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Sierra Circuits:

A Unique PCB Company

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Sierra Circuits is one of our industry's most unique companies. While most companies will march in some degree of lock step, Sierra Circuits has always marched in its own direction. This article is focused on why that is, the direction the company is headed, and how it works.

In the past few years, while other companies in our industry have either gone out of the business or, at the least, floundered on the brink of going out of business, Sierra has thrived. While others were ready to "grab for an oxygen mask," Sierra has always found a way to make things work, in its own special way. To figure out why that is, one has only to look to Ken Bahl, the president and founder of Sierra Circuits.

The first thing you notice about Ken Bahl is his intensity. As he shakes your hand, he is already sizing you up. As you start your conversation, he is already making assessments, trying to figure out what you are about, what you want from him and, yes, even how you could do things together. In other words, how even the most casual meeting can turn into a win/win for the two of you. You can almost hear the wheels whirring in his head as he talks.

He chooses his words carefully, making sure that he selects the words and sentences that will best relay what he wants to say. You can tell that this is a man who cherishes ideas and loves the transition of ideas into reality. This is a man who loves getting things done. Someone who worked with Ken on a number of projects once admitted to me that he is not the easiest person to work with, but there is always a well thought out reason for everything he does. He is always looking at the bigger picture, he always has a plan.

And so, it was 23 years ago, in 1986, when Ken Bahl, his wife, Bala, and their three children made their way to California. They had been living in New England for a number of years while Ken held a number of engineering positions with Honeywell and, most recently, Simmonds Precisions. While working with



Ken Bahl and his wife, Bala

these companies, Ken had needed to use printed circuit boards. As he got more involved in the technology and dealt with some of the companies fabricating those PCBs, he became intrigued with not only the technology, but also the industry. He saw the good aspects of the industry, and he saw the challenges. In typical Ken Bahl fashion, he saw many ways he could do it better.

"We were using a lot of boards when I worked at Simmonds and, frankly, there were always problems," said Bahl. "They were either late, holding up our projects, or there were technical problems. Whatever it was, there was always a problem. So, I asked myself, 'why couldn't someone do this better?' To be honest, I asked myself, 'why I couldn't I do it better?'"

When Bahl moved to California it was for the express purpose of getting into the printed circuit board business. One day, while driving through Sunnyvale, on Evelyn Avenue to be exact, he spotted a For Sale sign in front of an industrial building. The building looked like a good place, in a good location, to start his printed circuit board company. He could buy or rent the building, acquire some equipment, and get started. But much to his pleasant surprise, this building wasn't just an empty structure, it was a fully equipped printed circuit board company. The owner had gotten into some difficulties with the EPA and wanted out. So Ken and Bala, using personal funds, an SBA loan, and a loan from the Bank of India, were soon in the printed circuit board business.

What's really interesting is that Ken had never built a board in his life. But he jumped

into it with both feet, giving it everything he had. In 30 days, his team was in place. In 60 days, they were building boards. In another six months, he went bankrupt—having to file for Chapter 11 protection in 1987.

"We just did not have the experience to bring the company on board that fast and things went wrong," said Bahl. "We had to let everybody go for a while. Then I hired five key people back and asked my wife, Bala, to come in and start handling the phones for sales and customer service. And in a pretty short time we were back in business."

By May of 1987, to be exact. Surprisingly, soon they were at \$50,000 a month, making \$500. And since then, they have never looked back, and the company never lost money again.

In 1991, renamed Sierra Proto Express, the company entered the quick turn market.

"I liked the sound of the name, 'Sierra Proto Express,' much better," said Bahl. "To me, it represented who we wanted to be as we entered the quick turn market. I felt strongly that this is where the action was, this was the future of our industry. It was much more challenging and, actually, much more fun and, of course, the profits were better. Because it was a much faster business, just like Fed Ex, I emulated their look when I designed my logo. I guess it looked a little too much like theirs because, believe it or not, they got wind of this and the next day they came knocking on my door telling me they were going to sue me if I did not change my logo. So, looking at the size of their company, and the size of mine, I changed my logo. I know which fights to pick and which to avoid."

Although Sierra Circuits is in a market leadership position today, the road to get there was not without its challenges. As with many companies, especially printed circuit board companies, there is always something. Many years ago, a few years after starting the company, they hired a consultant who was supposed to know everything about waste treatment in a PCB facility. Unfortunately,

this was not so and the next thing they knew the company was in serious trouble. The entire shop floor was flooded with discharge water. When the authorities saw this, they shut off the water, which, of course, shut down the shop, virtually putting the company out of business.

“Everyone was upset, of course. My wife was crying, thinking that we were done for and it looked like she was right. But I knew that, if we tried, we could figure something out, and we did,” said Bahl. “We started building boards without water! I used all of my technical skills to keep the shop open and working. For at least one year, we brought in and took away over 5,000 gallons of water a week. It was hard but we made it work. And we kept all operations in house. This is the kind of thing you have to do when you have your entire life invested in the business. I ended up putting a recirculation system in every department and made the authorities happy. We got our water turned on and were soon operating on all eight cylinders.”

Since then, Sierra has gone from shipping \$50,000 a month to \$2.5 M a month, assuming a true leadership position in the industry. The most important aspect of Sierra’s path to industry leader was through innovation, whether it was in sales and marketing, or in technology.

Sierra as innovators

“I have always prided myself on being an innovator. I just love doing things ahead of everyone else. And, I like to take chances. The first thing we did differently than anyone else was to actually publish a pricing matrix in the trade magazines,” said Bahl. “No one had ever done that before. There were more magazines back then, at least eight or ten, and we were in all of them, with our pricing right out there for all the world to see. At first, people were stunned. They thought we had lost our minds. But it worked and worked very well. Soon, other companies started copying us so we started looking for something else that would be innovative and put us ahead of the curve.”

In the past few years, Sierra Circuits has strived to be an industry leader in a number of innovative ways. For a number of years, when the time was right, the company undertook a very successful branding program, establishing itself as not only one of the industry’s foremost printed circuit board facilities, but also a leader in research

and development. For the past five years, Sierra has worked with industry guru and inventor, Robert Tarzwell, on a slew of new, bleeding-edge technologies, such as HDI and microvias, line widths down to one mil, virtually indestructible lead-free printed circuit boards, heavy copper rigid boards, and heavy copper flex boards, just to name a few. Sierra was also the first company to produce and air a live technical webinar on the topic of industrial lead-free boards, which gathered an audience of more than seven hundred attendees.

“Our goal is to be viewed as the industry’s research and development center for printed circuit boards. With so many OEMs getting away from having their own shops, and with the demise of the large PCB facilities in this country, no one is working on R&D, which will hurt us in the long run if we don’t focus on it,” said Bahl. “Understanding this need, I decided to re-invest into the R&D process, that way, if any companies out there needed to have development work done, they could come to us. We started this about four years ago and, although, admittedly, it did get slowed down a bit by the recession, we have had a continuous flow of companies using us to develop their new products and technologies. It feels like this is a service whose time has come.”

Seeing a need for a strong, mid-level-technology printed circuit board provider, Sierra Circuits acquired PC Boards of Chanute, Kansas, a few years ago, renaming it Sierra Midwest Circuits. While its original facility in Sunnyvale is focused on higher-technology quick turn, as well as new development products, Sierra Midwest produces two- to ten-layer, small-to-mid volume production printed circuit boards, thus giving the Sierra customer the chance to order a full menu of boards—something that Sierra has always strived to do.

In the spirit of providing its customers with whatever they need to be successful, Sierra has also made arrangements with other companies to provide design and assembly services, which means that the company can provide its customers with a complete concept-to-reality solution.

The future

As the recession wanes and we see the prospect of new and better times around the corner, Sierra is busy planning for its future, a future based on what its customers are going to need. Despite the recession, Sierra

has been continuously investing in its future. The company has continued to invest in equipment, people, and technology, finding it easy to become better, even in the midst of this very tough downturn.

At a time when many of its competitors have put a freeze on capital investment, Sierra has been buying equipment in preparation for meeting the future technological needs of its customers.

New equipment and investment

During the past few months, Sierra has purchased and installed brand new plating tanks and rectifiers to improve its aspect ratios for both through holes and blind holes, a new, fully permitted hot air leveling system, a new ENIG line, a new LDI, which will be the second one in the Sunnyvale facility, a new AOI system with an automatic repair feature, two additional laser drills, and another OEM lam press, just to name a few. The company has also invested in marble floors throughout the facility in an effort to make it a “show place” of the industry.

“Look, we are serious about this business. We are in for the long haul. That’s why we keep investing in our capabilities and technology and, especially, people,” said Bahl. “We believe in the product, we believe in the technology, and we believe in the industry, especially here in the United States. It is our goal to be the best of that industry and to continue in our roles as an industry leader.”

There is little doubt that Sierra’s position in the industry is firm. The company has proven a strong and long-standing commitment to leading the industry and has come a long way from the days when it was struggling to ship \$50,000 a month, to 1987, when it filed for chapter 11 protection, to the time when, for a year, it built boards without having water in the plant. One has to ask if it was worth it. All that effort, money, and, especially, hard work.

“Yes, of course it was worth it,” said Bahl. “Anytime you are trying to change the world and make it a better place, it is worth it. Anytime you decide to put your life savings into your dream, it had better be worth it. I wake up every day and can’t wait to get to work, even after 23 years, after going through all this. If that’s not passion for what you do, I don’t know what is.”

For more information on Sierra Circuits, visit www.protoexpress.com. ■

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