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JML Optical at the Crossroads: Exploring Growth and Exit Strategies of a Family Business

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Abstract. The JML Optical case and related assignments are designed to promote a discussion exploring the potential impact of entrepreneurial motivation and exit strategies on firm growth and strategic change. The case recounts the founding, rapid early growth, and overall success of JML Optics, a company competing in the high potential, rapidly changing optics/photonics industry. It also defines the emerging strategic challenges associated with the optics industry, most notably aggressive low cost Asian competition. The case places students in the position of JML founder and owner, Joe Lubozzo, who must decide both the company's future strategic direction and his own exit strategy.

Keywords: entrepreneurship, exit strategies, management succession, entrepreneurial growth

1. Introduction

Joe Lubozzo is the kind of manager who likes to know the specifics about his business. As president and majority owner of JML Optical Industries, Inc., he still takes time to review the monthly profit and loss figures. They show continued profitability and growth, despite an increasingly competitive market. Joe is not worried, however, he has seen tough markets before and he has always been able to formulate strategies to ensure success.

But this time his decisions may be more complicated. Having grown the company from a basement enterprise to an internationally respected optics supplier, Joe now faces the final stage of individual entrepreneurship – the challenge of fashioning an exit strategy for himself, in this case, without an obvious successor. As Joe considers what direction his company should take in the near future, he must take into consideration his plans for his own future. Joe's personal motivations and allegiances will color the decisions he will make.

As Joe sees it, his most pressing decision centers on the company's future strategic direction. Despite operating in a fiercely competitive global market, JML has thrived for more than three decades. The company has enjoyed consistent revenues and strong profits and margins. However, JML is in a mature market with growing competition. Lower-cost Asian producers now have the technology to manufacture 90% of the precision glass and plastic optics sold in the North American market. Additionally, many customers now perform a higher proportion of their own optical design – a core competency of JML. (Products designed by JML, by their proprietary nature, allow higher margins and limit competition.)

Joe has been considering shifting JML's strategic direction, moving up the value added chain, from supplying and producing traditional precision optics to producing higher- margin optical components. Such a strategy would entail significant risks. Markets associated with high technology optical components have fluctuated dramatically in recent years. The related challenges of acquiring new technologies and market information would require resources and new types of management expertise.

Joe's decisions regarding the strategic direction of JML are tied inextricably to his decisions regarding the direction of his own life. Now in his late 50s, he has begun thinking about formulating an eventual exit strategy for himself. Who will succeed him when the time comes? How will the transition be implemented?

Joe had once hoped that his children would one day operate the company. Although family ties are very important to Joe, his children are not interested in running the business. Moreover, members of JML's senior leadership team are at the same stage in their careers as Joe. They cannot provide a long-term solution to the succession problem.

Of course, selling all or part of the company is an option. But Joe views his employees as part of his family. He is adamant that any transition in leadership, shift in strategy or change in ownership include a stable place for his loyal employees. His commitment to them could limit his options.

The decisions facing Joe are common among entrepreneurs who have matured along with their closely held companies. Joe's decisions will take careful deliberation – something he's become accustomed to over 30 challenging years.

2. Optics and Photonics Industry Defined

The industries that surround the production of optical devices are well over 100 years old and center on a technology in continual renewal. Early optics – eyeglasses, telescopes, artillery sites, etc. – took advantage of natural lighting to observe objects. However, the discovery and development of new light sources such as gas lasers and light-emitting semiconductor diodes, new componentry such as fiber optic cable, and new process technologies such as micromachining have enabled the miniaturization and integration of optical components with semiconductor electronics. These innovations are collectively referred to as optoelectronic or *photonic* components and systems. Photonics can be defined as “the technology of generating and harnessing light and other forms of radiant energy whose quantum unit is the photon.”

Market growth for photonics-related products is increasing dramatically as photonic science creates applications replacing traditional electronics in fields such as telecommunications, consumer electronics, fingerprint recognition, phototypesetting, and in the production and use of computer peripherals, semiconductor equipment, medical products, and many others. Due to the enabling characteristics of photonics and optics, market size estimates vary considerably. Analysts estimate that the total value of photonics-related products exceeded \$140 billion in the late 1990s.² During this period, the telecommunications industry represented the fastest growing and most dynamic market segment.

Precision optics and other optical componentry represent a core element in photonics-based products. These technologies enable the manipulation of light through optical components such as lenses, mirrors, prisms, filters, and beam-splitters. Companies in the precision optics industry design and/or manufacture specialized glass or plastic optical components. The expertise (competencies) required to produce the more common glass precision optics includes cutting, grinding, polishing, coating, and cementing. Manufacturing alternative optical shapes, such as spheres, prisms, and flat surfaces, tends to require different machines and production expertise. Additionally, some firms possess optical design competencies which require skilled engineering. Those firms that design and manufacture optical products tend to command significantly higher margins.

The optical device market is decentralized and fragmented. Companies tend to specialize in alternative optical shapes and value added stages. Various options for specialization exist. For example, some firms specialize in the cutting of glass for optics. Other firms may grind, polish, and coat optical devices of specific shapes. Still other firms design optics, but do no manufacturing. The size of the fragmented and diverse optical device market was estimated at \$2.3 billion in 2002.³ This amount includes both very high volume, inexpensive optics in such consumer goods as VCRs and projectors, and extremely complex and precise optical devices in manufacturing sensor equipment.

A number of trends have impacted the world optical device market over the past few decades. First, the degree of precision required to produce medium to high technology optical devices has dramatically increased. Sophisticated manufacturing equipment and measuring tools are now necessary to compete in the industry. Another trend is the widespread international dissemination of optical production techniques. Optical expertise, which 30 years ago resided only in the most advanced industrial economies, particularly Germany, the US, and Japan, now resides in many East Asian countries – particularly Taiwan, South Korea and China.

The US optics industry has undergone significant changes over the past two decades. Low-cost foreign competition is the most significant variable influencing the structure, strategies and competencies of the US industry. Over the past two decades most low-value-added, high and medium volume optics production has migrated to low-cost Asian facilities. Many US based firms have exited the market, shifted production to alternative products, or gone bankrupt. Today's US industry has adapted to the new environment by seeking new niche markets less impacted by cost factors. Some companies have specialized in niche, medium- to low-volume markets that require difficult and precise optical shapes, characteristics and/or surfaces. Others have sought out profitable niches in optical prototyping that rely on craft manufacturing and quick delivery. Still others have pursued riskier strategies by either integrating high-tech, high-value services such as sophisticated optical coatings or moving into higher-value-added optical component markets. These

niche-based strategies have resulted in a fragmented industry in the US, dominated by small and medium sized producers.

3. Rags to Riches: The History of an Entrepreneur

As a boy growing up in New York City during the early 1950s, Joe's family struggled financially. "We had very little," Joe remembers. However, from an early age, he aspired to be an entrepreneur. His first enterprise was a shoeshine business. "I could always find work shining shoes. We lived near the Bronx Terminal Produce Market and the farmers who made deliveries there wore shoes that were always filthy."

In high school Joe was a vendor selling hot dogs in Yankee Stadium. "It was a good job; my Catholic high school was right next to the stadium."

A tough work ethic opened doors for Joe and gave him a glimpse into a different world. "I always had jobs when I was kid. My uncles were in the fuel oil delivery business in the Bronx. So most summers, after school, and on Saturdays I would help deliver fuel oil, clean boilers and help install oil tanks and boilers. They were excellent entrepreneur role models. They bought huge trucks on credit and delivered oil. They lived very well and each had a Cadillac. My parents, on the other hand, had very little. From an early age, I learned that owning one's own business was a sure way to make good."⁴

Already bent on business ownership, Joe discovered the allure of optics just before his high school graduation. An optical engineer from Fairchild Camera in Syosset, Long Island, met with students who were considering majoring in physics in college. "Frankly I didn't know anything about optics. I just knew a bit about lenses from the physics course that I had taken. I didn't even have a camera at the time. So this beautiful blonde woman, who was maybe 22, came in about 4 o'clock one afternoon and talked to us about lens design." Joe quips, "We didn't care what she was selling, we were sure buying."

The Fairchild engineer was designing cameras for U2 reconnaissance planes. The planes flew so high that the curvature of the earth was combined into optical formulas for the cameras. "It was intriguing to me," Joe says.

The young engineer advised the students to take every optics course available when they entered college. "That was it. I was hooked on optics for the rest of my life – from that one half-hour presentation in my senior year in high school."⁵

Joe majored in physics at the City College of New York (CCNY) in Manhattan and, following the advice of the young optical engineer, he took every optics course the school offered.

Graduating from CCNY with a degree in physics and optics, Joe's worked briefly for Varo Optical in Chicago before being recruited by Ilex, a Rochester, NY, optics firm. Ilex management wanted him to expand into marketing and sales, which appealed to Joe: "I knew the sales people made a lot more than we engineers did. So I came out here and worked as a sales engineer, covering the West Coast and the East Coast of the US."⁶

Joe soon settled in Rochester and was married. His wife, Joanne, worked for Ilex in an administrative capacity and was supportive of Joe's desire to start a business. The couple began saving and four years later opportunity knocked.

In the early 1970s Ilex had significant customer service difficulties. Joe spent several frustrating years trying to change the company's culture and improve customer service – to no avail. He decided create a new venture.

"I had \$10,000 saved in 1972. I thought that amount was adequate working capital, which was very naïve. I said to my wife, 'Now is the time. I believe a few customers will give me an opportunity. Our (Ilex's) deliveries are so late, the customers are very upset, and will likely give anyone a chance right now. I've got friends in the industry who will make lenses for me. I know who to buy from in Japan because Ilex buys from them.' So she said, 'Fine.' Totally supportive, just as naïve as I was."⁷

4. Basement to Boardroom: The History of a Startup

Joe started his business in August of 1972 in the basement of his home near the Rochester airport. "I got orders immediately: \$86,000 of orders in the first day. It was really like shooting fish in a barrel in terms of getting contracts. We had no trouble attaining them."⁸

In 1972, with the support of his wife, Joe left Ilex to operate a private optics venture – JML Optical – that would make use of all the industry experience and contacts he had gained. From a makeshift operations center in his basement, Joe took orders from customers and used subcontracts to fill jobs he was unable to manage in his basement shop. He developed a strategy of obtaining customers and their requisite designs, then outsourcing most of the work either to other local manufacturers or to firms in Japan. At first, approximately 90% of the work was outsourced. He carefully inspected parts produced by subcontractors before shipping them to customers or to the next-stage producer. At first this arrangement worked well. However, demand for Joe's services quickly overwhelmed his basement operation. If JML were to grow he would have to find a new location.

Sometimes timing is everything. Just when he needed it, a site recently vacated by an optics company became available. In April of 1973, he moved his operation to the Wollensak building in Rochester, NY.

Joe purchased much of the optics manufacturing machinery and leased a floor of the building from Optical Gauging Products (OGP), another optics company that had purchased the building. Just eight months after its humble start in Joe's basement, JML Optical had the space and mechanical capacity to continue growing. What he needed were the right people to help him build his business.

Joe immediately contacted Gerry Lynch, a lens designer he had worked with at Ilex. She started a few weeks later. Gerry designed lenses and lens assemblies that were economical to manufacture and cost-effective in their use of materials. JML often sent these designs to manufacturers in Japan in an effort to further reduce production costs. "She is the real key to our success," Joe says. "She designed thousands of lens assemblies that we sold in those early years, particularly for phototypesetting and photocopying. She did a phenomenal job." Today Gerry is a vice president of the company and well past retirement age, but she is still designing lenses on a full-time basis for the company.

To develop a full scale operation, however, Joe required additional key members of the start-up team. On the same day that JML Optical moved into the Wollensak building, Dick Bachelder and Jack Schifano, both experts in optical manufacturing, left Ilex to join JML. Each of these experts possessed knowledge critical to the optical manufacturing process. Dick possessed strong skills in optical centering, coating, and beveling. Jack possessed skills in optical grinding and polishing. Today, Dick is vice president of manufacturing, supervising over 50 manufacturing employees. In early 1974, Mike McCusker joined the company as to increase JML's sales efforts. His responsibilities eventually evolved to include oversight of optical quality and engineering. Today, Mike is senior vice president of sales, engineering, and quality assurance. Several years later, Michael Julian joined JML to oversee finance and purchasing. Today, Michael is senior vice president of Operations and Finance.

Design, manufacturing, and quality assurance represented the critical capabilities required to enable JML for growth. The company's first in-house optical lenses were produced in April of 1973. In the early years, the company produced higher volume, low value added optics. The company's target market would eventually shift to medium volume, higher value added optics.

Although Joe had a full-scale operations center and a strong team, he still faced hurdles. Addressing cash flow issues became his greatest challenge during JML's first decade of operation.

To improve cash flow during the first year, Joe took no salary. He remembers the nightmare of covering payroll every Thursday for those who worked with him. However, with the aid of his family and his wife's family, plus creditors such as Citibank, he met cash flow demands. From 1972 to 1982, JML was a net borrower, though the company was always profitable. After that time, however, the company repaid all its creditors and has since operated with no long-term debt.

Joe's second challenge involved hiring the right people to foster the culture he desired. "It's hard for an entrepreneur. It's hard to set reasonable expectations for others when you have unreasonably high expectations of yourself. So I just expected a little less than I demanded from myself and didn't always get it." Joe notes that he has never had to fire anyone; employees for whom the fit was not right realized it and left before it came to that.

A third significant challenge faced by JML during its initial 10 years came as the result of the high demand for their lens products. JML had established a corporate mantra of customer satisfaction. Sometimes this meant breaking into the soda machine to pay the UPS delivery fees for shipments. Joe placed the company's customers above all else. He would do whatever it took to satisfy their needs. "It was strictly seat of the pants. Fun though. What a rush. A thousand decisions by 10 in the morning."

By the mid-1980s JML had successfully established itself as a national leader in medium technology optics production and outsourcing. Its sales had grown to more than \$10 million by 1984. The company's financial position also dramatically changed during this period. It no longer required bank lines, debt, or auxiliary funding of any type. The company generated significant cash flow and could easily supply the required operational and capital funding.

5. The JML Business Model

JML's success was fueled by a unique "business model" that enabled the firm to co-opt aggressive off-shore competition while providing the highest degree of service to North American companies. The model developed organically and was largely shaped by the business opportunity that enabled JML's rapid expansion. As noted above, the opportunity emerged largely due to the poor customer service provided by many US optics manufacturers. Products were often delivered to customers later than promised and below performance specifications.

The JML business model had three interrelated components: 1.) impeccable customer service/satisfaction, 2.) outsourcing to overseas producers and the development of in-house optical design, 3.) quality and manufacturing expertise.

The centerpiece of JML's success was a commitment to customer service. The company's philosophy from inception was to provide timely deliveries and top-tier customer service that met and often exceeded performance requirements.

JML's supplier relationships represented the second critical component in the model. JML sold medium-volume precision optics, which entailed moderate design and high manufacturing capabilities. Precision optics technology, particularly in manufacturing, was well diffused across the world. From the company's inception, it developed strong supplier relationships with top-tier Japanese and later South Korean and Chinese firms. These firms, while possessing skills to compete with JML at the lower end of the market, lacked the marketing savvy and breadth, brand name, quality control and reputation to penetrate the North American market.

JML's in-house expertise represented the third critical component in the business model. The company's quality capabilities and production expertise developed over time. Initially, JML invested in quality assurance, optical design and testing expertise. These capabilities enabled the company to outsource optical production to overseas manufacturers while performing the highest-margin aspects of the business in-house. Over time, the company developed high-quality, medium-volume manufacturing capabilities. By the early 1980s much of the highest value-added production was performed internally in Rochester, NY. Still, JML continued to focus on the sales and service aspect of the optics value chain. It also provided higher-value-added services, such as optical design, and the most sophisticated optical production.

Its unique business model also enabled the company to stabilize its employment base in a sometimes-erratic market. When cyclical fluctuations reduced demand, Joe would shift production from overseas contractors to JML's Rochester-based operations. In more than 30 years of operations, JML never laid off an employee.

6. Long-Term Strategic Threats and Market Changes

By the turn of the millennium, JML was firmly ensconced as a leader in the approximately \$200 million US market for medium-volume, moderate technology optical devices.⁹ It possessed a wide array of optical design, grinding, polishing, coating, and cementing expertise. JML played a dominant role in the original equipment manufacturer (OEM) market segment. In this segment, the OEM would provide specifications to JML, which would then manage the design, production, and quality assurance of the product. The company's ability to provide optical "bundled value" to customers enabled it to compete in a market that most US firms had exited. Former regional competitors, such as Ilex, Ednalite, Varo and Wollensak, exited the market in the 1980s. By the turn of the millennium, JML's US based competition was indirect and fragmented. Its primary direct competitor was Irvine, California based Melles-Griot which aggressively sought market share in the OEM market. JML estimated that Melles-Griot and JML ranked first and second in the market. Other US-based competition emerged in the form of various small manufacturers with optical capabilities and expertise.

During this period, however, the optical market was once again showing signs of restructuring and change. Joe knew these changes, primarily related to advances in technology, could adversely impact JML's competitive success over the next decade.

Improvements in overseas production and the growth and use of the Internet posed the first threat. As Asian optics producers became more integrated into the global economy and their skills improved, their ability to circumvent JML increased. As noted above, JML's business model extracted value, in part, by allowing the company to contract with foreign producers to manufacture lower-margin goods. JML guaranteed and provided the quality assurance and customer satisfaction. As the capabilities of foreign optics producers advanced up the value chain and the Internet gave them greater access to the North American market, Joe could see the potential for JML's direct competition with Asian producers.

The widespread use of optical design software represented the second threat. The company earned its highest margins from customers requesting products that required JML's expertise in optical design. This new technology, however, provided off-the-shelf computer software that allowed generic engineers to design optical products. While JML management believed then and continues to believe that this off-the-shelf software will never totally supplant the need for the superior performance of products designed by skilled optical designers, its widespread availability could potentially reduce the demand for JML's products.

Joe saw new threats posed by structural shifts within the industry – shifts that created new forms of competition. In order to succeed in a changing and competitive environment, a number of optical/photonics companies based in the United States and Europe had implemented diversification strategies. These new conglomerates, such as Melles-Griot, CVI Laser of Albuquerque, NM, Newport Corporation of Newport Beach, CA and NYSE listed Roper Industries bundle photonics-related products and services to capture greater value-added. They provide not only optical design, production, and value-added services such as coatings, but also general photonics related products such as lasers and precision measurement equipment. Additionally, many invested in Asian production facilities to improve their cost competitiveness. Integrating these capabilities allowed the firms to provide significant value-added to optical and photonics end users.

7. The Changing Role of an Entrepreneur

Over time, Joe's role evolved. During the early years of the business, he closely oversaw day-to-day operations. Revenues quickly grew from several thousand in 1972 to over \$10 million in 1984. As the company began to generate significant cash flow and profitability, however, Joe's priorities shifted. He focused less on growing the business and more on service to his local community and national trade organizations. He became involved in charitable giving and service to national trade associations. He also redirected a sizable portion of corporate earnings into employee benefits. Despite these additional activities, Joe elected to maintain most of his day-to-day activities at JML.

Since the mid-1980s, Joe had preferred slower growth – to keep the company manageable. By 2002, JML showed sales of approximately \$14 million, employed 85 people, and was both profitable and successful. Joe enjoyed managing JML and often became involved in daily routines. "I enjoy being involved with these tasks". He was also aware that his hands-on style could be a hindrance to growth beyond the \$20 million level. At times he considered hiring a new president and moving to the role of chairman of the board, but was not sure if he could maintain sufficient distance from direct management were he to move to the board.

By 2003, however, Joe had begun considering moving the company into another high-growth stage. The next growth phase would require Joe to place a greater emphasis on leading new strategic initiatives and managing the leadership team and less emphasis on daily operations.

This move would require the company to shift to the production of higher-value-added, more intricate optical devices and the sub-assembly of optical devices for original equipment manufacturers. Potential opportunities for the company were associated with a variety of optical products used by the telecom and bio-medical industries. One specific high-tech product associated with the telecom industry involved Dense Wave Division Multiplexing (DWDM). This technology increased the bandwidth and efficiency of fiber optic networks, which allowed a cable to carry many conversations or data connections by assigning each one a slightly different, but entirely discrete, wavelength. In 2003, the market for DWDM systems was projected to grow at CAGR of 28% over the next five years.¹⁰

Joe estimated that the company's entry into DWDM production could expand the annual sales to approximately \$50 million within a 5 year period. Production of these devices is complex, involving a process that places over 100 coatings on a 6 inch substrate. This substrate is then divided into millimeter sized pieces which in 2003 could sell for as much as \$1,400 per piece. Hence, one substrate, with a high manufacturing yield rate, could produce approximately \$700,000 in revenue.

JML's strong financial position would enable it to enter DWDM like markets without the need of an outside cash infusion. The company was also fairly well positioned for moving into advanced optical production – it currently owned a number of sophisticated coating machines that could be utilized for DWDM manufacturing. Other equipment, such as etchers and sophisticated glass cutting devices, could be purchased. Alternatively, if the company did not want to be involved in this stage of production, the work could be farmed out to specialized firms primarily based in California. JML estimated that, at a minimum, the necessary production equipment would require an investment of approximately \$2 to 3 million. The company did not currently possess the design, marketing, and some aspect of manufacturing expertise required to enter the market, but skilled resources were available for hire. JML estimated that an additional 6 employees would be required to compete in the DWDM market, and two of these would require PhDs like skill sets.

Despite the significant potential returns, a move to higher value added optics related products was very risky. JML's traditional markets were diversified, consistent, and profitable. Many new photonics-related products, particularly those associated with the volatile telecommunications industry, could be extremely cyclical and/or unpredictable.

Such established companies as Corning, JDS Uniphase, Lucent, and Nortel invested heavily in the photonics driven telecommunications market during the 1990s and early 2000s and posted substantial losses during the telecommunications decline of 2001-2003. Corning, the technology pioneer and market leader in fiber optic cable, expanded heavily into the downstream telecommunications photonics and optic products. The company's telecom segment revenues (including fiber optics, cable, and downstream devices) declined from 70% of total revenue in 2001 to 46% in 2003.¹¹ Largely as a result of the telecommunications crash, the company's total revenues declined from \$7.1 billion in 2000 to \$3.1 billion in 2003.¹² JDS Uniphase, an optical networks company specializing in components and products associated with fiber-optics and cable television networks, experienced even greater volatility. The company's revenues fell from \$3.2 billion in 2001 to \$676 million in 2003.¹³ In 2001 the company reported over \$50 billion in losses. Telecommunication equipment giants, Lucent and Nortel Networks, also posted large revenue reductions and losses as a result of the telecommunications crash and large investments in photonics/optical components and systems. Lucent's revenue fell from \$21.3 billion in 2001 to \$8.5 billion in 2003.¹⁴ The company reported losses of over \$28 billion from 2001 to 2003.¹⁵ Nortel's revenue fell from \$30 billion in 2001 to \$9.8 billion in 2003.¹⁶ Losses during the same time period were approximately \$30 billion.¹⁷

Given the recent dismal performance of the largest and financially able telecom and photonics companies, JML viewed entry into the DWDM market as risky, with no certain payoff in the medium term due to market and production uncertainties.¹⁸ Due to this unpredictability, Joe did not believe that accurate short or medium term revenue projections were possible.¹⁹

8. Company Succession and Entrepreneurial Exit Strategies

Joe realizes the time has come to evaluate critical company succession issues and possible exit strategies. Now in his late-50s, his retirement is not imminent, but he recognizes that it is likely that he will retire within the next 10 years. Growing the company would require strong leadership, considerable time and effort and an ability to manage risk. The effort would also entail the delegation of considerable responsibility to acquire and develop new market and technological expertise. Joe could start the effort, but it is unlikely that he would see the project through to completion. Someone else would have to be found.

Joe once hoped that one of his children would succeed him at JML, but his children do not desire to run the company. At different times, Joe's wife and children have worked part time for the company, but they have never shown an interest in running the business. Currently, his eldest daughter, Jeanna, 31, works part-time for JML in the finance/accounting area. Despite this connection to the company, her primary career concerns center on her family and children and she does not wish to run JML. Joe's other two children worked at JML in their college years during academic breaks, but even then they possessed limited interest in optics or JML. Jodi, 30, is a professional social worker living in the area. Joe, 29, is a social studies teacher based out of a Midwest suburb. They too are very happy with their current careers and unlikely to become involved in the business.

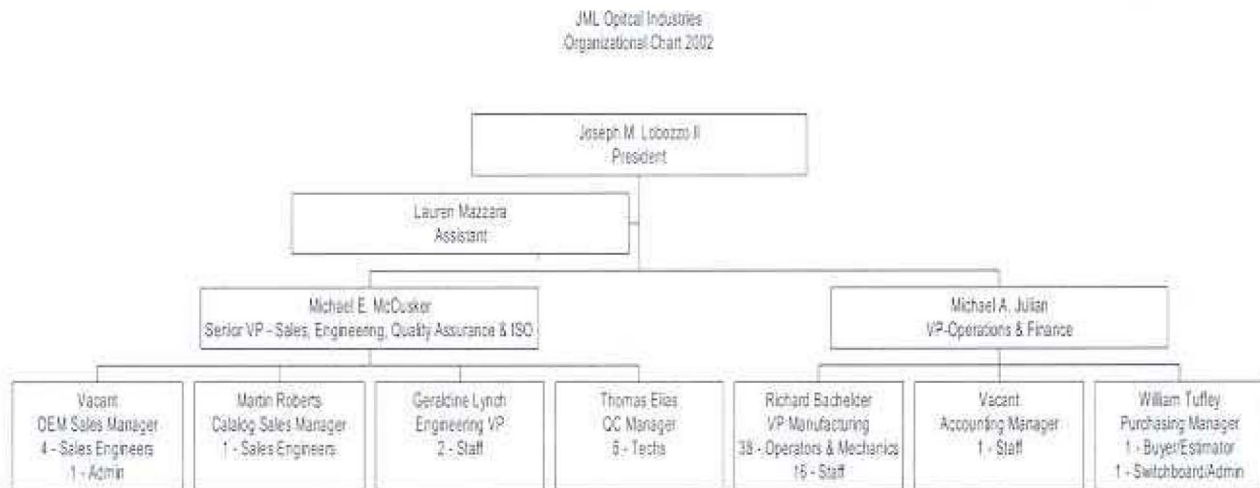
Moreover, there are no long-term succession candidates within the senior management team. Members of this highly skilled group are Joe's contemporaries and have been with the company since the 1970s. Three of the four vice presidents – Dick Bachelder of Manufacturing, Mike McCusker of Quality and Engineering, and Mike Julian of Finance and Operations – are also in their mid- to late-50s. Gerry Lynch, vice president of Optical Design, is in her mid-70s. (See Fig 1 below)

Other options are available to him. Joe could hire a president and chief operating officer and become board chair. He could hire a dynamic senior manager, whom he could groom to eventually lead the company.

He also considers an Employee Stock Option Program (ESOP) or an IPO, which would allow him and his employees to cash out of the business over time, but these options do not solve the succession problem. Additionally, JML's size makes these options relatively costly.

The sale of the company is also an option, but Joe would be very selective in his choice of acquiring companies. Financial return is important, but not the highest priority. Joe views JML employees as part of his family and is committed to continuing stable employment. A number of companies might find JML's expertise, customer base, and production facilities very attractive. A foreign optics manufacturer might find JML's market presence and contacts very valuable. A US or European based firm seeking to create a diversified photonics conglomerate would also find significant value in JML's assets and expertise.

Figure 1



9. Decision Point

Joe has made many sacrifices to establish JML as a leader in the photonics industry. For many years, the company has consumed all his waking hours. Still, Joe expects that he will not be the day-to-day chief executive in 10 years. He wonders what life would be like if he were to let go of the reins and allow someone else to take over.

Joe enjoys the company, his employees and his work. He could be perfectly content keeping the company as it is. He could maintain the current level of revenue for quite a while without pursuing any new opportunities. But where would that leave JML in the future? Would he be leaving the company vulnerable in markets with increasing competition and shrinking margins? Does the changing environment dictate a proactive move into higher-value-added optical markets and technology? And what about all of the people who work for JML, loyal people who rely on their work to support families?

These questions form a constellation of issues whose resolution will determine the future of the company. Right now Joe wishes he were better at reading the stars; he might know where his company will be in 10 years, who will be leading it and what shape his own life will take.

JML Optical at the Crossroads: Exploring Growth and Exit Strategies of a Family Business

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TEACHING NOTE

The JML Optical case was developed to explore and promote discussion on the impact of an entrepreneur's motivations on strategic change, firm growth, and the timing and shape of the entrepreneur's exit strategies.

1. Course Fit and Learning/Academic Objectives

This case was developed for standard MBA entrepreneurship or small business management courses. In a standard introductory entrepreneurship course, the case may be used in discussions related to formation of exit strategies by entrepreneurs. In a small business management course, the case may be employed to discuss the changing role of entrepreneurial managers in dynamic industries.

Generic topics explored include:

1. The role of the entrepreneur (and the impact of founder preferences) in fostering firm growth.
2. Complexities and difficulties associated with strategic change in small, successful firms.
3. Entrepreneur succession and exit strategies during transitions between growth phases.

The JML case promotes discussion and review of a number of academic literatures related to exit strategies developed by entrepreneurs and the difficulties associated with management succession in small, closely held (often family-operated) businesses. While a growing body of literature explores the rationale and importance of entrepreneurial exit strategies, their emphasis is on high-growth firms with venture capital and angel investors.² Few studies specifically explore why the founding entrepreneurs of closely held (often family-operated) firms may elect to sell their companies. Existing research notes such significant factors as a lack of willing heirs, boredom and burnout, dearth of capital, illness, personal liquidity, and desire to pursue other interests.³ What is widely established in the literature, however, is that an entrepreneur's decision to sell his or her privately owned company is intensely personal in nature.⁴ The JML case reflects the personal choices facing Joe Loboizzo, president and majority owner of JML Optical. Joe is not constrained by investors or corporate/personal cash flow issues – although his awareness of the changing optics competitive environment does represent a constraint. Instead, his exit decision will be shaped by balancing his attachment to the firm and its employees on the one hand, and his age and shift in personal interests on the other.

The case also fosters a discussion about management succession in family businesses. As noted in the case, Joe Loboizzo's intention was to create a company that would be continued by his children. Absent this outcome, Joe has no formal succession or exit strategy, a common dilemma among entrepreneurs. Both the strategy and entrepreneurship literatures agree that most management succession issues are not well understood.⁵ The entrepreneurship literature notes the relatively unsuccessful efforts of entrepreneurs to pass their businesses to the next generation. The average

life expectancy of a family-owned business is merely 24 years,⁶ only three in 10 family businesses survive into the second generation and only 16% pass to the third generation.⁷ The likelihood of succession is closely linked to the degree of long-term involvement with the company on the part of the children.⁸ Within the case, succession prospects are also reduced by the high-technology nature of the optics industry; family succession is less likely in dynamic, high-technology-oriented businesses.⁹

2. Case Synopsis

The case begins in 2003 with Joe Loboizzo's debating the future direction of both JML Optical and his role as chief executive officer. Joe founded the company in 1972 and has since served as the company's majority owner and president. JML competes in the rapidly growing, yet difficult to quantify, photonics and optics industry. Specifically, the company designs, manufactures, and sells precision optics – a relatively old industry that has been invigorated by recent advances in laser and light-emitting diode technology. Brand new industries and markets such as those surrounding fiber optic telecommunications, biomedical equipment, and automation sensors etc. have emerged as enabling technologies.

The case begins by outlining Joe's motivations for starting JML Optical. Growing up, Joe was fascinated with the idea of starting and running a business. As a child he shined shoes, worked as a vendor in Yankee Stadium, and worked for his uncles' small fuel oil business. Joe's uncles played a particularly important role in shaping his aspirations. He saw their relative wealth and independence and soon equated success with entrepreneurship. After obtaining academic and professional experience in the field of optics, Joe identified an opportunity to start a business in the early 1970s. His employer at the time, optics producer Ilex, appeared to poorly manage the customer/production interface. The opportunity emerged as existing Ilex customers sought other suppliers that could provide quality customer service.

Joe founded JML in 1972 and poured most of his time and energy into the business. As a result of his efforts, JML grew to over \$10 million in sales within 10 years. Additionally, the company enjoyed both strong profits and margins. However, JML's growth over the next 15 years stalled. While remaining very profitable, the company's sales showed only modest growth – to \$14 million in 2003. Joe, now in his late 50s, was no longer focused on achieving high growth rates. He placed a significant emphasis on service to community and charitable organizations and chose to make employee job benefits a priority.

JML Optical competes in the precision optics industry. Traditional optical devices were used to magnify visual objects using natural sunlight in devices such as telescopes, eyeglasses, artillery sites, etc. New innovations in light emitting devices such as lasers, however, have enabled the creation of entirely new industries and markets such as fiber optic cables, scanners, and sensors. Advances in miniaturization and the production of precision instruments have also strongly impacted the industry. As the photonics industry advanced, lower-valued-added optics manufacturing shifted to lower-cost Asian countries. Many companies based in North America escaped the onslaught of cheaper Asian optics by shifting to production of more complex and sophisticated products. As evidenced by the telecommunications crash of 2000, there was significant risk inherent to these strategies. JML's unique business model, however, protected the company from these trends.

The case ends where it began with Joe's debating both the company's strategic direction and his own future plans.

3. Case Analysis

Suggested study questions could include:

1. *Describe Joe Loboizzo's motivations for starting JML. How have they changed?*

As noted above, Joe's motives concerning the growth of JML Optical have changed significantly over the past 30 years. During the company's first decade, Joe placed most of his time and energy into growing the business. Subsequently, however, Joe's priorities shifted and he now emphasizes managing a profitable, slow-growth company, providing stability to his employees, and serving the community.

2. *Assess the viability of JML Optical's business model.*

JML competes primarily with Asian optics manufacturers, which have significant cost advantages. The company's unique business model has enabled JML to compete effectively and become very profitable. A number of current trends, however, suggest that the company's success may be challenged in the future. The diffusion of optical design and production technology, the use of the Internet as a marketing platform, and advances in optical design software represent looming competitive challenges. The issue for JML is not *if* a strategic shift will be necessary but *when* and *what form* it will take.

3. *What should Joe do?*

There are two related issues involved in this question: What strategy should JML pursue and who should lead the company during this shift? The first issue is discussed above. The second and more germane issue relates to the shape and timing of Joe's succession and exit strategy. While Joe had hoped that his children would eventually manage JML, this outcome appears unlikely. Absent this outcome, very little succession planning has been done. Given that JML's talented existing leadership team are Joe's contemporaries, individual members of the group appear likely to advance and contribute to a strategic shift to newer technology markets, but not to serve as chief executive officer. With few family or internal options, there are a number of non-mutually exclusive succession options. Joe could hire a senior manager to run the company and he could move to the board. Also, he could hire a senior manager to groom over a period of years. These options, however, appear unlikely because Joe is not interested in overseeing a chief executive office and he retains a deep emotional attachment to the firm and its employees. These conditions seem to rule out an IPO and ESOP because these options would require existing management to stay in place. The succession problem would not be solved.

Another option remains: *Joe could sell the company?* From the information available in the case, the company would provide the greatest value to newly developing diversified optics/photonics firms or perhaps to a foreign producer desiring to purchase North American market share. Timing is also a significant issue. Joe could lead the company into the production and supply of higher-valued-added products and exit after several years. He could also exit immediately. Joe's level of intensity in growing JML is central to this discussion.

Faculty may also require students to explore the market dynamics associated with the photonics/optics industry. (I have found this particularly helpful.)

4. *Using online library and Internet resources, please research the photonics and optics industries. What markets employ photonics technology and systems? What is the growth potential of the market? Is the market volatile? How have companies such as Corning, Lucent, Nortel, and JD Uniphase fared in the market?*

As will be demonstrated through class participation, estimates of the size and growth of the photonics industry fluctuate dramatically. Most students identify the market size in a range of \$250 million to \$75 billion. What most students do agree on is that the telecommunications markets (including fiber optics line, fiber optics cables, photonics-based telecommunications equipment, optical devices, etc.) represent a significant segment. This market, however, has been highly volatile. The market grew robustly in the 1990s, only to crash in 2000. Other segments, such as consumer goods (scanners), and automation sensors also represent important markets. The purpose of this section is to demonstrate both the financial opportunities and significant risks associated with the photonics industries. Major technology companies such as Corning, Lucent, and Nortel were significantly harmed by their effort in photonics and telecom during the crash in 2000. The research should down play competition and focus on growth opportunities and volatility.

4. Lesson Plan

The teaching plan is designed to explore issues related to the impact of an entrepreneur's personal motivations on strategic change, firm growth, and the timing and shape of exit strategies. The broad questions asked during class discussion typically focus on: (1) the nature of the photonics/optics industry (to provide background information), (2) entrepreneurial motivations for growth, (3) JML Optical's strategic positioning, and (4) potential founder exit and succession strategies.

The suggested flow of questions is as follows:

1. Describe the photonics and optics market. What exactly is it?

The class typically begins with a variety of perspectives on the photonics industry and market. Most students note that the market is potentially huge. Other students mention that a comprehensive market analysis is difficult to find and market estimates range dramatically. From this discussion the conversation typically shifts to existing markets that employ photonics technology. The telecommunications industry is typically the first one mentioned. The emergence of fiber optic cable and supporting photonics systems represent a billion dollar market including cable, photonic devices, and manufacturing equipment. To explore the nature of the photonics/optics market, the instructor may ask questions related to the stability of the telecommunications market.

- How has the telecommunications market fared over the past few years?
- How have companies such as Corning, Lucent, and Nortel fared in the photonics market?

These questions flesh out the huge uncertainty associated with the newly emerging photonics industry. Next, the instructor may focus on the nature of the traditional optics industry.

- What are optical devices?

Most students use the case-provided definition of optics: They are primarily glass or plastic devices that divert to alter the properties of light. Next, a follow-up question is asked regarding the technological nature of optical devices.

- Are optics high- or low-technology products?

Most students typically agree that optics can be either high- or medium-technology. Using the case material, students note that standard optics production largely shifted to lower-cost overseas production. At this point instructors may ask a brief question about JML Optical.

- In what segment of the photonics market does JML compete?

Most of the students describe JML Optical as competing, at least in part, in the segments that migrated to lower-cost overseas producers. JML Optical is a basic optical manufacturer that creates value by offering superb customer service and high quality, medium-technology products. Once the photonics and optics markets are discussed, the questions progress to the motivations of JML founder Joe Lobo.

2. What motivated Joe Lobo to found and grow JML Optical?

Most students typically mention influences consistent with the entrepreneurship literature. These answers range from early role models, equating entrepreneurship with financial and personal success, a desire for independence, etc. Inevitably, students focus on Joe's change in professional priorities. They note that Joe's priorities changed from promoting rapid growth to managing a very profitable company with limited growth. To emphasize this change in focus, instructors might ask a number of questions that demonstrate the personal nature of these decisions. For example:

- Why did Joe's professional priorities change?
- What factors might have influenced Joe's changing priorities?

The next series of questions focus on Joe's personal management style. Instructors might ask questions such as:

- How does Joe manage JML?
- How would you describe Joe as a manager?

Students generally note that Joe is a hands-on type of manager and there are only a few other members of the management team described in the case. After some prompting, students mention that these other managers had functional (engineering or manufacturing) expertise. The next follow-up question seeks to link Joe's management role and motivation together.

- Are any internal or external stakeholders encouraging JML to grow?

Students typically mention that Joe is the primary owner and his management team appears functionally focused. Some students note that the decision is ultimately the owner's and Joe has chosen to favor profitability over growth. These answers lead to the next series of questions, which focus on JML Optical's market position and business model.

3. What is JML's business model? And has it been successful?

After asking this question, instructors might preface it by first asking for the components of JML's business model. After defining the model, students typically describe it as successfully co-opting fierce Asian competition. Instructors might want to follow up these answers by asking students:

- How does JML extract value from the market?

Students typically note that JML extracts value based primarily on excellent customer service. Value is also extracted from higher-value-added services such as providing optical design or coating. Instructors may want to follow up these answers by asking students:

- How do you assess the future viability of JML's model?

This question typically begins a robust discussion about the changing technology environment and JML's current strategy and business model. Some students propose that JML should rapidly shift higher-valued-added optical componentry. Other students are more cautious about the timing of the shift. They note that a move into higher-valued-added photonics is risky, as demonstrated by the recent telecom crash. They also note that JML, in the short term, lacks the capabilities to enter these fields. Sometimes, a smaller number of students suggest that JML should discontinue manufacturing and focus on its core "customer relationship function".

After this discussion, the instructor should ask questions linking strategic change to the desires of the owner.

4. What should Joe do?

Since potential strategic options were previously discussed, this conversation focuses on the exit strategies, timing, and personal preferences of the entrepreneur. Instructors should lead the discussion to note that the risk/return choices are based on both personal and professional factors. Some students suggest that Joe should sell the company to a technology savvy photonics firm. Others believe that, given Joe's interest in the company, he should hire a new chief operating officer. This discussion typically also integrates Joe's exit strategy timing. Students actively discuss whether Joe should retire now or in the next five years.

The case may be concluded by asking students:

- In this case, what role does the entrepreneur play in the strategic growth of a company?
- How might this case be different if Joe were not JML's primary owner?
- How important is succession planning?

References:

- Beckhard, Richard and Dyer W. Gibb Jr. 1983. "Managing Continuity in Family Owned Businesses". *Organizational Dynamics* 12(1): 5-13.
- Kuratko, Donald F. & Richard M. Hodgents. 2004. "Management Succession and Continuity: A Family Business Perspective". In *Entrepreneurship: Theory, Process, and Practice* (New York) Thomson-Southwestern.
- Holmberg, Steven R. 1991. "Value Creation and Capture: Entrepreneurship Harvest and IPO Strategies". In *Frontiers of Entrepreneurial Research* (Babson Park: MA) Babson College.
- Payne, William H. 2002. "Choosing Your Exit Strategy". In Price, Robert W., editors. *Entrepreneurship 02/03* (Guilford, CT) McGraw-Hill.
- Petty, William. 1997. "Harvesting Firm Value: Process and Results". In *Entrepreneurship 2000* (Chicago) Upstart Publishing Company.
- Pitcher, Patricia, Samia Chreim & Veronika Kisfalvi. 2000. "CEO Succession Research: Methodological bridges over troubled waters". *Strategic Management Journal* 21(6):625-648.
- Stavrou, Eleni T. 1999. "Succession in Family Businesses: Exploring the effects of demographic factors on offspring intentions to join and take over the business". *Journal of Small Business Management* 37(3).
- Ward, John L. 1987. *Keeping the Family in the Business*. Jossey-Bass San Francisco.