Glowtronics – A strategic turnaround

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Abstract

Small &Medium Enterprises (SMEs) form the backbone of the Indian manufacturing sector and have become the engines of economic growth in India. SMEs in India constitute 95% of all industrial units, produce 40% of the value added gross industrial products, and employ 45% of the nation's total labor force. Their contribution to the employment generation in the Indian economy is to the tune of 60-70%. In addition, small business enterprises play the pivotal role of introducing innovative products and services to the market. Most SMEs witness varied business challenges during their lifetime. The strategies adopted by them either have taken them to the heights of successes or pushed them to failures. Yet, many have shown the resilience to bounce back to take on the competitive challenges of the market and emerge victorious. Glowtronics India Pvt Ltd., (refered to as Glowtronics, from here on) situated in Mysore is one of the few SMEs in the country that has seen the ups and downs of an SME and managed to create a niche for itself in the SME segment. The 3Ps (Purpose, Passion and Perseverance) that stand richly embedded in their organizational work culture helped the company to sail through difficult times and emerge stronger. Glowtronics started its operations with the manufacture of the electron gun that is used for the cathode tube used in televisions. Glowtronics began its organizational sojourn in 1986 when the consumer was in a television-buying spree attracted by Doordarshan (the state-owned all-in-one TV Channel) that made its telecast available in all parts of the country. This case study captures the trials and tribulations of Glowtronics from its inception to its metamorphosis as a dominant player in the electronics-manufacturing field pioneering many first generation innovations. At one point of time, the company was in doldrums but came out of it unscathed; carving out strategies that enabled it to perfect the art of competitive advantage facilitated by sound strategies and corporate financial policies.

Keywords:Innovation, Blue Ocean Strategy, Strategic Financial Management

The Convergence – Threat to Opportunity!

"That seemed to be another opportunity in the form of a threat" said Mr. Vasu, in his inimitable style. Mr. Vasu is associated with Glowtronics promoted and managed by Dr.Alok Gupta from its inception since1990. Glowtronics was founded on the cherished belief that "all our products are manufactured for the first time in India". Looking back at Glowtronic's sojourn over the past twenty-five years, Mr. Vasure collected the trials and tribulations that characterize the fascinating journey of this company. The company started with the manufacture of Cathode and Heaters that have been used in Monochrome Cathode Ray Tube (CRT). CRTs have commercial application in television sets and computer monitors. The public sector giant, Bharat Electronics Limited (BEL), having spearheaded the indigenisation of critical components of electron guns which is the heart of CRT under visionary leadership of Mr.K.M.Karumbiah, General Manager. Mr.K.M.Karumbiah started the activity of joint development in co-operation with private sector. As a part of this activity Glowtronics was set up with a MOU with BEL with a clear understing that if product is right and price is competitive BEL will buy the product. This is where the foundation for technical challenge started. BEL also in a way started Given the high rate of technological delinquency that is characteristic of products in this space, Glowtronics has perfected the art of innovation by building competencies in products that have found highly discerning clients over the years. Glowtronics is a single source supplier of its products to various customers all over the world because of ethics followed by it.

The growth story of Glowtronics stands testimony to the growing breed of Small & Medium Enterprises (SME's) that are ready to meet the challenges of the resurging Indian economy. SME's derive their competitive strength from size, focus, and continuous innovation. They are also uniquely placed to derive maximum benefits from focused client engagement and superior customer service. A superior client relationship ensures that even during tight economic conditions, there are sufficient client orders to remain unscathed from the consequences of depressed economic sentiments.

Introduction to Glowtronics – The Company

Glowtronics Pvt. Ltd. was incorporated on 27th January 1986 was allotted two Acres of land by Karnataka Industrial Areas Development Board (KIADB), a wholly owned infrastructure agency of Government of Karnataka, entrusted to promote rapid and orderly development of industries in the state. Glowtronics setup and built the necessary infrastructure for the plant, which was inaugurated on the 13th December 1988. The short-term and long-term financing requirements were financed by State Bank of India (SBI). In the subsequent years, KIADB allotted an additional 8 acres of land to Glowtronics that provided an additional impetus to its thrust for growth.

The Product Line

The product development at Glowtronics has adopted the ideological cycle - from concept to delivery. Glowtronics has four major product lines: Emissive Products (Oxide Cathodes & Heaters and Dispenser Electrodes), Precision Metal Parts, Micromotion (Micromotors & Gearboxes), and Medical devices and components. The diversified product line has enabled Glowtronics to develop a distinctive competitive advantage for each of the products.

Dr.Alok Gupta a visionary in Technological Development has built in in house R & D testing facility to enable to carry out development of new products by installing various critical expensive testing equipments which include the following:Testing facility in simulated condition for Cathode & Heaters, Micro-Hardness Tester, Universal Testing Machine (Instron), Fisher Sub-Sieve Sizer, Surface Roughness, Roundness Tester, Tool Maker & Video Microscope, Environmental, Optical Pyrometer caliberation set up and Vibrator.

Tracing the roots of the Strategic turnaround

In 1986, Glowtronics entered into a Memorandum of Understanding (MoU) with BEL for the manufacture of Cathodes and Heaters that were to be used in Monochrome monitors. This was part of the indigenization drive was prevalent which was an out of box thinking in the country during that time. The operations started with an initial investment of around INR 16.5 million consisting of debt capital of INR 12.5 million and an equity capital of INR4 million. To finance the short-term financing requirements, the company raised working capital to the tune of INR 9 million. The entire debt and working capital were financed by the lending leader, State Bank of India (SBI). The story of success and sustenance of Glowtronics can be traced back to the critical year of 1989-1990 when company took a decision to align itself in the industry with the major manufacturer of tube by taking up a job work for assembly of electron gun instead of competing with the customer. This helped the company to stay in business.

The raw material for the production of the Heaters for assembly of electron gun that was supplied by a Japanese company stopped supplies and entered into collaboration with an Indian company for technology transfer for heaters and cathodes. The emergent challenge following the supply constraint drove Glowtronics to indigenize this critical raw material required for the production of Heaters for electron gun. In the first year of its production, Glowtronics successfully staved off the challenge and earned decent profits, declaring its maiden dividend. To satiate the increasing demands of production in 1994-95, Glowtronics established its second production plant, Unit-2, in close vicinity to its first plant–Unit-1.

In the year 1999-2000, Glowtronics ventured into the development of non-critical high precision metal parts for the colour electron gun as the monochrome CRT market was going down at a rapid pace this helped to expand its product portfolio. The move proved to be wise strategically as company was working with the existing customer for known product. To augment its production competency, Glowtronics bought equipment from the Phillips Sittard plant, Holland. To this day, Glowtronics continues to manufacture the color electron gun catering to high-value customers despite the decline in demand over the years. Serendipitously through their informal contacts in 2002, Glowtronics managed to bring into its kitty two new clients for their Micromotion products.

Strategy: A firm which can provide a solution to a problem will be able to obtain new business. A satisified customer is the most rewarding person since he brings in many more new customers.

Quality as the curtain raiser

For Glowtronics, research & development (R&D) was embedded in its DNA because of its quest to indigenously manufacture the raw material required for the production of monochrome electron gunHeaters. Right from the beginning, Glowtronics realized the need for superior capabilities in R&D. This led to the establishment of an in-house R&D department. The department is recognized by the Department of Science & Technology, Government of India since 1992.

In 1999, Glowtronics developed the technology and acquired the necessary equipment for the manufacture of Dispenser Cathode. This development was incorporated in their website leading to an enquiry from a company in Japan, which later became its client and placed orders for the product. The collaboration went one step further when their Japanese client visited their production unit to develop a new product. These developments lead to a patentable product and process. This new development contributes to Glowtronics' both top line as well as bottom line.

Foraying into Blue Ocean – The Medical Industry

During the year 2009-2010 (this was taken up during June 2011) over 76% of the company revenue came from the CRT business – Cathodes, Heaters and Metal parts for colour picture tubes. But with the advent of LCDs and LEDs for display, the production of CRTs came down that saw CRT revenues fall to 56%, which was still substantial by any standard.

In 2009, Glowtronics initiated a strategic maneuver by diversifying into the manufacturing of medical equipments. The requirement of the medical device industry,though low in terms of numbers, is high in terms of the technology with the involvement of multiple branches of engineering. The medical device industry with its multiple irritants made the entry of any firm daunting. The journey of Glowtronics in the medical device field started with a burning desire to enter to a filed where recession do not really effect the bottom line Glowtronics started to manufacture components required by an American corporation for its medical devices. This product, during the year 2010, has contributed to revenue of INR 12 millions for Glowtronics.

Mapping Strategy at Glowtronics

The core competence of Glowtronics lies in working with refractory metal and making components for electronic and medical equipments. In addition, the strength is in precision assembly work. It is useful to appreciate the operations of Glowtronics from the perspective of a typical strategic model as described below.

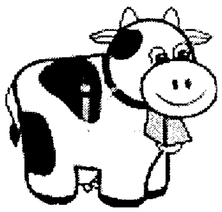
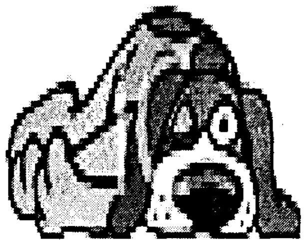
Figure 1 refers to the mapping of the Quadrant modeled after the Boston Consulting Group (BCG) Model.

The BCG model is a portfolio management tool and is used in the product life cycle theory. The theory propounds the categorization of a company's products based on the products' strategic utility.

The BCG Model is based on the factors that relate market share and market growth. Market share is commonly understood as the percentage of the total market that is serviced by a company, which is measured either in revenue terms or unit volume terms. The higher the market share, the higher the proportion of the market the company controls.

For Glowtronics, higher market shares have traditionally translated into higher revenues. This assumption is based on the idea that, Glowtronics having been in the market for a long time, had the opportunity to derive lessons to remain profitable, and enjoy the benefits of economies of scale. Although this was seen as a lucrative proposition, Mr Vasuhas always asked that one question to himself - "Should one be investing additional resources into a particular product line just because it is making more money?" The answer that Mr. Vasu, thought was "not necessarily!" This is where market growth came into play for Glowtronics. By contrast, competition in low growth markets is often hostile, and while you might have high market share now, it may be hard to retain that market share without aggressive discounting. This makes low growth markets less attractive.

Figure 1: BCG Model

Star - Micromotors **ESP (Electro - Surgical Products)** 	**Question Mark - Dispenser cathode** 
Cash Cow - Oxide Cathode Precision product (CRT colour) 	**Dogs** 

Understanding the Matrix for Glowtronics scenario

The Boston Matrix categorizes opportunities into four groups, shown on axes of Market Growth and Market Share. Glowtronics has a balanced portfolio of products looking at both high growth products and low growth products.

Dogs

Low Market Share / Low Market Growth

Surprisingly, Glowtronics did not have any product in this quadrant of the matrix. In other words, it does not have products where it could end up having a low market share due to economies of scale like their bigger counterparts.

Cash Cows

High Market Share / Low Market Growth

Here is where Glowtronics is well-established in its product, viz., cathode & heaters electron gun for colour tubes. Although new opportunities can be exploited for its cash-cow products, it's only worth expending a certain amount of effort, because the market isn't growing and the opportunities are limited.

Stars

High Market Share / High Market Growth

For Glowtronics, its Star product is the **micro-motors** that are used in building special purpose machines for high end application. Here they are well-established, and their growth is exciting. There should be some strong opportunities here, and if Glowtronics works hard, it can realize those opportunities.

Question Marks (Problem Child)

Low Market Share / High Market Growth

For Glowtronics, these are the opportunities that do not have clarity and direction right now. Their product such as the dispenser cathode is not generating much revenue right now because they do not have a large market share. But, they are in high growth markets, so the potential to make money is there. Question Marks might become Stars and eventual Cash Cows, but they could just as easily absorb efforts with little returns. Glowtronics needs to give these opportunities serious thought as to whether increased investment is warranted.

Thus, Glowtronics in a way had forayed into uncontested markets with innovative products for niche segments, there by consciously following the Blue Ocean Strategy (BOS). This was to pursue value innovation and achieve strategic transformation. BOS is to create uncontested market space and make competition irrelevant. A new demand in the market is created and captured. Blue oceans are not about extension of existing product lines or about technology innovations per se. The most important aspect of BOS is to pursue the strategy of differentiation and low cost in parallel. Glowtronics utilized this strategy to the hilt

Strategic Financial Management at Glowtronics

The operations of Glowtronics have been guided by prudent financial policies enabling it to survive the on slaught of economics swings and complement the core business operations.

Capital Structure

The firm has a fairly simple capital structure as suitable for organizations in the SME segment. The company started its operations with an initial equity of INR 4 million supported by term loans and bridge loans. Since 2003, the firm has been debt free primarily relying on internal accruals generated from the business operations for expansion requirements.

Hedging

Given the limited exposure to foreign markets, the firm has not dabbled with fancy derivative products to hedge against risks arising from fluctuations in foreign exchange markets. As Mr. Vasu puts it "we do not believe in playing financial games".

Working capital

The firm has believed in minimum investment in working capital. Glowtronics has maintained a competitive inventory turnover at 11 days. In dealing with external customers, the firm does not consider letter of credit (LC) leading to lesser 'stress' on existing balance of debtors.

Capital Investment

The firm primarily employs Return on Investment (ROI) as the parameter to gauge the effectiveness of capital projects. Investment policies seek to establish a clear linkage between the investment and sales that is likely to be generated.

Management of Overheads

The firm seeks to trace overheads to 'man-days' by computing cost per man-day (defined as labour bill for previous year divided by number of man-days). Linking the cost components to labour (direct and indirect) has enabled the firm to exercise superior cost control.

Treasury Management

While the firm does not have a formal system of treasury management in place, earnings are invested in bank deposits that earn returns similar to a fixed deposit.

Risk Management

The firm bills imports in Japanese Yen and exports in US Dollars/ British Pounds/ Euro. The strategy to employ different currencies has enabled the firm to mitigate risks arising out of fluctuations in exchange rates.

Organic vs Inorganic route

The firm does not intend to grow via inorganic route. Given the dynamics of the industry, green filed investments are best suited to achieve growth.

albeit not really branding the strategy as in the BOS framework, since BOS was not even discussed during the early 90s. For Glowtronics, the micromotors and the electron guns were existing products in the market. However, the opportunity for Glowtronics came in 1991, as mentioned earlier in the case, when a Japanese company halted the supply of the raw material required for manufacturing the product.

USP for Success

Managing the diversification in its product line was possible for Glowtronics due to clarity and direction from the top management which has consistently communicated the goals to the team members and the stakeholders in a transparent manner.

Managing change is not easy in any organization. Glowtronics deriving its strength from strong organizational culture built on solid technical and commercial foundation has been able to see the change – from the CRT production to the medical equipment production - ahead of the market conditions.

Glowtronics has always managed and nurtured relationships with its clients very well. The new product line in the medical equipment has derived great degree of appreciation from new clients. Glowtronics has been able to impress its clients with its superior capability on delivery, technical precision and on commercial terms of the contract. Adherence to strict quality standards has helped the company to complement this strength.

Glowtronics engages its stakeholders in every step and their ideas and suggestions are taken into consideration before effecting any changes. They are the prime movers of the 'change process'with the top management playing a facilitating role. Glowtronics has always believed that "change is the only constant".

Glowtronics has been successful because of the timely changes that it incorporated in its product lines, innovation in its processes and products, and by seizing the right opportunities that have come in its way. This has been possible due to the right strategic moves from the top management.

Dr.Alok Gupta &Mr.Vasu - ever vigilant to the market forces – alway look for opportunities in the threats that the market poses for the products manufactured by Glowtronics.

Teaching Notes

Case Synopsis

Small &Medium Enterprises (SMEs) form the backbone of the Indian manufacturing sector and have become the engines of economic growth in India. SMEs play the pivotal role of introducing innovative products and services to the market. All SMEs witness varied business challenges during their lifetime. The strategies adopted by them either have taken them to the heights of successes or pushed them to failures. Yet, many have shown the resilience to bounce back to take on the competitive challenges of the market and emerge victorious. Glowtronics India Pvt Ltd., (refered to as Glowtronics, from here on) situated in Mysore is one of the few SMEs in the country that has seen the ups and downs of an SME and managed to create a niche for itself in the SME segment. The 3Ps (Purpose, Passion and Perseverance) that stand richly embedded in their organizational work culture helped the company to sail through difficult times and emerge stronger. Glowtronics started its operations with the manufacture of the electron gun that is used for the cathode tube used in televisions. Glowtronics began its organizational sojourn in 1986 when the consumer was in a television-buying spree attracted by Doordarshan (the state-owned all-in-one TV Channel) that made its telecast available in all parts of the country. This case study captures the trials and tribulations of Glowtronics from its inception to its metamorphosis as a dominant player in the electronics-manufacturing field pioneering many first generation innovations. At one point of time, the company was in doldrums but came out of it unscathed; carving out strategies that enabled it to perfect the art of competitive advantage facilitated by sound strategies and corporate financial policies.

Exhibit 1(Reproduced from *glowtronics.com*)

Milestones in the History of Glowtronics Pvt Ltd.,

Jan 1986	Company incorporation.
Apr 1988	Production of Emissive Products (Cathode & Heaters for T.V. Picture Tubes & CRT's).
Feb 1992	Research & Development recognized by the department of Science & Technology, Government of India.
Dec 1992	Heaters & Cathodes for color T.V. Picture Tubes.
Apr 1993	Start of Associate Company Mysore Wifiltronics (P) Ltd.; Floppy Disc Drive: Read -- Write - Erase Heads.
Feb 1994	TURP Loops for Urological surgery. (Wifiltronics)
May 1994	Special Cathodes & Heaters for Avionics.
May 1995	Obtained I.S.O 9001 accreditation.
Jun 1998	Dispenser Electrodes for Arc Lamp applications.
Jun 1999	Dispenser Cathodes for CRT applications.
Jul 2000	Precision Metal Part production for Electronic & Electrical applications.
Apr 2001	Assembly of Transducer for Ultrasonic Diagnostic Equipment. (Wifiltronics)
Sep 2002	Micro Motion Products: Micro -Motors & Micro -gearboxes.
Sep 2003	P-5 Gearboxes (Pear shaped Micro - Gearboxes 0.6 Nm Torque).
Apr 2004	Composite Dispenser Electrodes for Arc Lamp applications.
Nov 2006	P-10 Gearboxes (Pear shaped Micro Gearboxes 1.2 Nm Torque).
Feb 2007	Special Actuator assembly for HVAC application.
May 2007	Brushless DC motor 35-Watts.
Aug 2007	GloTec Industrial Training Center
Jan 2008	R-3 and R -16 Gearboxes (Rectangular Gearboxes)
Feb 2008	Special Electrical Switch for Medical application.

Pedagogical Objectives and Target Audience

The pedagogical objectives of the case are as follows:-

- To understand Glowtronics: a strategic player in electronic manufacturing industry
- To understand consumer electronic market and competitors
- To understand value-based technological innovation involving the stakeholders of Glowtronics
- To apply and appreciate managerial principles as envisaged for an SME
- To appreciate the application of strategies from a cross-functional perspective

Participants of the second year – preferably in a strategy-oriented course - would be the ideal target audience to run the case in class. Ideally the case would be best used in financial management, innovation, and marketing strategy. The learning objectives from the participants' perspective may be reckoned as follows:-

- To analyse the BCG Matrix (and its application at Glowtronics).
- To understand the Blue Ocean strategy and its implementation at Glowtronics, to gain market
- To expose to the real life business challenges involving cross-functional managerial processes

Teaching approach - Variations for Teaching the Case

a) The class session could be employed in discussing issues covering the key features of the case as identified by the participants.

b) The instructor may opt to emphasize on one or combination of issues wherein participants both individually or collectively analyze problems, and suggest alternative courses of action.

c) Debates and Role Plays may be employed to gain different perspectives from participants who could be assigned different roles. The following are the illustrative issues that could serve as the starting point.

- "Glowtronics did not use the Blue Ocean Strategy".
- "There is not perfect fit of the BCG Matrix for the Glowtronics products line."
- "Legislation should be enacted to regulate the sale and distribution of exotics."

Analysis

The case would be too small to illustrate the varied facets of strategy. Strategies as exercised in other markets and domain areas could be complimented along with this case. As an example, the framework involving the Blue Ocean Strategy (achieving high growth and profitability in an organization by creating new demand in an uncontested market space) could be employed. This concept can be very well brought out in the class using this case study. Participants can also be encouraged to develop cross-functional sensitivity by associating strategic objectives with well adopted financial structure. The case will also serve as an excellent tool to inculcate decision making ability among participant as it involves choosing among alternative courses of action (example:-choosing among the alternatives between product/service differentiation and lower cost).Application of the BCG quadrant to slot the products of Glowtronics can be further refined. Participants could also be asked to redefine the products in the BCG matrix.

Regardless of how the case is employed, it will certainly have greater impact if participants are able to relate it to courses in strategy and finance. Users of the case are encouraged to seek out other examples of SMEs that may have followed a similar strategy.

Feedback

While discussing the case,typically participants tend to offer different perspectives on the front of marketing. The authors have found that the stakeholders of Glowtronics maintain the same culture of innovation and consultation for furthering the interests of the company.

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