Starion entrepreneurship case analysis

Business, Entrepreneurship

M3786 NEW VENTURE PLANNING SAMPLE CASE ANALYSIS REPORT STARION ENTREPRENEURSHIP SAMPLE CASE ANALYSIS REPORT Starion Instruments, headquartered in Sunnyvale, CA is a private company with core IP assets based on the exclusive license of groundbreaking medical research in the field of laser tissue welding. Starion hopes to revolutionize the electrosurgical field with the introduction of products like its cautery forceps used for cutting and sealing (cauterizing) tissue. The overall annual market for these types of medical devices is in excess of $1 billion.

Furthermore, Starion’s promising IP and continued researchgoalswill enable it to gain a significant foothold in the worldwide medicaltechnologyindustry with sales reaching $150 billion annually. The foundation of Starion’s IP lies in the hands of Dr. Michael Treat’s research. In the 1980s Dr. Treat and Dr. Larry Bass, a plastic surgeon resident at Columbia Presbyterian, started experimenting with lasers in surgery. With a humble beginning the two surgeons worked from Columbia Presbyterian’s 17th floor lab on their innovative research.

Together, these two pioneers invented the field of laser tissue welding – using thermal energy to rejoin tissue severed in surgery. However, this technology remained uncommercialized for several years after its initial discovery. Shelly Monfort, a Stanford-trained engineer, began her entrepreneurialcareerin 1986. With a background in R&D on medical devices as well as start-up experience, commercializing those devices, Ms. Monfort and two engineers, Ken Mollenaur and George Hermann, were involved in the creation, funding, and exit of at least 6 surgical device companies from 1990-1996.

Ken Mollenaur maintains experience designing and building medical prototypes. George Hermann possesses extensive experience navigating the medical device approval process; working with the major regulatory bodies in the industries. By June 1988, Ms. Monfort had signed a license with Columbia; Starion Instruments could now begin building a staff and a product to bring to market. With their exclusive licensing deal in place, Dr. Treat left Columbia for Starion’s California headquarters and began developing the product.

In October 1999 Starion instruments, represented by Dr. Treat, made its debut at the American College of Surgeons Conference, the single most important industry event for people who would buy and use the product. At the time, the company’s goal was to raise $750, 000 in capital. Ms. Monfort assembled $2 million from private investors along with a pair of venture capital firms. At the time Starion’s valuation was $7 million. This was a crucial point for the company. Success orfailureis often based on an initial market foray.

The direction chosen by management in this situation had an irrevocable effect on the company’s overall performance. A capital infusion of only $750, 000 severely limited the company’s marketing and development capabilities and was a gross underestimation of the company’s capital needs; a clear representation of Ms. Monfort’s inexperience. Furthermore, the company’s additional capital requirements were highlighted by the investors’ willingness to infuse a $2, 000, 000 round when only solicited for $750, 000. To Ms. Monfort’s credit it was her colleague and mentor, Dr.

Thomas Fogarty, a legend in the surgical world, who insisted on the additional capital. The company planned to go to market with a package consisting of single use disposable forceps and a disposable battery pack. The forceps would carry a price tag of $410 and the battery pack would list for $39. The effort was directed toward an open surgery application. Open surgeries accounted for approximately 80% of procedures performed at the time. Starion planned to eventually expand to laparoscopic devices once it gained additional market share.

An important aspect of Starion’s strategy was to market its product as not only a superior tool as far as results, but also to highlight the simplicity and cost effectiveness of its offering. Surgeons, the principal buyer in this space, are known to be fairly innovative, willing to try new things. However, it is only with repeated use that they gain skill with a given device. Therefore, it is critical that they see not only a cost advantage, but a significant increase in product performance in order for considerable adoption to take place.

Starion’s choice to focus on the core buyer requirements magnifies their intimate knowledge of the space and contributed greatly to the company’s overall success. The decision was made to concentrate on an open surgery strategy. Early adoption, particularly for a small fish in a big pond, is critical to any start up. This direction, spearheaded by management, was a deft decision for several reasons. The customer base in this field consists of an end user with a complex hierarchy and buyer process. However, it is ultimately the end user’s decision which makes or breaks a product in this ield. Therefore, the decision to launch the product for use in open surgeries as opposed to laparoscopic procedures vastly increased the attractiveness to

the early adopter base. The open surgery tool strategy enabled doctors to rely on backwards compatibility (the ability to simply fall back on the tried and true cut and suture method), another key point with “ experimental” tools and methods. Prior to Starion’s laser tissue welding breakthrough, the most common electrosurgical tool was the monopolar device, also known as the Bovie device.

With this technology, the patient is wired to a grounding pad that provides a path for the electrical current to flow. The surgeon uses an electrode to pass a high-frequency electrical current through a patient to cut and cauterize tissue in a selected area. The Bovie requires a generator that costs between $7, 500 and $10, 500 a year. In addition, each operation requires disposable (one time use) grounding pads and electrodes, whose combined cost is 5 to 6 dollars per procedure. The disadvantages include (relatively rare) situations in which the device causes burns to the patient at the side of the grounding pad.

Additionally, the Bovie’s high energy output can interfere with the ever growing mass of electronic equipment in modern operating rooms. An alternative to the Bovie device is the UltraCision, also known as the harmonic scalpel. This device uses ultrasound to generate the heat needed to cut and seal tissues. Ethicon Endo-Surgery Inc. a Jonson & Johnson subsidiary owns UltraCision. Starion estimates that the ultrasound based product has annual sales of approximately $100 million. Like the Bovie device, the UltraCision system requires a reusable power supply, which costs approximately $15, 000.

The system also uses an electrical cable that costs $630 and must be replaced after approximately 100 surgeries. In addition, single-use tips that cost approximately $325 are also required. Given the relatively high degree of cost associated with marketing medical technologies, Starion pursued a strategy in which it would segment a large market and avoid going head to head with its competitors. Due to its small size and relative weaknesses, Starion was forced to parse the market even further deciding to promote its technology specifically for use in a single procedure which would greatly reduce the overall cost of their product launch.

The variable costs, excluding sales commissions, for both the battery and forceps were projected to equal about 40% of the sales price. Fixed costs, excluding R&D, were expected to total $1. 1 million in the first year of operation and $1. 65 million in the second year. R&D for the first year was projected at $1. 25 million and $1. 45 million for the second year. Given the industry standard, this team had the necessary components for a successful start-up. The initial engineering and development of a product like Dr.

Treat’s is best done in a small workshop by passionate and dedicated serial entrepreneurs. However, the team’s inability to surrender the reigns of the company inexorably inhibited the firm’s future growth. Conversely, the small, dedicated team was able to react dynamically to the market positioning their product with care in a segment which allowed a gain in market share. This short-term success may well translate to continued development; however, the degree of future shareholder value is limited by an order of magnitude equal to the founder’s shortsightedness.

In the medical device field, there are some significant barriers to entry; the combination of patents, expensive/extensive clinical trials and research in conjunction with strict federal government oversight can overwhelm smaller companies, and help protect established players against competition. The FDA is the primary regulator of medical devices, and its mandate is to insure that the devices that reach the market are safe and effective. The medical device industry is populated by a small number of major device manufacturers and diversified medical companies in addition to the large number of small companies.

Dominant players in the industry include: Johnson & Johnson, Baxter International, Becton Dickinson, Medtronic, Guidant, Boston Scientific, and U. S. Surgical (a unit of Tyco). The combined market capitalization of the industry leaders mentioned is approximately $300 billion with the smallest just over $9 billion (Source: Bloomberg). Medical products and services companies invest around 8% of annual revenues in R&D, this compares to 3 to 4% invested by U. S. manufacturers (Standard & Poors). However, the true path to innovation in this industry is through mergers and acquisitions.

Due to overwhelming development and production costs coupled with a large upfront marketing outlay, partnership and acquisitions are the industry norm, not the exception. Even well capitalized companies will often choose the route above, rather than face the huge barriers that exist in this market. The Four P’s: Product, Promotion, Protection and Price. Product – Revolutionary technology. Promotion – Combination of in-house and franchised channels. Protection – Strong IP backed not only by the company but by Columbia. Price – 91. 45% savings…Speaks for itself.

Further data was not supplied however the following is an example of some of the continued financial analysis we would conduct. Financial analysis: Profit ratios: Gross Profit Margin = (Sales revenue – COGS) / Sales Revenue Net Profit Margin = Net Income / Sales Revenue Return on total Assets = Net income available to common stock holders / Total Assets Return on stock holders equity = net income available to common stock holders / stockholders equity Liquidity Ratios: Current Ratios = Current Assets / Current liabilities Quick Ratio = (Current assets – Inventory) / Current liabilities Inventory Turnover = COGS / Inventory

Leverage Ratios: Debt-to-Assets Ratio = Total Debt / Total Assets Debt-To-Equity Ratio = Total Debt / Total Equity Cash Flow Analysis: Determine appropriate debt levels, payout periods and additional analysis to confirm liquidity. Net Profit Margin = Net Income / Sales Revenue First Year: -4, 639, 464/4, 000, 000= -1. 16 Second Year: -689, 333/8, 000, 000 = -. 086 Gross Profit Margin = (Sales revenue – COGS) / Sales Revenue (4, 000, 000 – 1600000) / 4, 000, 000 = 0. 6 Pricing strategy: Pricing is currently very aggressive and sales strategy prudent.

Initial management was executed properly, however it is likely that changes will need to be made in the near term to achieve significant market share. Partners: Strategic alignments are mainstays in this industry and should be aggressively pursued. Strategic investment; merger; acquisition. Intellectual Property: IP is an essential aspect of any medical device company given the simplicity of the concept; the device may come up against some protection issues. Early indications seem to support the strength of the company’s IP, however it is certainly a concern which warrants further investigation.

Note: Both Starion and Columbia would be behind any major IP issue. Given the state of the industry and the unique positioning of the company's IP prospects a partnership/acquisition would be our main point of recommendation in the near term. During this transition it may be prudent to rethink the current organizational structure, with a specific focal point on senior management (when moving to a new phase often times senior management, who were suited for the initial stage or better succeeded by a new team).

RECOMMENDATIONS: Our recommendation consists of three key elements that will drive profitability, continued growth, and increase market share – adding shareholder value. Breakeven and ultimately profitability can be achieved (1) by instituting aggressive pricing to both vendors and sales force, (2) the merger of Starion Instruments with a bigger firm and/or (3) the acquisition of another firm that will allow them to manufacture, distribute, market and sell the product at a cheaper and more efficient manner.

Current State: Currently, Starion is the one of the world leaders on surgical device development. It has expanded worldwide distribution of its proprietary tissue welding technology to physicians in North America, Europe, the Middle East, Africa, and Asia. Last year the Society of Laparoendoscopic Surgeons named Starion Instruments the 2007 Innovator of the Year for the development of its next-generation Tissue Ligating Shears which use its innovative cut and cauterizing technology.

Since the launch of their original Cautery Forceps, Starion has created an entire line of Forceps and Ligating Shears which can all be viewed on their website http://www. starioninstruments. com/products. html. They are still a

privately held company which is astounding given their tremendous success. This is not surprising given the fact that the first time they were offered to be bought out they declined. This has kept theleadershipat the mercy of the owners and founders and will provide a unique company such as Starion the ability to continue providing innovative, cost efficient, and quality