

Two Women Executives and Their Impact on the PCB Industry



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With the 2009 IPC APEX EXPO™ on the horizon, in particular the association's Women in Electronics meeting, *CircuitTree* sat down with two woman executives in the PCB industry to discuss their rise to prominence, some of the obstacles they have overcome, and what they and their companies are doing to navigate through the current economic landscape.

Two Stories of Rising to Leadership

Brigitte Lawrence, president and owner of BrigitFlex, Inc., started her career in the PCB industry working with military contracts as a cost estimator at Microwave Cavity Labs.

"I had some very nice people that took me under their wing and taught me the ropes about military work," said Lawrence. "I took a great interest in the military specs and the how to [of it all]."

As Lawrence described, in the 1970s, they used artists to lay out PCBs on Mylar with black crepe from schematics. As a woman in a predominantly male field, Lawrence considered herself a bit of a novelty and had to prove herself and stay ahead of trends on a daily basis. "With an eye for art and a background with military specs, I learned to lay out printed circuit boards and kept up with my studies and reading on the ever-changing electronics industry," she said. "The Midwest was a great place to learn."

Melanie Bera is president and owner of TRC Circuits in Minneapolis. Her PCB odyssey actually began in college. In 1997, she was preparing to transfer from Northern Michigan University to the University of Minnesota. Her sister worked for TRC Circuits in shipping and inspection and Bera knew she would soon be leaving her position. "I didn't know anything about circuit boards, but they needed a receptionist and a shipper and I knew I could do the job," Bera said. After about a month

in Minneapolis, Bera was hired by TRC. The amazing part of the story is that after just five years, she took ownership of the company. It happened like this:

TRC Circuits was established in 1985 by seven owners, all who worked together at companies like ACI and Honeywell. In 1987, the entity was down to two owners, one of the original seven, and one new owner. By 1997, the company employed 52 workers and was doing USD 3 to 4 million a year in sales. Then the tech bubble burst.

"[Not just the tech bubble] but also free trade with China and NAFTA—things that were taking away from manufacturers in the U.S.," said Bera. "The result of which was more competition globally."

Minneapolis was particularly hard hit and saw a number of shops close at that time. "Big shops, like Honeywell," said Bera. "They employed probably about 12,000 people. They closed in 2002."

In 2001, TRC had about USD 1 to 1.5 million in sales with 50 employees, one of whom was Bera, who had been moved up from receptionist and was keeping the company's books. According to Bera, however, the business wasn't bankable and was far in debt. "The two owners were not that into the business anymore and wanted to retire. The business was failing. It was a really bad time for manufacturing," said Bera. "One [owner] was bought out by the other and he offered to sell to me if I wanted to buy him out. I did, after about a year. He had already moved me up to take care of the books, so I had seen the good side of the company and what it could do. It just didn't have the right people making decisions."

Since taking over in 2002 and through 2005, the company experienced periods of growth and periods of stability. "In 2006, we started to see a bit of a decline," said Bera. "Then in 2007, a larger decline, but in the middle of 2008 we were seeing some growth again." This may seem a little backward considering the information we have all

been hearing regarding the current economic situation, but Bera pointed out that it has much to do with a large segment of TRC's business—prototypes. "We do a lot of prototypes," said Bera. "We seem to see [declines] before a lot of other shops, so we also then seem to see the growth sooner, too."

So, with this in mind, does Bera see TRC's growth in 2008 as a positive sign? That we are starting to pull ourselves out of this current economic decline? "I think so," said Bera. "Some of it has to do with the fact that we have different customers. Some are doing well, some of our larger customers are still down about 80 percent, but we have compensated that with new customers or customers that are growing or have been stable throughout the recession."

TRC's fiscal year runs from July to June and, some might say ironically, the company is looking forward to a great year. "Right now we are looking at the best year we've ever had, to tell you the truth," said Bera.

Bera attributed this to the company's focus on customer service. "That's one of the things I have done since taking over—to drive customer service," said Bera. "Your customers are number one and you have to give them the best service you possibly can, whatever it takes. A lot of our customers have been with us since 1985, since the company started."

Lawrence mirrored the importance of customer service and the human factor as one of the key factors leading her company through this current economic downturn. "The slowdown for all is tough. We don't know what will happen in the next few months; I must believe my knowledge will help me and contacts will come through," she said. "I am always looking in the up and coming industries and trying to stay in contact with everyone."

Lawrence also offered this advice to weather the storm: "Don't lower a price just to get an order," she said. "If you get a job and lose money on it, what good was it? You have to at least break even to keep your doors open."

And, much like Minneapolis in the early century, Lawrence has seen a number of board shops "bite the dust" in recent months, but she confidently said, "I will last. I have too much to say."

Interesting Projects

TRC Circuits works in a wide range of industries, including medical, aviation, and automotive, producing high frequency boards,



BrigitFlex, Inc. Uses and Combines Some of the Most Unique Materials and Shapes to get Results for Its Customers



satellite technology, GPS, and antennae work. "We even work with people working out of their homes on inventions to big companies like Honeywell and 3M," Bera said. "There is really no industry we don't work in. For a lot of companies, I think that is what happens to them. They are just in one industry and too specialized."

TRC Circuits, however, has been the go-to company for a host of industries working on some of the world's most life-changing technologies. "We did some work on the Mars Solar Lander antennae and have done a lot of medical boards for pacemakers," said Bera. "We also do a lot of military work—prototypes for the introduction of new technology, like, for example, the Tomahawk cruise missile....In fact, a lot of times we do boards and [the client doesn't] tell us what they are for. Some things we can figure out. A lot of times on our end we don't know what the board is actually going into."

BrigitFlex, and Lawrence herself, works closely with engineers to try and help them proof out concepts with PCBs, using and combining some of the most unique mate-



rials and shapes to get the results that the engineers are looking for. "I work in close relations with all the major material manufacturers and mix their materials when needed," said Lawrence. "At times I have cast my own materials to aid in the process. Size is not an issue [for our shop], whether it is large, small, or unique shapes."

Lawrence has dealt with RoHS, no-out gassings, multilayer, low loss, high temperature, and high pressure temperatures. She was at a medical electronics show in Minneapolis recently when her experience with these materials and applications created a stir. "They were interested in teflon flex, no-out gassing flex, and heater coil boards," she said. "Having mixed these materials, I could offer a unique perspective. They asked me about my challenges. Ultra thin but very large boards came up. There are companies that need these types and there are so few of us that can produce large boards."

Unique Challenges As a Woman in PCB

It's not easy for anyone in today's business climate, but in the PCB industry it is important "to learn to listen and learn take advice," said Lawrence. And one person Lawrence sought advice from was now former Speaker of the House Dennis Hastert. "He told me to find my niche, become the best, and work at it," she said. "It's all about passion."

Unfortunately, that passion can be misinterpreted in an environment dominated by men. "Outside I may look weak or soft at times, but it is just that I am passionate about our industry and my company," said Lawrence. "When you come on too strong, they can think you're difficult; when you come on with a tear in your eye you're weak."

But, like many small business owners, it's more than just appearances. Lawrence must contend with working on a shoestring budget, keeping on top of every aspect of the industry, including working closely with suppliers, surrounding herself with knowledgeable people, and letting word of mouth be her greatest tool. "I had to learn I cannot be everything to everyone, but what I don't know I could find out from my associates. I am always willing to learn and try," said Lawrence. "I associate myself with my suppliers to learn what is new in the market and try it. I am always willing to try."

Not an easy task, so Lawrence relies on a work crew that is cross trained and pushes the



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company's equipment to get the job done. "I have taken my equipment and pushed it to the ultimate," said Lawrence, "such as using the press past 700 degrees for special materials."

Lawrence's biggest challenge is reconciling the desire to be everything to everyone and to have every project work out perfectly, something that is not always possible when working with concept PCBs. "My challenge is that within my company I ask that we work until we satisfy the customer, and this is not always realistic," said Lawrence.

worked for the company for a long time and having things "go their way." "But they weren't ways that were good for the company and the company wasn't going to grow with them," said Bera.

It was difficult to support such resistance considering the fallout with the economy and manufacturing and how the industry was changing from how it was in the 1990s and the very early 2000s. "They couldn't understand the changes," said Bera. "Especially if it had to do with their salaries or

women working their way up the ladder in the PCB industry?"

"I don't know if you can avoid [the glass ceiling], but the best thing is to surround yourself with good people and be a good listener so that when problems come up you can go at them head first instead of finding out things later," said Bera.

This mirrors Lawrence's sentiments, who said, "I admit not knowing everything and always learning, and if I need to I call upon my vast contacts in the industry for their expertise."

She added that it is crucial to know your strengths and learn to communicate well with engineers. "I did learn that you have to stand your ground," said Bera, "whether you were working with other people in the industry or vendors." She said that this all leads back to having to prove yourself and prove your knowledge everyday.

"I think [this industry] is exhilarating," Bera continued. "I enjoy it. I have fun with it. It's not hard to come to work everyday. You just do the best you can and hope everyone around you does the same."

IPC's Women in Electronics Meeting

From engineering to sales and marketing to executive management, women are making a greater impact in all areas of the electronic interconnect industry. How has being a woman, or working with women, affected your career? Share your ideas and experiences with your peers and build your industry network for your future career success.

To learn more, gain perspective, or provide your own experiences on the growing role of women in the PCB and electronics industries, attend IPC's Women in Electronics Breakfast Meeting at the IPC APEX show from 7:30 to 8:30 am, Wednesday, April 1, Mandalay Bay Hotel, Las Vegas, Nev.

Last year's meeting was informal, with the association expecting 20 participants—about 50 showed up. It was described as nothing short of standing-room only, with IPC representative Kim Sterling proclaiming, "I didn't even get into the room." Although much more prepared for this year's meeting, the association reminds everyone interested in participating be sure to RSVP for this meeting through the online registration process or contact MaryMacKinnon@ipc.org for more information. ■

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For Bera, the challenge of being a woman in the PCB industry is an amplified feeling of needing to prove yourself everyday. "Say you have a problem in your plating line. Say you're getting voids and there are only a few things that can cause them. You would have to prove to your managers and employees why that problem exists. Instead of them just taking your word and trying to fix it, you have to prove it to them," said Bera. "And I still find that to this day. You have to prove everything, like they don't really believe you."

The Glass Ceiling

The glass ceiling is the term for informal, transparent obstacles blocking upward advancement through a company or industry, unlike traditional impediments such as education or experience. In this case, it refers to women in a predominantly male industry. While the existence of such a road block is still debated, the concept is evident in people, organizations, and industries that experience a resistance to change.

"Oh, yes. It's definitely there," said Bera. "I had to go through a few people that didn't like change. They didn't like my suggestions that would have improved the company. And basically they would leave because they were part of what I would call the 'good-old-boys club.'"

As Bera confirmed, this resistance to change was the result of employees having

what they needed to do. You were basically downsizing everyone and everyone needed to take on more tasks. With a company like this you have a lot of people multitasking jobs to get the work out. If we had the 50 people we needed to do the work before, we wouldn't exist."

Whether it was the struggling economy, increased competition, or old attitudes, the resistance was not limited to internal sources. "[It was] even vendors that were trying to sell us equipment," said Bera. "You try to be open-minded and look at vendors all over the country, not just in Minneapolis, to find the best equipment for your employees. I had vendors leaving me nasty and even threatening messages saying that they couldn't believe I would bring something in from somewhere else."

However, Bera's experiences coming into a role of leadership as a woman were not all negative. "There was some positive," she said. "Sales and purchasing seemed to go better. Most of the people you worked with were men. It is a very male-oriented business. Coming in as a woman that way worked out well and probably did benefit the company."

Advice on the Glass Ceiling

So, do Bera and Lawrence have any advice on breaking through the glass ceiling and other challenges facing professional