

Dr. Lobanoff discusses his entrepreneurial experiences and his journey developing Phorcides and Lochan.



MARK LOBANOFF

MD

COMPANIES: Phorcides, Lochan

CLINICAL PRACTICE: OVO LASIK + Lens, Minneapolis

CLAIM TO FAME: A private practice owner who was searching for—and found—a solution to calculating topographic LASIK treatments for normal and abnormal eyes



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CRST: You have been in practice for more than 20 years now, and you own OVO LASIK + Lens, which you market as a premier vision correction clinic. On top of that, you developed and own Phorcides, which is a clinical decision support software system. When did you start developing the software, and what motivated you to do so?

Mark Lobanoff, MD: I had been performing LASIK for years. I looked on with envy at European colleagues who had topography-guided LASIK or PRK treatments to fix abnormal eyes. I'd go to national meetings and hear about great things surgeons could do, but we didn't have the technology here in the United States. Finally, Alcon brought it before the FDA. The FDA required that a study be done using the technology on virgin eyes. In Europe, it had been used as a repair procedure. Alcon did the study, and Contoura Vision topography-guided LASIK yielded great results.

When we finally got topography-guided technology in the United States, however, it landed with a thud. It was hard to figure out which patients would do well with the technology and which wouldn't. Surgeons were confused about how to calculate the right treatment. I had an idea of how we could potentially make this work and, if so, how it could make LASIK better for all surgeons and for patients. I began developing the idea. Once we had a product that could be used, it was shown to be effective.

CRST: What were the first steps you took toward commercializing the product?

Dr. Lobanoff: I had a concept, but I wanted to borrow from another aspect of the software universe. A geographic information system (GIS) can be used to take topographic maps of entire cities and lay it over a map of all the roads and/or parks. Then, a fourth map of rainfall patterns can be overlayed. GIS lets you compress all the maps together to create a more realistic view of a location.

I called 10 companies that work in GIS, and nine of the 10 said, “You're crazy. We don't want to talk to you.” One of the 10 said, “We think you're crazy, but we'll talk to you.” I showed them a topography map of the cornea, and they said, “That's a

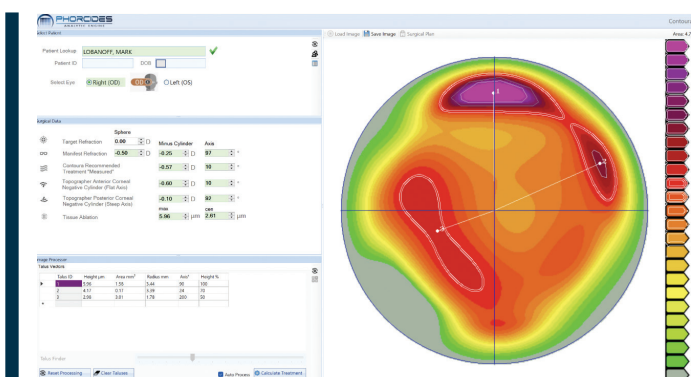


Figure 1. Phorcidex GIS analysis of a corneal topography-guided LASIK treatment.

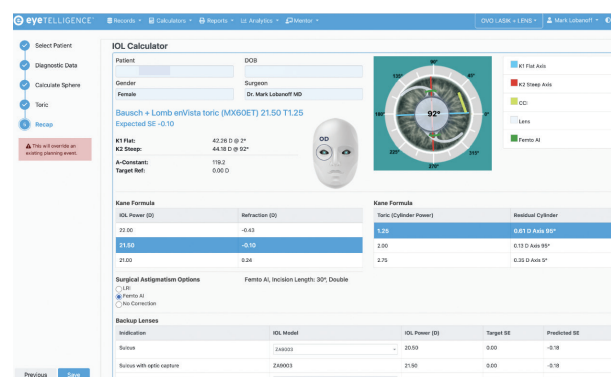


Figure 2. Lochan's eyeTelligence Cataract Surgery Planner, built for Bausch + Lomb.

topography map." I said, "Exactly. We deal in microns, and you guys deal in kilometers—but the concept is the same." They said, "You know what? We can work with you." I met a software developer. He became my partner in Phorcidex, and together, we built the product (Figure 1).

CRST: What partnerships were integral to taking Phorcidex to the next level, and what advice do you have for individuals who need help bringing their idea to life?

Dr. Lobanoff: My specialty is refractive corneal surgery, and that's the universe I know well. I knew a little bit about software, but I'm not someone who writes code. I knew I had to find an expert in software. I wanted someone who understood physics because so much of light and lasers deals with it. It took me 6 months, but I found an individual who had a PhD in physics plus was a brilliant programmer. He had worked on many other software projects, but they weren't really projects that excited him. This project excited him because he could see how it would benefit patients and humanity.

I began to seek partners who could fill in other gaps in my knowledge base, such as those who knew about business and marketing.

My advice to other entrepreneurs is not to be afraid to ask for help. Work to your strengths, but for areas where you feel you need some help reach out and find someone who can help you. There is a source online called Fiverr that allows you to hire a programmer to tackle a small project or someone to work on marketing or a logo. There are

so many different resources that connect you to people in the gig economy. They have the skill set that perhaps can complement your own.

We surgeons have big egos. We're used to being given a problem, and it's our responsibility to solve that problem. The reality is, although you could spend time and learn a skill set outside of your wheelhouse, someone else is already great at that particular skill set. Taking your ego down a notch, looking for those individuals who have the skills that can complement your own, and adding them to the project—I think it's powerful.

CRST: You were named a top doctor by Minnesota Monthly in 2020, 2021, 2022, and 2023. How do you balance the demands of being a top vision correction specialist with your entrepreneurial pursuits?

Dr. Lobanoff: I love taking care of patients, and I love surgery. That's my primary passion in life. But, after 15 years of doing intensive clinical work and lots of surgery and being the medical director of an ambulatory surgery center, maybe the passion had been reduced a little bit. The entrepreneurial projects reignited my interest in ophthalmology. Each one energizes the other. The downside is it takes a lot of time.

CRST: What is another downside or recent difficulty you've faced, and how are you tackling it?

Dr. Lobanoff: One challenge professionally ties back into what I do quite a bit during the week, which is help patients with keratoconus. CXL can halt the disease, which is amazing. What was frustrating is the cornea was

already irregularly shaped. We could stop the patient's vision from getting worse, but we weren't making it much better. We began finding a new way to do topography-guided PRK to fix the shape of the cornea, restore the patient's vision, and halt disease progression. I felt like the current CXL techniques weren't good enough, so I designed this new device to improve the CXL process.

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CRST: What do you hope to accomplish in the future, both with Phorcidex and at your practice?

Dr. Lobanoff: At ASCRS, we're rolling out a new version of Phorcidex. We've created a version for the military and for certain corporate accounts that can function 100% offline. What I'm most excited about is we have tens of thousands of cases in our database. With the growth of AI and machine learning, we are now applying that to the latest version of Phorcidex. As accurate as it is right now, we believe it's going to be even more incredible 1 or 2 years from now. We're constantly working at Phorcidex to improve it, make it more user-friendly, and increase efficiency.

Having succeeded with Phorcidex and in the LASIK environment, I formed another company called Lochan. Lochan is currently building Bausch + Lomb's

global cloud-based calculation platform for cataract surgery, called eyeTelligence (Figure 2). We're excited about finding ways to make cataract surgery more accurate and make the planning of IOLs faster, easier, and more efficient.

CRST: How do you come up with the names of your companies?

Dr. Lobanoff: I like my names to have some meaning behind them. Again, when Contoura was rolled out, it kind of landed with a thud. Alcon had asked different surgeons how should they be teaching surgeons to plan Contoura. There were maybe five or six different methods, and none of them worked well. I thought we should be looking for the single solution that everyone can use so everyone can see

the right way. In Greek mythology, there are three wise women known as *Phorcides*. The Phorcides could see into the future, but they had to share one eye, pass it back and forth, to see what was in the room around them. I felt that Phorcides was going to be the tool that let every surgeon see the right way forward. I thought the name fit with what we were doing.

Lochan is ancient Sanskrit for vision and the ability to see. The whole purpose of Lochan is to help surgeons give the gift of sight to patients who have cataracts.

CRST: Who has had the most influence on your entrepreneurial spirit?

Dr. Lobanoff: I have to credit my dad. He was an engineer and worked in the automotive industry for many decades.

If you've ever been in an SUV or a station wagon and seen the screen that pulls out to cover the luggage area, he was the one who invented that. I remember as a kid hearing about how he was applying for a patent and going through the process. Here's a role model of mine who came up with an idea, came up with a design, developed a solution, and was able to bring it to the marketplace. I saw how that worked. He's always been a great inspiration to me. ■

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- Financial disclosure: Owner (Phorcides, Lochan)