



*Paul White turned a client's frustration into NuBOOM, his proprietary operating room solution that is run by a manufacturing spinoff of his Oregon-based integration firm.*

## SPINNING NEW PROFITS

# FROM BIG IDEAS

How integrator CompView created a manufacturing startup to serve the medical market. By Don Kreski

**I** SUSPECT EVERYONE in our industry has had an idea for a new business or business extension that just seemed perfect for the marketplace — but never did anything about it.

Eight years ago Paul White, president of Beaverton, Ore.-based CompView Audio Visual, made his dream a reality. His startup company, CompView Medical, manufactures NuBOOM, an all-in-one visualization, equipment management and ergonomic appliance for operating rooms. In some ways CompView Medical flowed naturally from the audio visual integration business, but in many other ways it was an entirely new venture.

“Our original decision to move into the medical market came from a desire to be more recession-proof, but we did not start out thinking we would spin off a new company,” White says.

He and current CompView president Scott Birdsall had developed DOCS, an AMX-based control system for operating rooms. They sold it to a local hospital, then, in 2004, showed it to the Oregon Health and Science University Hospital in Portland.

“Melody Montgomery, the operating rooms manager at OHSU, was remodeling an OR for minimally invasive surgery,” White says. “She expressed frustration with how long the process took.”

A minimally invasive procedure involves inserting a miniature camera and additional instruments through small incisions, often into a vein or an artery. Doctors and nurses watch the output of the camera as well as the data from ultrasound or x-ray equipment, on LCD monitors. Today these types of procedures account for perhaps 50 percent of all surgeries, and hospitals have been struggling to update their facilities.

In many ORs all this equipment is rolled in on carts, causing crowd-

ing, trip hazards and requiring surgeons and nurses to assume various uncomfortable positions to view a monitor. Overhead booms can improve this condition, but until White started CompView Medical, those booms had to be ceiling-mounted. To retrofit an OR with a ceiling-mounted boom can cost millions of dollars for equipment, planning, reinforcement of the ceiling structure, asbestos abatement (in older hospitals), dust and bacteria containment and — the biggest cost— lost revenues during construction. The entire process can take almost a year, with the OR out of service for a month or more.

“Melody told me, ‘I don’t understand why this has to take so long,’” White says. “I go to trade shows and see mini operating rooms which could actually be used if there was ever some kind of city-wide emergency. They build them in a matter of days. Why can’t we build this in matter of weeks?”

White thought long and hard about the problem, took a good look at his own trade show display, then developed the concept of the floor-mounted NuBOOM, which can be installed in just two days without further modification of the operating room.

“I understood there might be a huge market for a product like this, but of course I did not realize how hard it would be to develop and launch it,” White says. “The medical field can be profitable, but it’s not for the faint of heart.”

### Introducing A New Concept To Hospitals

One of the first issues White had to face in building NuBOOM was that he did not have anyone on staff capable of designing it. He

started looking for an industrial engineer and found Larry Vollum, who had won design awards in the electronics industry.

“His ideas were terrific, so I showed them to Melody, who agreed,” says White. “We next started work on a life-size mockup, which we showed to the OHSU chief of surgery and dean of students.”

A working prototype followed the mockup. White says he was shocked at the bill of materials Vollum created. The NuBOOM required far more pieces than he had thought possible. But he bought a booth at a medical trade show and the pair took the prototype along.

“We were really lucky,” he says. “We made connections at the show that led to further refinements, and in the meantime we took our first order from OHSU.” White also met with an attorney and set up CompView Medical as a separate business entity. A second tradeshow resulted in an order for two more NuBOOM systems.

White says the team decided early on not to build the production model themselves. Instead, they sought out a local machine shop to serve as a contract manufacturer to keep overhead low. CVM ordered their first units and installed them with the help of CompView Audio Visual’s installation team.

“Now we had a couple of reference sites, and we set out to find more customers.” After their initial success, this process was excruciatingly slow.

“Operating room managers and surgeons are rarely early adopters of new technology,” Terry Trover, CVM’s marketing manager, explains. “There is a culture of ‘first do no harm’ in healthcare, so managers and surgeons are rightfully cautious.

*Nu-BOOM can be installed in just two days, and CompView Medical makes sure it gets input from hospital staff so it is positioned where they need it.*





Someone would see our product at a trade show, love the idea, but then it might be two or three years before they purchased." White's net investment on the venture totaled about \$1.5 million during this period, a sum he raised from his own funds, plus investments made by friends and family members.

### Building A Sales Channel

In 2006 White made a breakthrough in attracting the interest of GE Medical and Arthrex, both well-respected system sellers in the medical market. GE Medical was interested in bundling the NuBOOM with their portable x-ray equipment. Arthrex makes devices for minimally invasive orthopedic surgery. "We discovered that we could marry NuBOOM and DOCs controls to companies who build image-guided surgical systems," White reports. "It made perfect sense for them and for us." With an efficient sales channel in place, sales finally began to take off.

CompView Medical did not, however, turn over control of the installations to their resellers. By this point the company had invented a process they trademarked as Perfect Placement, where they enlist the help of the surgeons, anesthesiologists and nurses who will actually be using the system to position the product before it's permanently installed.

"We fly out to the hospital, meet the delivery truck at 8:00 a.m., unpack our equipment at the dock, wheel it up and partially assemble it in the OR," Trover explains. "By 10:30 we're ready for the surgical team, who help us with the final position of the NuBOOM."

At this point the installers have attached a set of temporary legs to their system, as well as the booms and monitors. They will spend up to an hour with the hospital personnel, carefully adjusting the system to make sure that the monitors can be set comfortably, that the cabinet is close enough to the operating table so that camera and instrument cords all reach, that the team has room to access the patient. "Because we work with the actual users and their equipment, we consistently get better results than an architect, and there's no need for the delay or expense of architectural drawings," White says.

The technicians spend the rest of the day installing the surgical equipment, video

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and control systems, then come back in the morning for final adjustments and training. "The whole process takes two days, and we can schedule it at the hospital's convenience. Very often we'll do the installation over a weekend when the OR is shut down anyway," Trover adds.

The company has grown each year since 2008, with revenues exceeding eight figures in 2012. CompView Medical now has 14 employees plus 10 more dedicated to NuBOOM at the manufacturing partner.

"Our prospects are quite good," Trover says. "It's very hard to gain acceptance for a new medical product, but once you have it, sales can grow exponentially." Even bet-

ter, White says that the use of minimally invasive techniques is expanding rapidly in the coming years.

CompView Medical is now in the process of introducing the NuBOOM U, designed for use in hybrid operating rooms that combine the ability to do minimally invasive and traditional surgery. "We are now FDA-registered and ISO 13485-certified," White says. "It was very challenging to get to this point, but we're beginning to see what we've been working for." **CI**

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