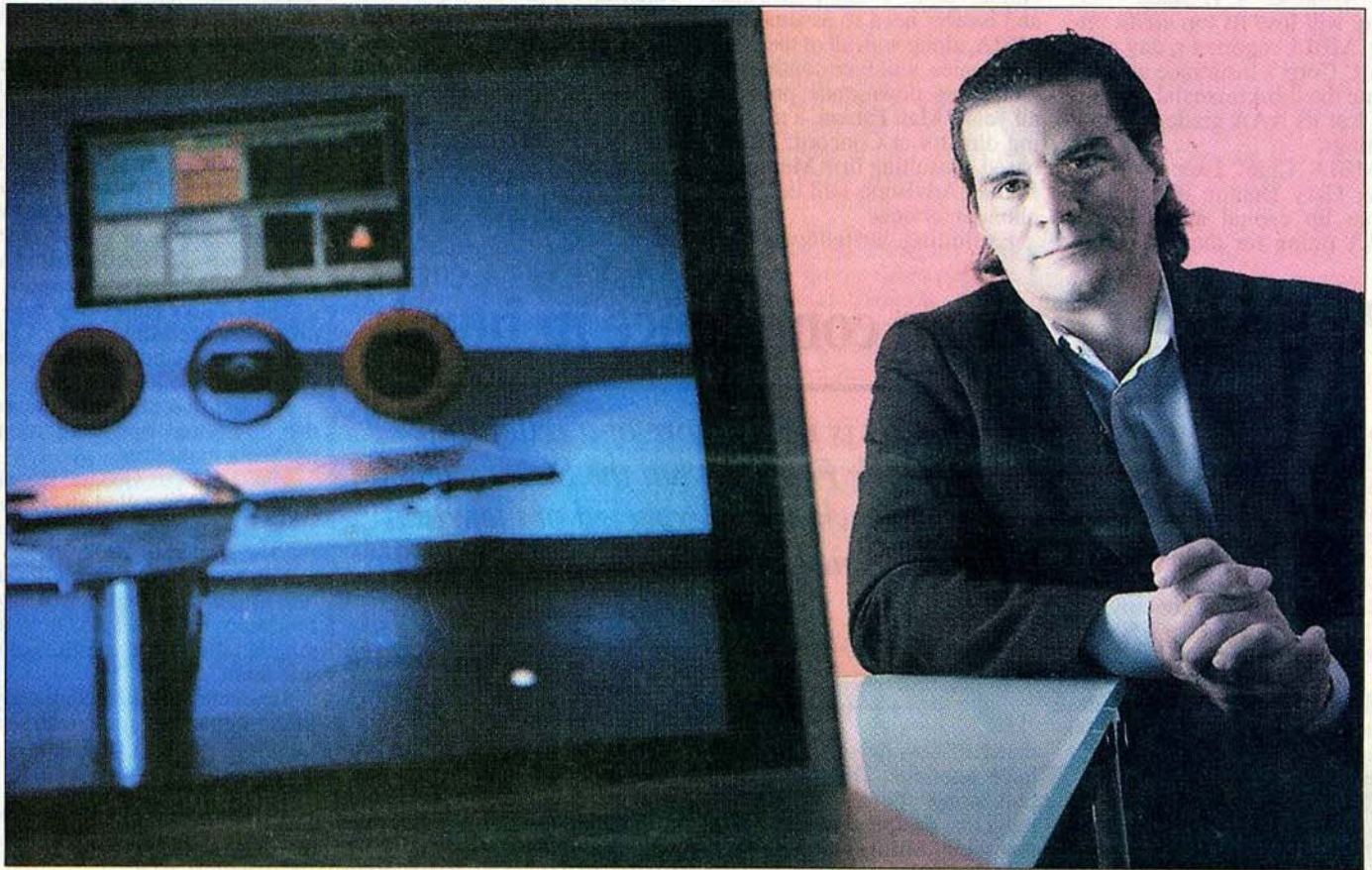


# SURGERY ON THE OPERATING ROOM



Kathleen O'Rourke/Staff photo

Dr. John Mangiardi of Greenwich, who founded of Optimus Services LLC in 2005, shows a mock-up of the company's Integrated Surgical Environment. The firm calls its product a more efficient and safer operating facility.

## Greenwich doctor helps clean up hospitals

By Peter Healy  
Staff Writer

During the latter phase of his 30 years as a neurosurgeon, Dr. John Mangiardi of Greenwich decided the operating room itself needed major surgery.

Hanging lights and surgical equipment, cluttered work areas, wastebaskets, wires on the floor and hard-to-clean corners cause infections and mistakes, many of which are fatal, he said.

Mangiardi, 57, retired in 2006 from his surgical practice at Cabrini Hospital in New York City. He founded Greenwich-based Optimus Services LLC in 2005. The company has five full-time and eight part-time employees and an office at 79 E. Putnam Ave. in downtown Greenwich.

The company plans to design and build brighter, cleaner, safer and more efficient operating rooms at hospitals and ambula-

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tory surgical centers nationwide.

"The basic design of an operating room hasn't changed since World War II," Mangiardi said. "I am not telling people how to operate. I am just providing a better environment in which to operate."

The Optimus operating room is 600 to 700 square feet to allow more space for more high-technology equipment, up from the standard 350 to 550 square feet, Mangiardi said.

He described the Optimus Integrated Surgical Environment as a "room within a room."

A footwide shell space around the operat-

ing room contains the lights, X-rays, digitized patient information and video screens.

A handheld wireless device controls those functions and the operating table, eliminating wires and hoses on the floor.

Nonporous materials replace plasterboard and paint, which can trap germs. A robotic device cleans the floors, which have rounded corners.

Titanium dioxide, which is ingrained in the walls and flooring material, sterilizes the room when exposed to light, Mangiardi said. Ozone gas sterilizes the room once a week, he said.

Optimus is working with 14 outside companies to design and build the surgical environment, which will cost about \$1.8 million, Mangiardi said. The company has raised a couple of million dollars in startup capital and is seeking to raise several mil-

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lion more from private equity firms, he said.

Two prototype Optimus operating rooms are slated to be built at an ambulatory surgical center in Albuquerque, N.M., and two are planned at New York-Presbyterian Hospital of Columbia University in New York, Mangiardi said, adding that Columbia won't pay full price for them because they are prototypes.

The first surgical environments for which customers will pay the full amount will be ready next year, he said.

Mangiardi sees a big potential market. Half the nation's hospitals need to rebuild their operating rooms in the next five years to meet new standards related to advanced technology, he said.

The United States has 5,747 hospitals, according to the Chicago-based American Hospital Association.

At least two of them believed the traditional operating room needed a makeover.

Massachusetts General Hospital in Boston installed an "Operating Room of the Future" in a renovated area in 2002.

The hospital has four ORs of the future and expects to add four more in 2011, said Dr. Warren Sandberg, an anesthesiologist there.

Sandberg, who helped develop the new operating room with sev-

eral colleagues, said the hospital decided about a decade ago to revamp the operating work space.

"Leading surgeons saw an opportunity to make improvements in ergonomics," Sandberg said.

Five years ago, the University of Maryland Medical Center opened a 52,000-square-foot "OR of the Future" facility, which has 19 operating rooms, according to its Web site.

The Maryland operating rooms have built-in imaging systems with mobile monitors to assist surgeons. Other monitors give the surgical team immediate access to patient information, such as lab results and CT scans.

The Wallingford-based Connecticut Hospital Association supports the improved OR concept, but does not endorse any company, spokeswoman Leslie Gianelli said.

"We support a clean, efficient operating environment, so any steps that are being taken toward that end are a positive development," she said.