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the surgical spider

A simple solution to a complex problem

American architect, designer, author and inventor R. Buckminster Fuller, developer and patent holder of the geodesic dome, said he just invents, then waits until man comes around to needing what he invented.

Once he finally decided what he wanted to do with his life, Brent King took an opposite approach, determining the need first, and then inventing a solution.

"My father and brother were engineers," says King, Vice President of Operations (and one of the owners) of Tenet Medical Engineering. "There was no way in hell I was going to be an engineer. I was a kid looking for my own path."

He really liked the idea of biology and medicine and his strengths lay in mechanics

and machines.

"The human body was a cool machine," he says. "And I liked biology course work. But near the end of my degree, I realized I didn't have the marks or the mentality to be a doctor."

A friend of his suggested he stop fighting his natural talents and become a medical engineer.

"It was my passion and what I was good at," he says. Armed with a biology degree from the University of Calgary, he entered the University of British Columbia to get his engineering degree.

"I steered every project with my second degree toward medical. I had a clear vision of what I wanted to be and made as many contacts in my field as I could."



With a friend, King started a consulting company and the two became known as the guys who could get things done. He worked first with Pynq Medical, developing a fluid delivery device for trauma patients. Then, in 1997, he returned to Calgary, answering an employment ad from Tenet Medical.

"It was me and Ken Moore and the receptionist. I brought my computer in from home and set-up in a closet in borrowed



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space. A few doctors backed us up with ideas and we started to try to satisfy their needs."

But the need for an income was stronger and King left for other employment, returning on evenings and weekends to work on Tenet projects. It was a good move. King worked first at a magnetic bearing company, gaining experience with systems; then at an imaging company where he developed rapid design experience.

"The stuff I learned I needed, and it made Tenet strong," says King.

In 2002, King became a partner in Tenet and focused on building products like the Spider. The Spider is a mechanical replacement for a human assistant, positioning limbs during surgery.

"In many cases, it's a nurse or an assistant or another surgeon holding the body still. This replaces them and frees them to do more important tasks in the OR."

The Spider attaches to any OR table and is adaptable to any part of the orthopedic patient, including arm, wrist, elbow, ankle, leg, or knee. It allows the surgeon room to move, and is rigid, so it stays perfectly still

when in place.

"It lets the doctor decide where the limb is, rather than verbally describing it to the assistant," says King. "Now the surgeon says, 'I move the arm where I want and it stays there. I'm in control of positioning.'"

The Spider meets a real need for greater efficiency of both people and limb positioning in the operating room.

"This came from a surgeon's suggestion. It's one of our core strengths; listening to surgeons and better identifying products of mass appeal," says King. "I kept hearing about problems with positioning and why—space and staff. They tell us these stories and we look at creating something that will solve that problem. We made sure our product was flexible and could move across the body area."

The Spider, he says, is in the same price range as his competitors' machines, which each handle only one body part. Before the

Spider, a hospital would typically have to purchase five different pieces of equipment. Moreover, other equipment was inflexible; you would set it once then not be able to move it again during surgery. The Spider, in contrast, can continually modify positioning during surgery.

There are more than 2,200 units in 50 countries worldwide, with room for a much larger market.

"We continually add new procedures to Spider's repertoire as surgeons come to us and need accessories to hold this retractor or that scope," says King. The Class 1 product is registered with the FDA,

Health Canada and the European Union.

"It's a reasonably simple solution to a complex problem," says King of the Spider. "From a company point of view, surgeons' ideas drive innovation in the medical device industry. Doctors suggest ideas; people want help developing them; and they get that with us." ●

Surgeons' ideas drive innovation in the medical device industry



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