

Q&A with Dr. Henry Yaffe, Founder and President of New Ridge Technologies providing Fiber Optics Test Equipment and Spectrum Analyzers for Telecommunications Applications



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CEOCFO: *Dr. Yaffe, as the founder of New Ridge Technologies, would you tell us the reason for starting the company?*

Dr. Yaffe: We started New Ridge when the telecom bubble burst in 2003. I had been the founder of a fiber optics company that raised over \$60 million, and our lead customer went bankrupt. After six months of trying to restructure, we decided that we would liquidate that company because our product demand mostly evaporated. I bought and repurposed intellectual property assets from the investors, and turned that into New Ridge Technologies, re-fashioned as a fiber optic test and measurement company. We started New Ridge by servicing many of my previous customers while adapting to the new post-bubble market realities. We made it through to the revival of the telecom industry. And then, I guess, towards the end of the early-2000s, we started developing new products that addressed the new internet 2.0 communication industry needs. That is how we have evolved into what we are today.

CEOCFO: *Can you tell us what the importance is of what you do in bringing the possibilities of telecom to light?*

Dr. Yaffe: It is pretty astounding what has happened in the past 20-30 years in telecommunications. Few of us remember the term 'long distance' or how astounding it was when Sprint audaciously offered phone calls anywhere in the US for 'only' a dime-a-minute. My grown kids certainly do not have any idea of that concept. It has gone the way of the record player and the like. But my career has been spent directly involved in developing many of these revolutionary advances in optical communications. And what we do at New Ridge is key to enable our customers; those that make the fiber optic equipment, and the network operators that transmit all the information, design, verify and test their equipment. The crucial purpose of testing is to make sure the communications equipment meets the specifications necessary to get all this bandwidth through the fiber optic 'pipes' such that we can continue to expand the capacity of the communications networks in the most cost efficient way possible.

CEOCFO: *Who does the testing?*

Dr. Yaffe: The manufacturers of the telecom equipment and the network operators do the testing. I develop, manufacture and sell them the test equipment. One half of my business is the fiber optic test equipment and software. It goes to the telecom providers and the telecom equipment makers so that they can develop, specify and certify the robustness of their products and offerings.

CEOCFO: *What is the geographic range of your customers?*

Dr. Yaffe: Our customers are worldwide. I sell primarily into North America, Japan, and Europe. Those are my largest markets. We are a nimble company, and we have a well-established brand. Customers come to us for a specific set of solutions and expertise.

CEO CFO: Your founding products, polarization mode dispersion sources, were recognized as the ‘Cadillac’ of the PMD sources. How did you get to be such an important part of the mechanism?

Dr. Yaffe: Polarization Mode Dispersion, or PMD, was a big problem about 20 years ago. My previous company was the first out of the gate to remediate that problem. And I really established a brand and worldwide reputation for polarization expertise. When we transitioned to New Ridge Technologies, the PMD sources were not used to remediate PMD but to help quantify the problem in a way our customers had never been able to do before. They could test, quantify and specify how their equipment would respond to this deleterious effect in the network. We rode that coat-tail for a while, and we were able to use that to get into customers, hear their needs, and that developed into new products. They came to us because they know when New Ridge came with a solution; it would be a high quality product that would address what they are looking for: not just what we could make, but what the customer really needed.

CEO CEO: Would you give us a short synopsis of your different products?

Dr. Yaffe: The NRT-2500 was a product that a customer asked us to develop because we are experts in fiber optic polarization. They needed a special product for polarization control, to help them change the nature of the light going into the fiber, in a controlled way. That was the birth of the NRT-2500. Now the NRT-2500 has six different polarization modes of operation. A single NRT-2500 replaces multiple, single-function, fiber optic polarization products offered by our competitors. With the NRT-2500, customers can buy them all integrated into one box. Over the past few years New Ridge’s NRT-2500 has been the first to introduce a number of new polarization control features. These functionalities have been copied by our competitors’ into their products. While this is threatening on one side, it is mostly gratifying because New Ridge is seen, and respected, as a thought leader within the industry, even by our competition.

The newer NRT-3000 polarimeter is the cousin to the NRT-2500 polarization control platform. So, whereas the NRT-2500 generates polarization states in a variety of ways, the NRT-3000 polarimeter measures the created polarization states. The NRT-3000 is often used to confirm the generated polarization states or measure the response of telecom equipment to the NRT-2500 input. They work together quite well and make a natural pairing.

Recently, because of our expertise in fiber optical polarization effects, customers asked us to advise them on a strange mysterious phenomenon that was causing failures in their fiber networks. We advised them that it was related to lightning, and explained how it affects modern communication systems. We published a blog on the topic that was very well received. But more importantly, we helped them engineer remedies to the polarization induced outages. We were able to show that the NRT-2500 could be very useful in the lab to (safely) simulate the very fast and abrupt polarization changes caused by lightning. And the NRT-3000 was uniquely positioned to measure such ultrafast changes of polarization. We not only had the products, but because of close customer relationships, New Ridge was trusted to help identify this unknown phenomenon. Our experience enabled us to diagnose the problem, recognize a new market opportunity, and respond with new product solutions. Ultimately, this technology is applicable to many other challenges that our customers face and try to recreate in the lab.

The NRT-8000 is our newest telecom product. It is a compact optical spectrum analyzer and not a polarization related product. The NRT-8000 measures the wavelengths, or colors, of light coming out of the fiber. The NRT-8000 is unique in that it breaks the mold from typical spectrum analyzers. A typical spectrum analyzer would be the size of two desktop computers. But the NRT-8000 is about 5% of the typical volume and weight, merely the size of a small hardcover novel. And we only put in features that the telecom industry uses. We concentrated only on the applications our customers do every day in their telecom measurement environment. Therefore we could offer a much smaller, much more portable, and much lower cost product than typical spectrum analyzers.

We have addressed the change in the test and measurement market that has evolved over the past decade or so. There has been a lot of price pressure on test and measurement products. We all want to pay less per month for our cell phones, internet, and cable TV. This consumer pricing pressure gets pushed down, through the telecom provider businesses, affecting their ability to invest in testing, and thereby on test equipment. This puts pressure on my business, in a structural way, and it has caused me to fundamentally rethink how to develop a product. What do our customers really want? What do they actually do in the lab? How many ‘bells and whistles’ are they willing to pay for? With the NRT-8000, we have made a device that simply does what engineers do every day in the lab. And the NRT-8000 does it very well, at a very good price, in a very small size. In fact, with the NRT-8000 we have created an entirely new market segment for fiber optic spectrum analyzers, and the industry is starting to respond. Here too we have been the first with a new idea, only to be followed by competitors who have joined the compact spectrum analyzer bandwagon.

New Ridge is also leading the fiber optic test and measurement industry in exploiting Internet of Things (IoT) for our instruments. Specifically, you can use your smart phone or tablet to control NRT’s test and measurement environment from anywhere at any time. This is a new concept in the optical test and measurement world. I would say it is generational. For people of my ‘vintage’ it is kind of shockingly cool. While for ‘millennial’ engineers, it is routine to pick up the phone and try to control their world. I think IoT is an unstoppable natural technology progression, one that New Ridge fully embraces. We seized the opportunity to implement an IoT platform with the NRT-8000 new product development. We are seeing customers respond very openly to it. Some are saying this is ‘neat’ and asking for demos. While some are a little more hesitant as they get comfortable with IoT. The NRT-8000 is our first application of IoT infrastructure into NRT’s products. We are currently rolling IoT into our other products, to be released in the future.

CEOCFO: You mentioned competition. What separates you from other companies creating these test analyzers?

Dr. Yaffe: In general what separates us from the other fiber optic test and measurement players is our ability, because of our modest size, to respond to customers in a custom way. We do not necessarily require multimillion dollar contracts to develop a solution for a customer as the larger test and measurement corporations. We can respond to people faster. It is our nimble ability that we have, due to our size, that has differentiated us. Our customers know they are going to get a good product as NRT can concentrate on their specific needs. The NRT-2500 and the NRT-3000 were direct responses to customers and their input. All of our products have developed this way over the past decade.

One aside that I would like to mention is that we have a new OEM business unit precisely developing custom fiber optic solutions for research laboratories, the United States government and its major contractors and agencies. Engineers have seen our technologies, they have used our test and measurement instruments in fiber optic applications, and then come to us asking for custom products to embed into their systems and research projects. We have been able to respond to that very well, leveraging expertise from a commercial product side into the OEM side. This is developing into a very nice business for us. These customers come and say they like us to adapt or extend our technology in one way or another. Those changes and improvements then flow in the other direction, back into new generations of our commercial products. We are feeding new developments in both directions.

CEOCFO: How do you get the word out there to potential customers or attract them? Do you do conferences?

Dr. Yaffe: I attend a couple conferences a year, usually big telecom conferences. I also market through the internet. It is one of my challenges to find a rep distribution network for New Ridge. Sales organizations are driven by commissions, so they tend to prefer the larger companies with large line cards. I have managed over the years to get some very high quality sales representation in certain regions, and those are the places where I have been most successful. They get out and they are my feet on the ground. In places where I am still developing my sales network I need to find the right salesperson who clicks; has the right set of customer connections and can get my product into the doors. Once a product is in the door, it tends to do very well, and we generate repeat business.

CEOCFO: Is the distribution done through partners?

Dr. Yaffe: In the United States, I usually work with sales reps. I have distributors when I target foreign companies. One of the advantages of overseas distributors is they take care of the importing and customs issues. That is breaking down a little bit from certain companies and countries. Because of the internet, customers are able to find me directly. And that is giving me a whole set of new challenges in countries where we have no distribution yet set up.

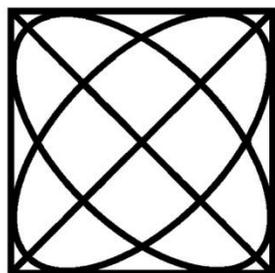
CEOCFO: How are you positioned with funding?

Dr. Yaffe: I am evaluating partners. I am talking actively with a number of people to work together on different projects. To date, New Ridge has been totally self-funded and organically grown. We are extremely proud of that. We've been able to spend 100% of our time and energy on customer relationships and improving our technology, as opposed to reporting to investors. I think one of the reasons I am reaching out to partners, strategic partners, and other companies like mine to work together on products is because it takes too long to grow purely organically and scale a sales organization. I am definitely talking to a number of people and look to have some relationships in the not too distant future.

CEOCFO: Why should people be interested in New Ridge Technologies?

Dr. Yaffe: With New Ridge Technologies, our goal is to bring quality, reliable, fiber optic functionality and test and measurement equipment to its customers, so they can provide the best services to their customers. The most important point that I want to make is that we take our brand very seriously. That is what compensates for our size. I think people know that when they call us, they will get a reliable integration between the quality of engineering and products. They will be pleased with that interaction, knowing that they do not have to worry about the products from New Ridge.

I think the world is looking for more and more communication, and wants access to everything, all the time, everywhere. At New Ridge we understand the desire for ubiquitous communications, and we are focusing our products to help our customers enable that vision. As long as we keep that straight, I think we will continue to be successful.



New Ridge Technologies