Delhi Business Review ✠ Vol. 9, No. 1 (January - June 2008)

Case Study

IS PRODUCT DEVELOPMENT REALLY GOOD ALWAYS?+

Himanshu Dutt*

QUITE often the term product development is understood to be a strategic initiative for organizational benefit, but what if it does not turn out to be the one. This case study presents one such circumstance where a global automotive component manufacturer failed to interpret and decode the meaning of product development for its infatuation with compactness in designs. The company re-worked on its brake lining components to reduce the overall size and bulge of brake-box unit. In the wake of new compact than ever *product designs, the company also re-formulated pricing strategy for its new product line. Initially, the sales bounced but after a while, it dropped severely. No reason seemed clear about this sudden untimely downfall of sales. In this backdrop, the dilemma was – what caused this decline in sales – the new product line itself or the revised price for these new products?*

Key Words: Product Development, Product Designs, Brake Lining Components, Spares, Technology

Introduction

In India, Caltrex operated as a wholly owned subsidiary of the parent organization in South America, with the name of Caltrex India Holdings Pvt. Ltd which is into components and spares business, sourcing to domestic and South East Asian markets, through its 3 independent manufacturing locations in Gurgaon, Pune and newly built facility at Manesar. The company in India established its operations in the year 2000 and has grown multifold in six years with almost 4.7 percent growth over the last year (in 2005-06) profit at a turnover of $93.5 million (in 2006-07) from all of the three SBUs. The company exports from India contribute to 26 percent of global sales for Caltrex which is highest after the parent company at 49 percent in Sao Paulo.

Caltrex Mechanicals has been a recognized name among the OEM manufacturing brake lining components for the automobiles world over. With over 6 product lines *(Exhibit I)* under 2 brand names, 9 manufacturing locations in 4 countries and a network of over 2,000 suppliers and dealers; the company has larger than mouth appetite to grow. The Vice President, Carlos Neuman, last year in the governing body meeting announced the progress with figures growing at an average rate of nearly 4 percent annually, over the previous years' profit of $290 million globally.

Development Orientation of Caltrex India

Caltrex Mechanicals attribute this 'so-short span' success to Mr. Venugopal, Country Manager for Caltrex India who has taken care of the subsidiary businesses of Caltrex in India for last 6 years.

+ *The case study was awarded second prize in* 3rd National Case Studies Symposium 2007*, organized by GGS Indraprastha University, Delhi. It has been modified to suit the publication purpose.*

* *Sr. Lecturer in Management, Delhi School of Professional Studies & Research (GGS Indraprastha University), Delhi, India.*

Venugopal, an IITian in applied mechanics, who was initially appointed as product manager, transformed to the current post, because of his product development management capabilities. In the words of Mr. Venugopal, *"developing better products demand a mix of technology and design to the standard where the difference between both of them dissipates to become one"*. In one of his article in a journal, he quoted *"technology inspires compact designs and sophistication in products, incorporated in a way, to have scope for more space and convenience in handling"*. In an interview with an international T.V channel, he remarked that *"design orientation is a key variable of product development" and "more than 70 percent efforts by the organizations in mechanics like ours who are in automotive engineering are re-working on design developments for compactness"*. While Mr. Mishra, R&D Chief of Caltrex India, in the same interview quoted *"for designing compact products, the organizations must focus on user design orientation"* but also hypothesized that *"the possibility of common man designing some automobile individually is almost negligible and therefore the term like user orientation becomes vague here"*. This hence becomes the responsibility of automobile and automotive manufacturers to develop designs that speaks for compactness and scope for space.

It is clear that both have emphasized upon developing ever shrinking component designs for more compactness and space that shall put pressure on automobile companies to develop compact vehicle. This continuous research in product specifications, component designs and multifunction spares did pay off well to the company and the company decided this year to increase the R&D spending by nearly 8 percent of total sales (in India).

Caltrex India through its continuous product improvement initiatives (Exhibit II) has so far produced 3 upgraded versions of brake lining components and also has developed multifunction spares eliminating the need for individual spares for different spares based functions thus, making them common for all vehicles and to suit the assembly lines on which the final development is to be done. Similarly the upgradation in design of the brake lining components has reduced the length and breadth of the brake box in cars. The company spent nearly $70,000 to develop these improvements and plans to allocate some $48,000 for integrating the brake lining components through multi-utility spares eliminating the scope of different spares to be used with different brake component systems to form the whole of brake box.

Mr. Mishra and Mr. Venugopal were quite happy with the developments while the designs were being imitated at the parent company too. The company saved whopping $1.5 million from this product development initiative globally which amounts to be the cost of producing the 6 different spares with 7,000 parts for each one of them. This was cheap against what the payoff company had comparatively through this multifunction spare deigns.

New Design Initiative

This year, in early January, the company appointed Mr. Gopalswamy Iyer as Product Manager, for Caltrex range of brake lining components and spares. Mr. Iyer, an engineer with marketing experience of 7 years, promoted the products well until recently he declared to re-vitalize the product lines in terms of cost based differentiation. The product manager found big scope for margins from their product design initiatives based on compactness and integration of brake lining system with multifunction spares. So the prices were revised @ 11 percent with an increment ranging between Rs. 235 – 319 excluding the sales tax. Meanwhile the company in January also launched new lock system technology for spares meant for the brake unit called 'Anti-lock brake System' (Exhibit III).

Market Response and Company Reaction

The product was initially accepted with lukewarm response but after 2 months collapsed. As ever confident Mr. Venugopal and Mr. Mishra both reacted normally until it was clear to them that sales were really sinking in figures. Mr. Gopalswamy was also not sure that the drowning sales were due to

his idea of price hike or due to the new technology that the R&D division had just roped in. By April, the sales recorded for brake lining components and spares came crashing to a downfall of lowest ever sales. In comparison to last year sales of July, Caltrex India has run under a loss of $ 11,000 significant enough to raise the alarm in the parent company. A total of 5 export distributors of Caltrex India backed up and refrained trade with the company leading to a monthly loss of $ 3,000 per dealer average on invoice. Dealers have also started quitting on the pretext unclear to the company. Between January to April, company lost 19 dealers, 43 dealers picking up less volumes and 104 dealers putting pressure threatening withdrawal of company's products. Mr. Gopalswamy personally went for the market visits but did not found anything concrete to come up with about the declined sales. In fact the few feedbacks that he received from the dealers he found that price hike is justifiable and also that new lock system based technology has made the brake box design compact than ever and secure too. However, one remark that he got from an export dealer was *"…company is only looking after at adding value to the product but not to them who are taking this value ahead to the next level".* Mr. Gopalswamy interpreted this as different story from the present cause of declining sales and assured the distributor incentives and margins in future. Caltrex India did not know where they went wrong – the product pricing is okay; and so the beautiful compactness of design.

The company decided to hire a technical consultant and a marketing analyst to probe into the matter.

Below here are given the excerpts from the reports of technical consultant and marketing analyst.

Report of Technical Consultant

Mr. Jayachandran, technical consultant, working with SIAM, was deputed for this task. He presented the findings within 15 days. His report outlined the fact that most of the dealers and distributors working for the company could not understand why company changes the product design so frequently. The change in design brings abrupt changes in the market demand-supply patterns, and confuses the dealers. The demand for older specifications still exists while the company has abandoned its manufacturing. The lacking areas pinpointed in the report emphasized company's failure to involve these dealers and distributors in designing 'so-called' user-oriented designs and lack of innovativeness in offering cost based competency through streamlining of process and not the product only.

Report of Marketing Analyst

Mr. P. Burman, a freelance marketing expert with over an experience of 23 years, was appointed to uncover the unclear pretext about declining sales and product competency of Caltrex India while the overall industry sales for brake lining components of competitors grew at 2 percent in comparison to last year and competition arena getting wider with the entry of two new players in the segment. *Aksimo Automotives* of Japan and *Glosun Works Inc.* of France were the potential entrants.

Mr. Burman unearthed that the company made no significant product differentiation but over-emphasized compactness. The company suffered marketing myopia syndrome resulting in cannibalizing of own product lines. It did not worked on the lines of – what companies want and rather went upon to present a costly 'cost structure' for the compactness in the name of product development. Besides company also need to work out on designing a direct market representation plan with dealers and distributors.

Finally the report of Mr. Gopalswamy.

Report of Product Manager

Mr. Gopalswamy also did some homework to unlock the mystery based on these reports. Based on the reports of technical consultant and marketing analyst, Mr. Gopalswamy presented his findings contradicting and countering the reports.

His report quoted that only 7 of the dealers and distributors have ever given any suggestion to the company in the last six years on their products, which are rather more in context of finding ways to improve costs, margins and incentives to them and not in terms of technology. The company also has feedback mechanism but such feedbacks are rare and unusable. Therefore dealer opinion may not be significant in developing products. Further, the report justifies the costly 'cost structure' that the company recently introduced on the premise that company spends more than 19% of total sales on training and health facility for its employees which is more than a double of what we spend on R&D (8% of total sales), therefore 11 percent increment in costs is still less with this point of view. *"Moreover, the design we offer, nobody have ever though of developing. We yearn for skimming therefore."* He said.

Mr. Gopalswamy also advocated that company has high product differentiation in terms of appearance *("we have smallest of designs!")* that can easily be recognized in the market place. Further our differentiation is cost focused as well, being the premier global brand in the brake box components. *"We do have significant product based differentiation and we maintain that too".*

Exhibit I: Product Line Features and Descriptions

S. No.	Product Lines	Features/Description
1.	Brake Lining	Totally alloy-made with coatings which is: a) Durable nearly 3 times then ordinary ones b) With noise reduction (NR) system c) Available with or without asbestos versions
2.	Brake Pads	a) Material: semi-metal, carbon fiber and ceramic fiber b) Available for 1,000 vehicle types c) Allows for sensitive braking d) Proper hardness e) Less dust f) Noiseless
3.	Brake Plate	a) Single layered, Alloy sheet made, heat resistant
4.	Brake Drum	a) Compatible: all vehicle types b) Alloy-lead made, Brass coatings c) 8 points with 1 inch thick diameter
5.	Brake Parts and Spares	a) Includes sprockets, suspensions, brake shoe and springs b) Suits all vehicle types except farm tractors c) Available separately
6.	Brake Pump (partially outsourced)	a) Fuel injection based pump technology rendered through European suppliers b) Not a major product line of Caltrex, uses it as product support to overall brake system family

Source: *Sales Catalogues of Caltrex Mechanicals*

Exhibit II: Summarization of Gate Description for Product Development at Caltrex

Gate 1 ⟶	Gate 2 ⟶	Gate 3
i. Idea penetration and creative instrumentation	v. Design Prototyping	ix. Scaling commercial viability between manufacturing phases for production time and cost estimations
ii. Technology assessment and market indications	vi. Process Notes	x. Inventory labeling and dispatching
iii. Process streamlining	vii. Dimension measurement and void filling	
iv. User centered division for engineering visibility	viii. Testing on functions	

Source: *Development Process Charts at Gate Units*

Exhibit III: Some Product Based Terms

Brake Lining

A heat-resistant friction material (usually asbestos) that is attached to the brake shoe (either riveted or bonded). When the shoe is pressed against the brake drum, the lining grabs the inside of the drum, which stops the vehicle and also prevents the drum and the shoe from wearing each other away.

Anti-lock Brake System

A device which senses that one or more of the wheels are locking up during braking. It monitors the rotational speeds of the wheels and reduces hydraulic pressure to any wheel it senses locking up. It is controlled by both mechanical and electronic components. When you apply the brakes, the ABS will regulate the flow of brake fluid being delivered to the brake calipers. It must be remembered that a wheel cannot be steered unless it is rolling; so if the wheel is locked up, there is no steering control. By the use of electronic computers, the brakes rapidly alternate (at a rate of 30 times per second) from full pressure to full release. This process will also alternate from the left-front wheel and the right-rear wheel and switch to the right-front wheel and left-rear wheel. In this way both maximum braking and maximum steering control is allowed during braking.

Source: *Company Manual on Technology Index and References and Operator's Manual*