



The Innovators

Conversations

on the *Cutting Edge*

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September 2009

Interview with Al DiRienzo

**President and CEO, Blue Highway LLC.
A Welch Allyn Company**



As Senior Vice President and Chief Science and Technology Officer at Welch Allyn, Al was responsible worldwide for Innovation activities. Previously, he held positions at Philips Medical Systems, Siemens Medical Systems, Honeywell/Sperry Aerospace, and General Dynamics Land Systems.

Al has spoken to the U.S. Senate Manufacturing Caucus concerning the impact of Research & Development on Manufacturing Innovation. He serves on the Columbia University Center for Advanced Information Management External Advisory Board, the Johns Hopkins School of Medicine Alliance and the National Biodefense Science Board. He was recognized by Frost & Sullivan as a Medical MindXchange Most Valuable Thought Leader, as well as Technologist of the Year (2009) by the Technology Alliance of

Central New York. Al has a degree in Computer Science from Old Dominion University. He can be reached at adirienzo@blue-highway.com

Interview conducted by Doug Berger, INNOVATE doug@innovate1st.com

Doug: Let's begin with a brief background on Blue Highway and its reason for being.

Al: Blue Highway is a wholly owned subsidiary of Welch Allyn and a separate legal entity. Welch Allyn is a privately held, 95-year-old leader in frontline medical diagnostics. We provide instruments for eye, ear, nose, blood pressure, heart, women's health and patient monitoring in hospitals. You would find Welch Allyn devices in 95% of frontline care settings.

Blue Highway is responsible for radical and breakthrough innovation and to a lesser extent, incremental innovation. A few years ago, Jack Rudnick, (then General Counsel) and I (then Chief Science Officer) proposed to the Welch Allyn Board of Directors the creation of a separate entity, which today is Blue Highway. We all saw that innovation inside Welch Allyn was very focused on taking care of current customers and day-to-day operations. We opened the doors March 1, 2008 with a focus of five-plus years out.

Doug: Is it the mission of Blue Highway to look for product and services areas and business models that fit within the current business of Welch Allyn, or do you have license to hunt beyond that?

AI: Blue Highway's mission is to create and deliver innovative, intellectual capital to its customers. Today, our primary customer is Welch Allyn. They have first right of refusal on anything that we create. We are also working with consumer electronics companies, defense companies and non-US government health departments. At some point, Blue Highway needs to be self-sustaining. Our target for achieving that status is six years. Though we're wholly owned, we would like to be minority owned by Welch Allyn in the future, because it opens up a number of other funding possibilities for us.

As for our vision, we are about prevention, diagnostics and screenings. Welch Allyn is primarily focused on diagnostics. They are not so much in the prevention space. Also, we can look at minimally invasive therapies. It may be a device, methodology, process, service, or a new tool. We're also focused on lowering the cost of healthcare and better clinical outcomes. Welch Allyn sees Blue Highway taking them into adjacent markets and totally new markets.

Doug: Please summarize some of the key accomplishments over that year and a quarter.

AI: We operate like a well-funded start-up and we run independently from Welch Allyn. When we opened the doors, we had to get the corporation's name, find space, fill key staff and establish the entire infrastructure for communications, business processes and methodologies. We do leverage the things from Welch Allyn that make sense.

Our portfolio is broken down into about 20 percent incremental innovation, 50 percent radical or disruptive innovation, and 30 percent scientific breakthrough research. Blue Highway only does idea to proof of concept, and then there is a transition. We bring the Welch Allyn marketing manager, project R&D lead, and other touch points into the transition. The 20 percent insures that we have credibility and value with our parent corporation. We knew that they had some pain points and by year end 2008, we had delivered four opportunities to Welch Allyn. Two are due to hit in 2010; one more in early 2011, and the other one is in preliminary clinical trials.

On top of that, we submitted six grants and won five to seed fund basic scientific research. The six grants we submitted last year brought in an additional \$2.5 million above Welch Allyn funding. Blue Highway also freed up about \$1 million dollars that went to the Welch Allyn product development organization.

When it comes to staffing we are very small but operate with high leverage. We leverage graduate students and researchers around the world.

Doug: You are conducting research yourself with your own staff and you're doing outreach throughout the global community relevant to your mission?

AI: Every Blue Highway research fellow has their own research and they have outside collaborative research with academia, government labs, serial inventors and other companies. They act as a portfolio manager from a financial and progress perspective. We developed a Triage Process that we use to determine whether we're going to proceed or not. Within nine months we vetted approximately 130 ideas. We have roughly 15 projects that are active and ongoing.

We have successful working relationships with academicians who have typically been closed to mainstream industry for various reasons; disappointment in the way that mainstream industry might want to interact from an intellectual property or publishing perspective, for example. They have actually sought out Blue Highway before we've gone to present to them, and then we've had some very nice follow ups.

We look for a winning scenario for all involved, which of course, includes our parent company. We do look to publish, submit grants and go after the basic research. We will do animal studies, which Welch Allyn will not typically do. We will fund basic science. Welch Allyn typically will not. Even mainstream corporations, like a General Electric, will typically do advanced technology, but they don't really progress very much in the basic scientific area. We're non-threatening to the researchers. We want those researchers to come back to us time and time again. Even if we can't leverage their expertise or their idea, or whatever it may be at this time, we will try to help them by putting them in contact with those who can help them.

Doug: It seems that you are filling some unmet need in the larger ecosystem. You are also being sought out by venture capital firms and government agencies.

AI: We do not seek venture capital funding, but we've had a number of venture capitalists out of New York City, Boston and the San Francisco Bay Area approach us to take a lead at the very early stages. They don't have the capability to vet and fund very early stage science, whereas they would be interested in doing the A rounds of funding.

We've been approached by other governments, including the Netherlands, Singapore, Northern Ireland, Spain and Germany to work on some of their pain points. We've been approached by a number of medical institutions and health payers looking for things that would help them to operate more efficiently.

Doug: What are some of the areas in which governments are approaching Blue Highway?

AI: First, it's how can we leverage research? They have stranded intellectual property in their entities just like we do in ours here. Where might we establish collaborations with international organizations that could be beneficial? Some of their pain points have to do with reducing healthcare spend. What science, technology or workflow can be brought to bear that would help them realize cost savings and provide better clinical outcomes in patient care and reduced medical errors? They're looking to cross-pollinate their researchers.

Governments are dealing with many of the same pain points regardless of their health care system: aging population, increased costs of healthcare, chronic disease management issues, and some have infectious disease issues. Some governments have approached us and said, "You can use our community as a test bed." Not meaning the people, obviously, but to try out proof of concepts within our real world settings to see how they work out.

Doug: What did you leverage from Welch Allyn that meaningfully contributed to your start-up?

AI: I had the opportunity to take preeminent researchers out of Welch Allyn and we all came with a lot of contacts. We sit on university boards, government boards, and venture capital boards. The researchers that I was able to bring over are the most prolific IP holders within Welch Allyn. On top of that, they're responsible for hundreds of millions of dollars in Welch Allyn sales over the years.

I would have been foolish to set up a separate benefits package, payroll, human resource organization, things of that nature, for Blue Highway. So, we leveraged those shared services which made sense.

Doug: Beyond that which you leveraged and built, what else did you focus on?

AI: For the first nine months, at least 60% of our focus was on operational excellence. One of the key things that we established and we keep it close, is a Triage Process that allows us to screen or vet ideas very quickly, whether internal or over the transom types of ideas. Entities like Blue Highway are held to a higher standard by the parent. So, we actively worked to keep the communications open, trying to make sure that we're visible.

The other two focus areas were product excellence and customer intimacy. We know our parent could not wait five years for our first roll out. We wanted to find real needs with a lack of focused resources, or the bandwidth to take them on, and try to address those very quickly so we could gain credibility. We met with all of the global category managers, as well as their Board of Directors just to try to stay top of mind, which is pretty challenging, quite honestly. Customer intimacy was a lesser challenge, because we're already very intimate with our parent and thought leaders.

Doug: In the numerous interviews and extensive research we have conducted with executives, we uncovered a universal challenge - bridging a new technology or new commercial concept back into the mainstream organization.

AI: Yes. Julie Shimer, Ph.D and President and CEO of Welch Allyn, said, "You're overwhelming Welch Allyn's pipeline. We can't take the opportunities you're presenting to us so quickly." We presented six opportunities and they ended up taking four. We established a process working with Welch Allyn to allow for a nice transition into their product portfolio, quality and regulatory systems. That took a little bit of doing, because we move much faster and we are unconstrained.

Doug: Please continue talking about your progress these first 15 months.

AI: When I look at the things that we're actively working, they could be significant game changers for healthcare. Our aim is for a number of them to be adopted. The medical community does this cautiously and it might be 15 years before something becomes mainstream.

I am really proud of how this team has executed, and the passion of each and every member. The management team spent a considerable amount of time trying to decide the right core values. One is Openness . . . openness to new ideas and to radical ways of thinking. We understand that a lot of what we do will fail because so much is highly speculative. We're really about managing risk because so much of what we focus on is unknown. There is no fear of bringing ideas forward or talking about new courses of action because there's no penalty. We're a very humble group because arrogance is one thing that we would not tolerate. We just want to be very approachable internally as well as externally.

We have a Creative Spirit. We talk about uninhibited and fearless creative thinking. We try to be big thinkers. We try to make sure that the tools and environment are in place to get that job done.

The thing that holds it all together is Honorable Behavior. We always want to be above reproach.

Doug: Reflecting back on these last 15 months, what would you have done differently?

AI: I would have made us minority-owned right out of the gate. That would have allowed us to be recognized as a small business. We would have been able to go after small business innovation and research funds or STTRs.

I would have established a variety of communication mechanisms with our parent earlier. People in our parent want to be kept top of mind. There are multiple groups and levels in the organization, to whom you need to get different messages and with whom you want to encourage bringing their ideas back to you.

Doug: Al, thank you very much for sharing with us your aspirations, insights and the accomplishments of Blue Highway.

