



Melissa Jacobs

Chris Orlando, left, and Mark Ortenzi of ScaleMatrix walk through its Kearny Mesa facility. ScaleMatrix is a data storage specialist and it also lets clients use the company's patent-pending cabinet technology in their own facilities.

ScaleMatrix Offers To Put Its Highly Efficient Data Center Technology On-Site

BY BRAD GRAVES

Executives at **ScaleMatrix** think there might be more than one path to growing their company.

The 5-year-old computer data storage specialist — which offers cloud services, colocation and managed IT — is busy filling up its data centers in Kearny Mesa and Houston. Part of its growth has come from meeting the sizable data storage needs of San Diego's

life science community.

Its owners have realized, however, that one of their best assets could work even harder.

That asset is ScaleMatrix's proprietary server cabinet design. It's different from its competitors because it has a unique way of keeping the servers inside cool while packing more electronics into a single cabinet.

Today, subsidiary **ScaleMatrix**

Cabinet Technology lets clients use the patent-pending cabinets, which are painted the company's signature green.

The twist is that clients are using the cabinets under their own roofs.

Antivirus software maker **ESET** has its own installation of ScaleMatrix cabinets in its downtown San Diego office. Not far away, on San Diego's waterfront, the **USS Midway Museum** put some green server cabinets in the hull of the retired

aircraft carrier.

"That was a fun install," said **Chris Orlando**, who co-founded the company with CEO **Mark Ortenzi**.

Roughly 5 percent of ScaleMatrix's revenue comes from cabinet technology, said Orlando, the company's chief sales and marketing officer.

"We expect it to grow," he added.

The business takes its cabinets to

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market through data center systems integrators, Orlando said. Cabinets are made in Pennsylvania.

A Fast-Growing Feat

ScaleMatrix ranks fourth on the **San Diego Business Journal's** 2015 list of fastest-growing private companies. The business did it by turning in 476 percent revenue growth over two years, finishing 2014 with \$11.73 million in revenue.

ScaleMatrix is the provider of choice for the life science and genomics community, said Orlando, in part because it can handle large data sets and the high-performance computers that manipulate the data.

The company has data-storage deals with the likes of the **J. Craig Venter Institute, Synthetic Genomics Inc., Diagnostics and Dexcom Inc.** ScaleMatrix has other big-name customers which it can't name.

A customer sequencing genomes needs "considerable computational capacity," Orlando said. "... It's not commodity type computing." Servers are tasked with data analytics, computer reasoning and deep learning, which require more computing power — not to mention better cooling.

Life science and genomics companies prefer ScaleMatrix because of the security at its facilities as well as high audit standards, Orlando added. Storage of life science data requires much more care and regulatory oversight than storage given to conventional business data.

Security at ScaleMatrix includes individually locked cabinets which



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ScaleMatrix co-founders Mark Ortenzi, left, and Chris Orlando realize the special requirements of the life science and genomics community, including the need for more computing power and better cooling. There is also a need for more care and regulatory oversight than that given regular business data.

require biometric data (a touch of the thumb) for entry. Biometric locks and security cameras keep track of everyone who has had access to a particular cabinet. Server cabinets sit behind several sets of locked doors, and armed guards keeps watch over ScaleMatrix's facility.

Security is like a fortress.

Keeping Cool

Ortenzi and Orlando have worked together for nearly 20 years. They know that the enterprise computing market can be a rough place. So when they set out with a new way of building a cabinet, they made sure they were able to defend their intellectual property.

ScaleMatrix is pursuing multiple

patents on its cabinet architecture, which packs servers in an unusually dense area, and cools those servers in an unconventional way.

The traditional data center is built on a raised floor. A cooling system blows air up from the floor and into the servers in the racks. An evaporative cooling system then purges the heat.

ScaleMatrix does not have raised floors. Its specialized server cabinets send cool air down the front of a server rack, through the hot computer equipment, and then up the back of the cabinet and through a cooling agent. Large pipes near the ceiling of the data center carry water that cools the air circulating among the servers. Unlike the evaporative system,

water in a ScaleMatrix installation runs in a closed loop.

Orlando said his competitors go through a lot of water — an expensive commodity in San Diego — while ScaleMatrix uses a fixed amount.

Orlando proudly says the temperature at the top of a server rack varies by less than 2 degrees from the temperature at the bottom. Other data centers get as much as 15 degrees of variation from the bottom to the top of the rack, company officials said.

An Expanding Footprint

Over the years, ScaleMatrix has been steadily filling the floor of its San Diego data center with green cabinets. There is still room to grow on the main floor and on a balcony level.

Because of the growth — including the addition of genomics customers — the company added to its backup diesel generator capacity early this year. It needed a 200-ton crane to bring in two power units, which are essentially diesel locomotives housed inside of shipping containers. The investment was in the millions of dollars.

ScaleMatrix's expansion plan extends outside San Diego, to multiple cities. The first out-of-state leap was to the Houston suburb of Katy, Texas. It opened its data center there in 2013.

The business currently plans to put a third data center in downtown Chicago and a fourth center in Virginia — either in Richmond or suburban Washington, D.C.

Each center targets a specific market. While San Diego focuses on life sciences, genomics and health care, Houston focuses on energy and health care.

Orlando expects Chicago will focus on financial services while Virginia would focus on a broad mix of categories.

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