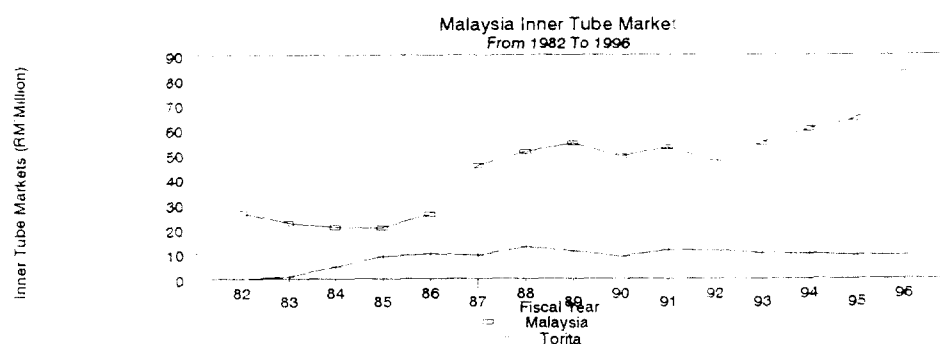
No	Inner Tube Manufacturer	Year of Establishment	Authorized Capital In RM Million	Paid Up Capital RM Million	Product Mix	Entering The Product Life Cycle Stages	Inner Tubes Actual Average Sales According To Sales Tax Return 1985 (RM Million)	1986 (RM Million)	1987 (RM Million)	% Market Share	Production Capacity In 1988 (RM Million)	Profitability In 1988 Financial Year
1	Long Keong Rubber Mfg (M) Sdn Bhd	1939	30.00	20.00	Multiple	Introduction	3.60	6.13	6.40	10.0%	10.00	+
2	Shum Yip Leong Rubber Works Sdn Bhd	1955	5.00	4.75	Multiple		1.38	11.40	6.00	7.1%	12.00	-
3	Yin Heng Trading Co	1973	2.00	1.75	Single		3.42	4.20	4.10	4.9%	5.46	-
4	Ngai Seng Rubber Industries Sdn Bhd	1975	5.00	2.00	Single		5.76	5.64	6.80	6.1%	7.70	-
5	Eastern Union Rubber Products Sdn Bhd	1975	5.00	2.34	Multiple	Introduction	1.30	1.51	3.50	4.2%	4.00	+
6	Li Seng Rubber Mfg Sdn Bhd	1978	1.00	0.83	Single		2.30	2.43	3.10	3.7%	4.80	-
7	Tan Thai Peabirk Gelah Sdn Bhd	1978	0.50	0.43	Single		0.40	1.38	4.10	4.9%	6.90	-
8	Torita Rubber Works Sdn Bhd	1980	5.00	4.75	Single		9.05	10.86	9.24	11.0%	14.00	-
9	Sun Yuen Rubber Mfg Co. Sdn Bhd	1981	2.00	1.20	Single	Growth	0.90	0.63	4.68	5.6%	5.90	-
10	Popular Rubber Industries Sdn Bhd	1983	5.00	1.15	Single		-	4.20	3.50	4.2%	4.75	-
11	Pan Malaysia Rubber Sdn Bhd	1985	5.00	2.25	Single		-	5.40	8.64	10.3%	9.90	-
12	Everthrough Rubber Industries Sdn Bhd	1988	10.00	7.50	Single		-	1.38	18.60	22.1%	20.00	+
13	TNP Industries Sdn Bhd	1993	2.00	1.00	Single	Decline	-	-	2.30	2.7%	3.90	-
14	Larut Rubber Industries Sdn Bhd	1995	5.00	3.00	Single		-	-	1.24	1.5%	3.50	-
			127.50	59.57			28.09	55.16	84.20	100.0%	112.51	
										74.8%		

Source: Malaysia Custom Department - Sales Tax Returns Reports (Excludes Excess Duty and Sales Tax) & The Registrar of Companies and Business & The Malaysia Inner Tube Association Capacity Report

At this stage, the average natural rubber price shown were slightly volatile with RM 1.78 in 1982, RM 2.18 in 1983 and RM 2.09 in 1984. However, the price level of natural rubber shown in Exhibit 4 to certain extent could partly explains the performance of Torita in 1982, 1983 and 1984. In 1982, the marginal losses was realized as a result of relatively lower average natural rubber price and low sales of RM 6,511, the losses worsen to RM 0.56 million in respect to the average rubber price dropped to RM 2.09 and the sales increased to RM 4.7 million. Torita business performance seems to fit rather well with the Product Life Cycle of inner tubes industry at the Market Introduction Stage. Torita market share in term of sales were increased from 0% in 1983 to 4.2% in 1983 and subsequently increased rapidly to 22.7% in 1984 as shown in Exhibit 6.

Exhibit 6 Malaysia Inner Tube Product Life Cycle Chart

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	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96
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3.2.2 Market Growth Stage

The market growth stage of inner tube was from 1985 to 1987. The growth stage is marked by a rapid climb in sales as shown in Exhibit 4, where the inner tube industry sales was marked by a rapid climb in sales from RM 20.4 million in 1985 to RM 26.0 in 1986 and subsequently to RM 45.5 million in 1987, despite the recession in 1984 and 1985.¹⁴ New competitors enter into the market during this stage were Popular Rubber Industries Sdn Bhd and Pan Malaysia Rubber Sdn Bhd which make up the total of eleven players in the inner tube industry. In line with the inner tube PLC, Torita sales was also increased from RM 4.7 million in 1984 to RM 8.8 million in 1985 which was nearly 87%.

Subsequently, Torita sales continued to increase to RM 9.8 million in 1986. However, Torita sales decline slightly to RM 9.1 million in 1987 as a result of higher selling price due to the higher average natural rubber price from RM 1.74 in 1985 to RM 2.24 in 1987. The rate of growth seem eventually changes from an accelerating rate to a decelerating rate, partly also as a result of lower average natural rubber pricing at RM 1.74 that year.

Torita market share was increased from 22.7% in 1984 to 43.0% in 1985. Meanwhile, Torita started making RM 0.74 million profit as promotion costs are spread over a larger volume, lower average natural rubber price and unit manufacturing costs fall faster than price declines owing to the "experience curve".¹⁵

Torita profit deteriorated slightly in 1986 due to the higher average natural rubber price at RM 1.91 as compare to RM 1.74 in 1985. Since the inner tube prices

¹⁴ Source: The Malaysia Rubber Review & The Country Economic Overview For 1984 & 1985.

¹⁵ Philip Kotler, Swee Hoon Ang, Siew Meng Leong, Chin Tiong Tan(1996), Marketing Management . "An Asian Perspective". Prentice Hall NJ, pp. 426-455.

remains where they are. Subsequently, Torita profit deteriorated further to RM 0.4 million in 1986 due to increases in average natural rubber price has gone up to RM 2.24, however, the inner tube prices still remained the same. Torita business performance appeared to be correlated well with the Product Life Cycle hypotheses for inner tube industry, particularly under the Market Growth Stage.

3.2.3 Market Maturity Stage

The Market Maturity Stage of inner tube was from 1988 to 1992. Toward the end of market maturity stage, there were a total of 12 inner tube players in the inner tube industry of Malaysia. New competitors like Everthrough Rubber Products Sdn Bhd entered into the market.(See Exhibit 5.)

At this stage sales of inner tube decreased, and the product entered into a stage of relatively maturity. It is shown in Exhibit 4 where the Malaysian inner tube industry sales was only increased from RM 45.5 million in 1987 to RM 51.4 million in 1988 and 52.6% in 1989 and subsequently dropped to RM 49.1 million in 1990, RM 52.8 million in 1992. As such this stage existed slightly longer than the previous stages.

The average natural rubber price was increased from 1987 of RM 2.24 to RM 2.78 in 1988 and then dropped throughout the Market Maturity Stage to RM 2.09 in 1992. Realising that the higher unit product cost was due to the higher average natural rubber price, Torita had no choice, but to increase its production capacity from RM 9.1 million sales to RM 12.6 million in 1988, RM 10.9 million in 1989, and continued to decline slightly to RM 8.9 million and eventually picking up to RM 11.4 million in 1991 and RM 11.2 in 1992. The slow down in the rate of sales growth created overcapacity in the industry.

This overcapacity transformed into intensified competition, competitors scramble to find and enter niches. They engaged infrequent markdowns and off-list pricing. These steps eroded profits where Torita profit dropped to RM 0.19 million in 1988 and subsequently into losses the rest of the years, such as losses RM 0.12 million in 1989, losses of RM 0.16 million in 1990. Torita suffered losses for both years due to management disputes in 1989.(See Exhibit 7) As a result, Torita sales declined from RM 12.6 million in 1988 to RM 10.9 million in 1989 and declined further to RM 8.9 million in 1990. However, Torita sales picked up again in 1991 to RM 11.4 million to merely RM 0.07 million. Profit dropped to merely RM 0.07 million in 1992 as a result of intense competition among rivalry. However, profit realised in 1991 and 1992 were RM 0.66 million and RM 0.07 million respectively. As for the profitability ratio in term of added value per fixed asset, Torita productivity ratio was much lower compare to the Malaysian Rubber Industry Productivity ratio, as shown in Exhibit 4.

Exhibit 7

Tontia Rubber Works Sandimen Branch Key Position Changes That Contributed To The Past Performance - From 1982 To 1987

Key Management Position	Introduction		Growth		Maturity				Decline					
	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991				
Managing Director	* Mr Cheng Kim Fook Joined On 1/4/1982										1987			
Senior Manager											9 Years of Service			
Plant Manager														
Sales Manager														
Export Executive														
Maintenance Manager														
Production Manager														
Production Executive														
Production Officer														
Administration Officer														
Account Officer														
Payroll Assistant														
Sales Representative 1														
Sales Representative 2														
Chief Store Keeper														
*** Tontia Workforce ***	75	150	200	250	263	235	204	213	164	194	179	136	125	162

3.2.4 Decline Stage

The Decline Stage of inner tube was from 1993 to beyond 2000. Towards the end of 1997, there were altogether fourteen players in the inner tube industry. New competitor like Larut Rubber Industries Sdn Bhd entered into the market in 1995 as shown in Exhibit 5. The Inner tube market was increased from RM 10.0 million in 1993 to RM 54.5 million in 1993 to RM 84.2 million in 1996 as a result of tremendous growth in the Malaysia economy with over 8% growth from 1992 to 1996. However, the inner tube markets segment remains strong in bicycle, motorcycle, van, light truck, truck and bus. Meanwhile, the truck and bus tubes has been gradually eroded as a result of technological advances in tyre industry toward tubeless tyres. Simultaneously, there are also substitute for natural rubber tubes by synthetic butyl tubes which can withstand heat over the natural rubber tubes. As such, the inner tube industry will eventually decline.

Torita inner tubes sales declined as a result of technological advances in tyre industry, shifts in consumers expectations, and increased domestic as well as foreign competition. All of these will certainly lead to overcapacity, increased price cutting, and profit erosion.¹⁶ However, the productivity ratio in term of added value per fixed asset in 1995 and 1996 respectively were 0.12 and 0.23 which was extremely lower as compared to the rubber industry at above 0.80. Therefore, to certain extend, the profitability ratio could reflex the profitability relationship..

According to the Registrar of Company search conducted for the 1996 financial year, it has been found that nine out of fourteen players were suffering losses as indicated in their income statement and balance sheet. Unfortunately, most of

¹⁶ Source: *Information Searched from Registrar of Companies.*

these companies that dependent one a single product have not developed a well-thought-out policy for handling their ageing products. For the Malaysian inner tube industry, sentiment do plays a role; a company may find difficulty in parting with their first product, treating it like an old and trusted friend. Meanwhile, there was still new competitor interested to enter the inner tube market such as Larut Rubber Industries Sdn Bhd entered in 1995 during the declining stage. Suprisingly that they were none of the inner tube players willing to left the inner tube industry. Carrying a weak product like inner tube products in which it will depress Torita's current profitability and weaken its foothold on the future.

Torita's sales declined to RM 10.0 million in 1993, RM 9.9 million in 1994, RM 9.3 million in 1995 and sudsequently to RM 9.2 million in 1996. Meanwhile, Torita's profit declined from RM 0.07 million in 1992 to losses of RM 0.27 million in 1993. Torita continued to suffering losses of RM 0.94 million in 1994 due to the sharp increase in average natural rubber price from RM 2.03 in 1993, to RM 2.93 in RM 2.93 in 1994. In 1995, the average rubber price continue to raise to as high as RM 3.85, as such Torita continued to make losses which amounted to RM 1.63 million for that year. This was mainly due to Mr.Tan Hak Ngee mistaken in hedging the natural rubber price whereby he hedged a forward purchase at RM 4.76 with a quantity of more than 200 metric tonnes. At that time, Mr.Tan decided to resigned from the company, however and the company has to bear the severe losses amounted to RM 1.63 million in 1995. However, Torita, could reduce its losses to RM 0.80 million in 1996 when the average natural rubber price dropped to RM 3.31 in 1996. Torita is expected to make some small profit in 1997 with the further decline of the average natural rubber price and the commissioning of its Industrial rubber goods, the Precured Liner production in August, despite country the recent currency turmoil and the stock market clashed.¹⁷

¹⁷ Source: *Torita Income Statement & Balance Sheet from 1982 to 1996*.