SECTOR WATCH: MEDICAL DEVICE

Firms Say New Drug-Eluting Stents Still Needed

By Brian Gormley

Drug-eluting stents bring in billions of dollars for Boston Scientific and Johnson & Johnson and have all but replaced their traditional, bare-metal counterparts. But when **Morgenthaler Ventures** and **Latterell Venture Partners** look at the market, they see untapped opportunity.

Drug-eluting stents release chemicals that help keep arteries from re-clogging, which occurs up to half the time with traditional stents. Boston Scientific, maker of the Taxus stent, estimates that 85 percent of stents used in the United States are drug eluting.

But Morgenthaler and Latterell contend that the two approved products, Taxus and Johnson & Johnson's Cypher, are best suited to relatively straightforward situations, such as when the blockage occurs in only one vessel. This creates opportunity for companies targeting more complex problems, such as when multiple vessels are blocked or when the vessels are too small for existing stents.

They have backed two such companies recently. Last month, they teamed up with **Advanced Technology Ventures** and **Split Rock Partners** to provide Menlo Park startup **Xtent** with $25 million in a third-round financing to develop a system for deploying multiple stents. In December, they participated in a $15.2 million second round for **CardioMind,** Mountain View, Calif., a developer of small-vessels stents. **InterWest Partners,** which led the round, and **Onset Ventures,** invested as well.

The firms are betting that Boston Scientific, Johnson & Johnson and other stent companies will be eager to acquire startups that can help them protect their existing franchises or move into new stent markets.

There has been evidence of this of late. Boston Scientific last month acquired privately held Advanced Stent Technologies, which is developing a stent for vessels that bifurcate, or split, in two. It paid $120 million up front, with the possibility of additional payments later, to acquire the Pleasanton, Calif., company, which had raised an undisclosed sum from individual investors.

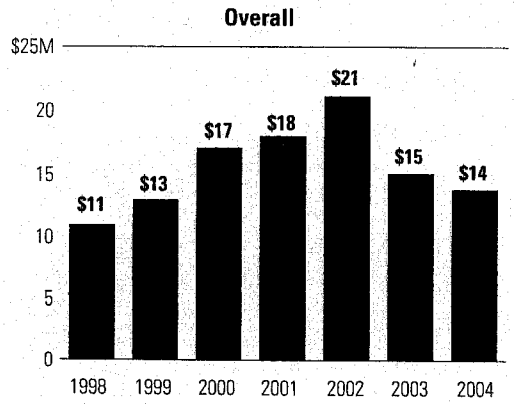
In November, it invested in and gained the exclusive right to acquire **Reva Medical,** a San Diego company—backed by **Domain Associates**—developing a resorbable stent. Guidant last year acquired a resorbable stent marker, BioStent, a product of the medical device incubator **SyneCor.**

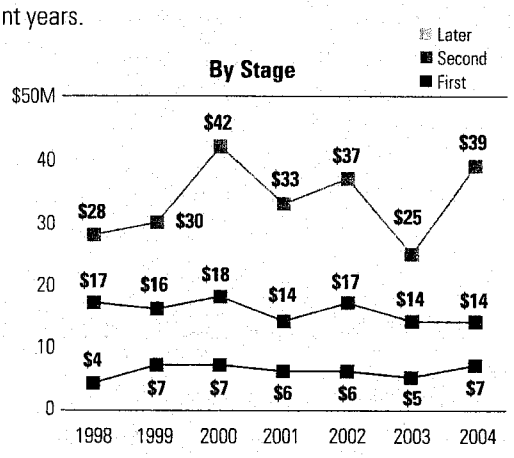
Many see the success of Conor Medsystems, which raised $83 million from **Highland Capital Partners** and others before going public in December, as an encouraging sign as well. The company, which is testing a stent containing hundreds of wells that hold the drug paclitaxel, is valued $530 million even though its stent has yet to earn European or U.S. approval.

These events have emboldened some investors. When

Medical Device Valuations

The success of medical device companies on the public market helped companies rise higher prices for later-stage rounds. However, medical device valuations overall appeared to be in check. Overall valuations were the lowest since 1999. And companies raising second rounds did so at the lowest prices recorded in recent years.





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Xtent began raising capital for its latest round, for example, insiders Morgenthaler, Latterell, ATV and Split Rock offered to provide all the capital, an offer the company accepted.

Xtent estimates that more than 40 percent of patients need multiple stents because they have long blockages or because more than one artery is occluded. Whereas cardiologists today must deploy each stent individually, the Xtent system would allow them to deploy several stents without withdrawing the catheter, saving time.

It also lets them tailor the stent length to the length of the lesion, eliminating the error-prone process of estimating the length of the lesion, said Brian Walsh, an Xtent vice president. He added that Xtent's stents are more flexible than existing ones and less likely to straighten out and injure tortuous blood vessels.

Xtent has licensed a drug candidate from Biosensors International that is in the same family as sirolimus, the drug used on Cypher stent. Unlike sirolimus, which had a track record as a treatment for organ-transplant rejection before Johnson & Johnson began using it with Cypher, the Biosensors drug has never been approved for use, though Mr. Walsh said clinical studies done previously on the drug candidate are promising.

CEO Gregory Casciaro declined to say how the system would be priced, through he predicted that deploying more than one Xtent stent would be less costly than implanting multiple Taxus or Cypher stents. The company soon expects to start clinical trials in Europe and hopes to begin selling the system there in late 2006. It expects to launch a pivotal U.S. study in 2007.

Small-Vessel Opportunity

Small vessels, those 2.5 millimeters in diameter or less, are more prone to re-clogging or restenosis than larger ones and are equally challenging—including the problem of delivering the stent to the lesion without injuring the vessel. Because of this, doctors frequently choose to leave small vessels blocked or bypass them through surgery, said Patrick F. Latterell, a partner and founder of Latterell Venture Partners.

CardioMind, which estimates that 30 percent to 40 percent of stents are placed in vessels with diameters of 3 millimeters or less, is developing a drug-eluting stent designed with the various challenges of small vessels in mind. CEO Julian Nikolchev said he expects to begin clinical trials outside the United States before year-end. U.S. studies are 18 to 24 months away.

The backers of CardioMind and Xtent say the interventional cardiology market is concentrated enough so that a small company can market a product on its own if it is not acquired early on. One company successfully doing so now is FoxHollow Technologies, maker of a catheter-based device to treat peripheral-vascular blockages, which went public in October.

But not everyone agrees that a small stent maker can compete. The corporate leaders, whose catheter-lab sales teams offer many products in addition to stents, depend heavily on stents sales and are not likely to give ground easily. Richard M. Ferrari, a managing director of **De Novo Ventures,** said De Novo has looked extensively into coated stents but has chosen not to back a company that might have to battle these corporations.

"That's a very, very difficult space to play in," he said. Asked if Conor's performance has made him any more optimistic about a small company's chances, he said "not at all."

The corporate leaders are already striving to establish themselves in the market for more complicated cases. In March, Boston Scientific announced that Taxus reduced restenosis rates in small vessels and long lesions in a study that compared the device to a bare-metal stent.

Johnson & Johnson also recently said that a clinical trial showed Cypher to be a safe and less-invasive alternative to bypass surgery in patients with lesions in more than one vessel.

Drug-Eluting Stent Companies

» **CardioMind** *Mountain View, Calif.*
Small-vessel stent
Investors: InterWest Partners, Latterell Venture Partners, Morgenthaler Ventures, Onset Ventures

» **Devax** *Irvine, Calif.*
Self-expanding nitinol stent for bifurcated blood vessels
Investors: HBM BioVentures, MedFocus Fund, Rock Creek Partners

» **Medlogics Device Corp.** *Santa Rosa, Calif.*
Electrochemical process to create bare-metal stents that elute a drug without drug-carrying polymers
Investors: Essex Woodlands Health Ventures

» **Reva Medical** *San Diego*
Balloon-expandable, paclitaxel-eluting coronary stent.
Investors: Boston Scientific, Domain Associates

» **Xtent** *Menlo Park*
Stent and delivery system allowing cardiologists to deliver multiple stents at a time and tailor stent lengths to the length of the lesion
Investors: Advanced Technology Ventures, Latterell Venture Partners, Morgenthaler Ventures, Split Rock Partners