

BIOTECH, CANCER, IT

Dendreon Leans on California 9-1-1 Software Vendor to Keep Provenge Trains on Time

Luke Timmerman 3/8/10

If Dendreon makes any information technology screw-ups with its experimental treatment for prostate cancer, it could be a matter of life and death for patients. That's why the Seattle-based biotech company has turned to a custom software vendor with a reputation for supporting the [California 9-1-1 system](#) for 12 years with zero downtime.

The Dendreon IT contract is held by [Direct Technology](#), a Roseville, CA-based custom software developer with a 40-person office in Bellevue, WA. Direct Technology, formerly called DirectApps, has forged a close relationship with Dendreon over the past three years, under a contract that gives it full responsibility to support, operate, maintain, and enhance [Intellivenge](#), the program that oversees administration of sipuleucel-T (Provenge). I heard about this from talking to Wud Pocinwong, a senior vice president with Direct Technology in Bellevue.

Dendreon (NASDAQ: [DNDN](#)) has made headlines for years with its first-of-a-kind treatment that actively stimulates a patient's immune system to fight cancer cells as if they were a virus. The drug has shown it can help men with terminal prostate cancer live a median of 4.1 months longer than a placebo, with minimal side effects. Dendreon stock has boomed on this finding, enabling it to raise about \$630 million to build up the [manufacturing](#) and marketing muscle so this drug can reach the \$1 billion-plus annual sales potential that analysts project.

The opportunity is thought to be so lucrative because about 27,000 men in the U.S. die of prostate cancer every year, and many don't want the side effects of chemotherapy alternatives. The FDA is reviewing Dendreon's application to start selling the drug in the U.S., and the agency has a deadline of May 1 to make its decision. Part of that review will cover the [Intellivenge](#) tracking system.

"It's an indication of the trust that Dendreon has in the skills we have in supporting their business," Pocinwong says.

Keeping this system operating smoothly is no small task. The Dendreon drug isn't just a vial you stick in the fridge and pull out when you need it.

Instead, the Dendreon drug is based on certain white blood cells withdrawn from the patient. It starts when a patient goes to a doctor's office and has blood withdrawn. The blood is sent a filtering center for a procedure called leukapheresis, in which certain white blood cells are isolated. Those cells are shipped again to a Dendreon manufacturing center. That's where the cells are incubated with a genetically engineered protein found on prostate cancer cells, called PAP, that's fused to an immune-boosting compound, called GM-CSF.

The combination of drug and cells is left to incubate a couple of days. This is supposed to "teach" the patient's own cells to recognize hallmarks of prostate cancer cells, and fight them like an invading virus. The revved-up cells are shipped back to the clinic, and re-infused into the patient. One month later, after three of these infusions, the patient is done with treatment.

While this precious package of blood cells zig-zags around the country, it has a bar-code slapped on it so that doctors, the company, or the FDA can keep track of its status every step of the way. This intricate supply chain relies on a number of things to keep rolling—reliable commercial shipments for one, and a reliable IT system for another.

Dendreon hasn't had trouble executing these methodical steps in clinical trials, but that's a relatively easy task compared to keeping up market demand from a pool of potentially tens of thousands of patients simultaneously.

If Dendreon suffers a serious stumble in keeping up with demand, doctors and patients are sure to howl with indignation. Dendreon hasn't said publicly what would happen if a patient got somebody else's cells by mistake, although it's an unhappy thought. If such a mistake were caught early, and the patients had similar blood and immune system types, then the patient would probably live, said David Miller, president of Seattle-based [Biotech Stock Research](#), in an exhaustive analysis for clients on February 27. Otherwise, such a snafu "clearly could be fatal," Miller said.

You can imagine how the FDA, and the stock market, might react.

So, that's a long explanation for why IT matters to Dendreon. Pocinwong was fairly tight-lipped about exactly what his firm does for Dendreon, citing a non-disclosure agreement, and Dendreon wouldn't comment for this story.



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But it's clear that Dendreon sought out a contractor with a record of reliability. Direct Technology was founded in 1995, has 250 employees, and is profitable with no debt, Pociwong says. Its customers include Microsoft, T-Mobile, Pacific Gas & Electric, Southern California Edison, Seattle Children's Hospital, and the California 9-1-1 program office, among others.

Dendreon wrote the proprietary software code for Intellivenge in-house, Pociwong says. When Dendreon looked for help from a vendor, it was referred to Direct Technology (Pociwong wouldn't say who introduced the two companies). The vendor was brought in to do quality assurance checks on the software about three years ago, Pociwong says, although he didn't provide an exact date.

Direct Technology won the contract, which involves maintenance, operation, and management of the Intellivenge system, Pociwong says. He wouldn't say how many people at Direct Technology are working on the Dendreon program, what they are doing to complement Dendreon's internal staff, or how much the contract is worth. But he noted that Direct Technology's Bellevue, WA, office has 40 employees, and even though it has some major corporate clients like the ones listed above, the Dendreon contract "is very significant for us."

If there's a common thread in what Direct Technology's customers need, it boils down to keeping track of big customer bases with solid documentation, for a specific task that doesn't come straight out of the box. A custom system, by definition, means that a customer uses about 90 to 100 percent of its features, instead of about 20 percent of the features packed into the usual out-of-the-box business software, Pociwong says. For California 9-1-1, Direct Technology designed and implemented a system to track "ring times, talk times, hold times, transfers," in order to help lawmakers measure how well the 9-1-1 was responding to citizen calls for help.

Armed with that information, the California 9-1-1 system was also able to spot patterns that have enabled first-responders to know how well they were doing their job compared with their stated goals, Pociwong says.

Still, Intellivenge, like every project for a custom software developer, is different in its own way. The time to prove it works is now, as the FDA prepares to deliver its verdict on whether the product is ready for sale. And if it's approved, Direct Technology will have to prove over time that it's just as reliable as the California 9-1-1 experience indicates.

"Our responsibility is to make sure the system is up and operating," Pociwong says. "Those things are in place."

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