**BUSINESS DESCRIPTION**

Stryker is a broad-based medical technology company involved primarily in orthopedics but also in several other specialties. While patients might not recognize the Stryker name, the company is renowned among surgeons and other health professionals. The company’s main products, forming the Orthopedic Implant segment, include hip, knee, and other joint implants, and also products specific to craniomaxillofacial, endoscopic, spinal, and trauma surgeries. The MedSurg segment provides surgical power tools, navigation and imaging systems, and emergency medical equipment. Earlier this year, the company divested its outpatient physical therapy service, Physiotherapy Associates, concentrating on the core equipment businesses. Founded in 1946, the company operates out of Kalamazoo, MI serving customers across the globe.

**Orthopedic Implants**

The Orthopedic Implants segment operates through four businesses: Stryker Orthopedics, Osteosynthesis, Spine, and Biotech. The segment accounts for approximately 58% of total company revenue. Stryker Orthopedics provides multiple joint replacement systems and related medical instruments for the hip, shoulder, and knee. Historically, the company offered four separate hip systems to cater to different procedures and patient sizes, but Stryker has recently been transitioning to the single Restoration Modular Revision Hip System. Stryker is the global market leader in hip replacements technology.

The company offers five knee replacement systems, including the flagship Triathlon knee. The Triathlon offers various sized components to improve motion and fit and to reduce wear. Stryker also offers the EIUS and AVON partial knee-replacement components for more minor injuries. The company offers the solar and ReUnion lines of shoulders and elbows as well. These systems allow the surgeon to adjust tension to most realistically simulate human movement.

Stryker’s orthopedic implants are the first choice among surgeons due to their vast range of options that allow the most patient-specific solutions. Since FDA approval in 2006, the
company’s joint replacement products have incorporated X3 polyethylene liners to allow more minimally invasive surgery and comfort for the patient.

Stryker Osteosynthesis produces bone cement and growth factor, BMP-7 and OP-1. Simplex P Bone Cement has several varieties, including antibiotic and quick-setting, giving multiple choices to surgeons given different patient situations. Several bone substitute products help patients quickly recover from bone trauma or replacement to regain natural movement. The Osteosynthesis group also markets Stryker’s trauma offerings, including nails, screws, rods, and plates designed to correct fractures suffered from recent trauma. As with the company’s other products, Stryker offers many variations specific to different patient scenarios. Osteosynthesis is also responsible for several product systems designed to aid in craniomaxillofacial (skull, face) surgeries.

Stryker Spine offers a wide variety of implants, screws and tension bands to repair spinal injuries. The MANTIS Percutaneous Pedicle Screw System allows for fully adjustable screw placement, meaning every patient can receive a perfectly customized spinal correction. Stryker Biotech produces additional bone replacement products and other items to fill in gaps during orthopedic surgeries.

MedSurg

The MedSurg segment offers the actual surgical instruments, imaging systems, and hospital supplies used to work with the aforementioned orthopedic products. This segment operates through three businesses: Stryker Instruments, Stryker Endoscopy, and Stryker Medical.

Stryker Instruments produces drills, saws, and other tools used in orthopedic, spinal, neurological, and plastic surgeries. The business offers a wide range of tools specific to different regions of the body. The company recently introduced a revolutionary non-stick forceps that drastically reduces bleeding in neurosurgery. Through the Instrument business, Stryker also offers surgical navigation systems, which allow the surgeon to precisely see where his instruments are within the patient’s body, and where optimal insertion, screw, cut, or other points are. This is an important new technology that decreases the duration and error rate of surgeries. Other offerings include wound drainage systems, blood replacement systems, pain management systems, and ER waste management systems.

Stryker Endoscopy provides multiple video-imaging and communication platforms used in general surgery, arthroscopy (seeing inside joints), and urology. Last year, the company released a new generation of HD cameras and viewing systems, offering unparalleled resolution for the surgeon.

Stryker Medical produces varieties of stretchers, hospital and ambulance cots, and sleeping surfaces for patients of various needs. Innovative patient beds allows for on-bed monitoring of patient metrics, along with a customized reminder schedule for caregivers.

Note: It would be possible to go into much more detail about product-specific benefits, but that would require a very high level of medical and biological detail far beyond the scope of this memo. Stryker is known for its innovation.
Competitors

Stryker competes with Johnson and Johnson, Zimmer Holdings, Biomet, Medtronic, Tyco, General Electric, Smith and Nephew, and many other companies with market capitalizations ranging from tens of millions to hundreds of billions. Accordingly, some of these companies are less diversified and some more. This places Stryker in a good balance of size and risk. While more risky pharmaceutical-based companies could face great downside, larger conglomerates might not respond to improvements in technologies or sales growth in a segment that only makes up 4% of the company’s revenue. Stryker finds a happy medium, with all of the company’s sales made up 60% of orthopedic products and 40% from hospital supplies and other equipment.

MANAGEMENT


Overall, the management shows a strong history leading Stryker and good previous experience at relevant companies.

LONG POSITION THESSES

1) Strong history of growth and innovation indicates solid potential future growth

As an investment, Stryker is known as a solid performer in all conditions. Last year, the company had sales growth of 12%. Over the past 10 years, Stryker has grown at an average rate of 19%. Net income grew 21% for the year in 2006, with 10-year compound growth of 20% per year. This stable growth makes it easy for analysts to assume 20% annual growth into the future without fully analyzing the factors affecting the company.

MedSurg sector growth has been accelerating over the past few years, from the mid-teens three years ago to the low 20’s last year. Additionally, Dr. Vincent Arlet, a spinal specialist at U.Va Health System, suggests that growth in the spinal business will be large and unexpected. The company estimates current spinal market share at 8%, 5th place to Medtronic, who has 34% of the market. Arlet characterizes Stryker’s spinal strategy as “aggressive” and says that their solid products will lead to greater adoption. The company has also been pursuing surgical navigation technologies, digital imaging techniques that allow the surgeon to see the position of his instruments relative to the individual patient’s anatomy. As of 2003, only a dozen academic locations in the United States had navigation capabilities, so the potential for growth is tremendous. As an early entrant, Stryker is well positioned to take an early lead in market share as more hospitals adopt the important technology.

1 A New Chapter in Orthopaedic Surgery.
http://www.medicalmoment.org/_content/treatment/nov03/181556.asp
Finally, as a well-diversified company, Stryker has a history of making small acquisitions to add development-stage technologies to their portfolio. This allows the company to be a first-mover when the technology is finally ready to take off. For example, in 2006 Stryker acquired Sightline Technologies, a small Israeli company specializing in GI tract surgery, a new area for Stryker. Excluding the retirement of long-term debt in 2006, Stryker has grown its cash position from $66 million in 2003 to over $650 million in 2006. This extra cash will allow the company to make more bolt-on acquisitions without having to access the tight (and potentially further tightening) credit markets. Other companies in the field simply do not have this luxury.

2) Stryker is minimally exposed to a macroeconomic slowdown compared to current MII holdings

The provision of healthcare defies standard economics, as it is essentially a perfectly inelastic good. The medical equipment and supply company is central to the services hospitals and other caregivers provide, so even in a recession, Stryker should be well positioned to continue its strong growth. While consumers are not demanding goods directly from Stryker, the growing demand for quality health care forces hospitals to continually update their equipment.

As consensus grows that the US economy is headed toward a recession, the MII needs to invest more heavily in non-cyclical businesses. The current portfolio is heavily weighted toward consumer goods, which could be hit hard by an economic downturn. So, an investment in Stryker could act as a hedge within the long portfolio. When economic conditions improve, Stryker will continue to be a strong contender.

3) Aging population and active lifestyle trend provide future demand growth

The population of the world is aging quickly. While only 8% of the population was over age 60 in 1950, this proportion had increased to 10% in 2000, and is expected to reach 21% by 2050. Since the human body deteriorates with age, especially in areas prone to wear, like joints, this age increase provides an increase in the demand for health care. More specifically, more and more people will orthopedic surgery as the joints get worn down longer.

At the same time, healthy lifestyles are being promoted more than ever. The CDC is currently planning a full active lifestyle campaign. From 1987-2001, health club membership for people over 61 jumped 266%, and for baby boomers there was a 135% increase. At the same time, between 1990 and 1996, sports injuries in the 65+ age group grew 54%. As an aging population exercises more than ever, there will be more injuries that need medical treatment. Stryker provides the equipment necessary for this medical treatment, so there should be solid demand growth heading into the future. Bear Stearns estimates total market growth for joint implants between 6 and 12% per year, and Stryker makes 40% of its revenue in this area.

4) Stryker positioned for long-term growth in emerging markets

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Last month, Stryker invested in a new R&D center in India, and the company plans to open a second in 2008. In this interview with the Indian Economic Times, Stryker India GM Vishal Gupta discusses Stryker’s role as an innovator in the subcontinent, providing the only autonomous transfusions in the country, and plans to introduce telesurgery and surgical navigation technologies soon. He also mentions that Stryker plans to fully leverage low manufacturing costs in China to improve performance. These key footholds in developing markets that are only now starting to demand cutting edge healthcare will allow Stryker to grab early market share in both the short- and long-term.

CONCLUSION

Stryker has been a market leader in the medical equipment industry due to consistently strong market growth and product innovation. In the future, Stryker will leverage this history of solid business onto new technologies to accelerate growth both organically and through key portfolio-bolstering acquisitions. Additionally, the market for orthopedic implants and hospital services in general is growing because of an aging population and social trend towards an ever more active lifestyle. Stryker has invested in emerging markets early to provide an additional growth catalyst in the near term and into the future. Finally, as economic conditions may begin to deteriorate, Stryker should remain strong as its business is inherently non-cyclical. This is in sharp contrast to the current MII portfolio, weighted heavily in consumer goods and therefore very exposed to macro conditions.

Therefore, while Stryker should not provide explosive growth, the company has a strong and consistent performance history that should continue and accelerate, even if the overall market slows. Investors have noticed future growth potential in the past, and this has shown in the stock’s performance. Before a 28% increase in stock price so far this year, 2006 saw around 22% growth, and over the past five years the stock has returned 120%, in addition to a dividend that was recently doubled. Stryker is a stock poised for strong future growth in a time of economic uncertainty.

VAR

- Baljit Singh Sidhu, former Orthopedic Surgeon in Richmond, VA
  - Excellent products, above and beyond competition
  - Used Stryker drills, operating table that is very popular (MedSurg)
  - Responsive sales team

- Mark Pinho, Principal, Soros Fund Management
  - Leading indicators suggest that a consumer-led slowdown, if not recession, is a probable outcome for the economy today, regardless of what the Federal Reserve decides to do with interest rates. Coupled with the current housing market issues and rapid pullback in consumer and business credit, the next two years look challenging for the US economy.

- Dr. Arlet M. Vincent, Department of Orthopedic Surgery, Division of Spine Surgery, U.Va Health System
  - Very aggressive new entrant to spine market
  - Strong products

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4 Stryker GM Interview.
http://economictimes.indiatimes.com/Opinion/Interviews/China_scores_over_India_when_it_comes_to_manufacturing_says_Stryker_GM/rssarticleshow/2484680.cms
• Should take market share from Medtronic, DePuy, Synthes

• Dr. Elan Singer, plastic surgeon
  • Tools good for multiple types of surgery
  • The standard choice for most hospitals – competitors mostly not even an option

• Dr. William M. Mihalko, Department of Orthopedic Surgery, Division of Joint Replacement and Adult Reconstructive Surgery, U.Va Health System
  • Have not heard back yet

• Dr. Frank J. Frassa, Director, Department of Orthopedic Surgery, Johns Hopkins Health System
  • Have not heard back yet

• Dr. Sharon L. Hame, Department of Orthopedic Surgery, UCLA Health System
  • Have not heard back yet

• Dr. Gregory Domson, orthopedic surgeon, Richmond, VA
  • Have not heard back yet

**IDEAS FOR MII IMPROVEMENT**

• Focus primarily on finding more short positions
• Look into exporters/more foreign companies to hedge effects of sliding dollar
• Use up cash
• Reinforce that VAR is not talking to an analyst at a bank or hedge fund about their opinion on a stock
• Standardize Sector Head update memos. Assign one manager to each sector, and have that manager communicate with the sector heads in the same way mentors communicate with candidates for this election. Have each sector report follow a set template
• Keep trying to get every decision back within a week
• Continue move towards two presentations per meeting
• Schedule regular fast pitch presentations – maybe one manager fast pitch per meeting before main pitches. Should help to build up watch list and fuel more full-length presentations
• Have some quick fundamental presentations about macro factors – housing, currency value, interest rates, etc – for less experienced members. Maybe have a short manager presentation at the beginning of next semester describing the causes and effects of this summer’s credit crunch