Precision Engineering Gears Up for New Markets

By Deborah Nash

In the 1990s, the hunt for big game changed to seeking a niche market that would allow Phil Boyce to open a successful business in Montana. Moving from the west coast, he launched Precision Engineering in 1996 in Kalispell with a primary focus on serving the semiconductor industry. Today, with eight employees, the company is targeting growth in additional markets in aerospace, motorsports, and a growing firearms industry as well as creating prototypes for all industries.

Precision Engineering produces high precision, high accuracy parts in a variety of specialty metals and alloys as well as thermoplastics, using 11 CNC (computer numerical controlled) mills and lathes. It has also developed proprietary aluminum parts for motorcycles.

To address a marketplace increasingly focused on quality and traceability, Boyce and crew began exploring certification to the ISO 9001 International Quality Standard several years ago. After approaching Bill Nicholson, area field engineer from the Montana Manufacturing Extension Center (MMEC), about what would be involved, they decided to reach a further milestone with aerospace AS9100 certification. AS 9100 is the aerospace industry-specific standard relating to ISO 9001 conformity. It includes all ISO 9001 provisions in addition to aerospace-related qualifiers.

“Adding the AS certification would not require too much more effort, and it opens opportunities into other industries,” said Nicholson, who assisted the firm with a gap assessment and quality system implementation. He also helped identify the requirements of the standard as they related to enhancing the firm’s ERP system, and Boyce added modules toward that goal. Earlier Nicholson identified a local trainer, Craig Ruch, for instruction on using a specialized coordinate measuring machine (CMM) and helped the company apply for a workforce training grant to obtain that training as well as for cost estimator software training.

The software is used for more accurate bidding.

With demand in the semiconductor industry rather cyclical, new markets can help fill gaps in production. “We decided to be proactive with the broader certification while it is still somewhat unique,” Boyce said, predicting that certified quality management systems will soon be an expected cost of doing business.

A first step was enrolling several staff in an MMEC Internal Quality Auditor training workshop where employees also received a day of live audit practice at a local firm. The training includes writing and delivering report outs on audit findings to real managers from the company that hosts the internal audits.

**Stressful but Worth It**

Small companies face an additional hurdle in balancing staff time with meeting production demands when developing a formal quality management system, Nicholson said. For Precision Engineering the endeavor created stresses that were sometimes “off the chart” due to cyclical production peaks, recall Boyce and Andy Upton, Shop Foreman and Quality Manager. In retrospect, they say it has been worth it.

“Initially, we had a choice; conform to a
Innovating at Light Speed — We Can Do It

When we held our first manufacturing conference, Compete Smart, in 1998 the major focus of US and Montana manufacturers was continuous improvement, with Lean Manufacturing concepts taking hold over ensuing years. Lean and process efficiency dominated the literature. Bottom-line growth through internal improvements was the mantra.

Much has changed with the new millennia.

During the first decade of the 21st century, global competition grew dramatically. In many parts of the world manufacturing capability and capacity grew tremendously resulting in escalating incomes for large segments of the world’s population. As incomes grew so did expectations for improved living conditions and life styles which changed the world fundamentally.

As global markets and competition changed so have Montana’s manufacturers. Lean Manufacturing and process efficiency continued in importance, but the focus moved to the top-line. Revenue growth through increased sales has become paramount for success. New markets including exports, increased market share, and new products are now viewed as vital. Montana companies understand, and during a recent two year period, seventy-one together had in- creased and retained sales of nearly $400 Million! The seventy-one together had increased and retained sales of nearly $400 Million! What is telling is that reported new and retained sales were $5,600,000 per year! The seventy-one together had increased and retained sales of nearly $400 Million!

Between 2002 and 2010 Montana’s manufacturing doubled from $5 Billion to $10 Billion...exports grew almost 400% to $1.1 Billion!

So, what’s next? We’ve seen a shift in the last decade from a focus on efficiency to a balanced focus on efficiency and growth. But the pace of change in the world has not let up and our need to respond has intensified. Leadership to drive innovation is now critical.

Innovation is not uniquely American. But we are better at it than anyone else in the world. Innovation is what fuels our competitiveness. It is what makes us strong and vibrant as a nation. In my world, innovation is what defines us.

Innovation alone will not keep us in the lead economically, maintain our standard of living nor keep us secure. As we move into the next decade we will need to maintain our edge in production efficiency and increase sales. We will need to stay on the leading edge of both economic and environmental sustainability. We will need to continue to develop and launch new products. We will have to do it all... FASTER!

Sounds like a tough challenge, doesn’t it? But to quote US opera singer Beverly Sills, “You may be disappointed if you fail, but you are doomed if you don’t try.”

MMEC has tried to keep pace with the changing needs of our manufacturing community. Compete Smart is a very different event today than was our original event in 1998. This year we have an exciting lineup of speakers, breakout sessions, and plant tours at our 8th Compete Smart, Oct. 11-12. The conference is the best networking opportunity to ignite conversations with manufacturers across Montana and the place to discover knowledge and fuel up on profit generating ideas. We hope to see you there!

Steve Holland, MMEC Director
6 Things You Should Do if You Just Lost Your Biggest Customer

Jim Logan, Saleskick.com
Guest Writer

If you find yourself in the unfortunate situation of having lost your biggest customer, the impact of which is a devastating loss to your income and a serious reduction in cash flow, there are things you can do to survive. But you must act fast:

 ensl Call the customer you just lost —
 First and foremost, you need to speak directly with the customer you just lost and find out what happened. Why did they stop doing business with you and your company? You need to understand what happened for two reasons: 1) There may be a simple problem or misunderstanding that can be easily addressed to renew the business relationship — your customer may have stopped doing business with you because they thought there were no other options to solve a problem they are experiencing. 2) You need to know if something is wrong that may poke its ugly head in other accounts.

 ensl Don’t get desperate — Assuming you’ve lost the customer, take a deep breath. Now is not the time to do something drastic like cutting staff or selling assets. That day may soon be coming, but resist the urge to do anything immediate. Now is the time to think and evaluate all options to survive.

 ensl Map your sales cycle and overlay cash flow — You need to know how bad the problem is and how much time you have to work with. Pull out your sales forecast and review how much time to cash you have for each account and how realistic each new opportunity is to close. List each customer order and payment you can realistically expect and determine when you will run out of money and by how much. If you’re a commissioned sales professional, know exactly how and when commissions will be paid.

 ensl Cut back on expenses — List all of your business expenses and see if something obvious jumps out that you can eliminate. Don’t cut anything that inhibits your ability to serve other customers. Look for things you can do without for a while. If you’re a sales professional, don’t buy the boat :) 

 ensl Look toward your other customers — Losing the customer you most rely on is bad. Losing several customers because something systemic is wrong with your company and you’re unaware of it is disastrous. Get in touch with your customers and talk to them about their business. Ask how your company is doing serving their account and solicit input on ways you could serve them better. Your discussion may uncover a new product or service you can sell them.

 ensl Call colleagues — Now is not the time to begin looking up old friends and colleagues, but you ought to if you’re not already involved in a network. Let people know you’re expanding your reach into your market, give them an update on the success you’ve enjoyed in your business, and let them know what your ideal customer looks like. Ask if there is someone they know you should speak to about the products and services you offer. There are dangers to retiring quota from one or a small number of customers — it’s something you should monitor and work to avoid. You need to continually expand your customer base and diversify revenue to protect your business and income from having a cash flow disaster due to a large customer no longer sending money your way.

 Reprinted with permission from blogger, Jim Logan, Saleskick.com. Jim specializes in B2B complex sales, working with clients to attract more qualified leads, shorten the sales cycle, and increase close ratio — all while relying less on price to win.
Precision Engineering also makes proprietary motorcycle parts.

Precision Engineering (cont. from cover)

box solution or customize and really make it our own,” Upton said. “We got Bill to help us implement a quality system using steps he has vetted successfully in other shops.”

Precision Engineering passed its certification audit in January 2012 through National Quality Assurance, a quality management registrar, with only two small findings which were corrected while lead auditor Merlin O’Hara was still in the building, according to Upton. It is now both ISO 9001 and AS 9100 certified and estimates the certifications will help retain 75-90 percent of sales as well as attract new customers.

A surprise learning from the quality project has been this. “We learned that we are really a good company,” Boyce said. “We do what we say and deliver good customer service that sets us apart.” From their own experience with vendors, they know this is not necessarily the norm.

Upton found that a documented quality manual is useful for employee training. “It captures ‘tribal knowledge,’” he said. And by building in more quality check points and statistically sound sampling, a 20 percent sample, management is more confident in quality assurance to customers. Upton said. “Quality was never a big issue, but in general it’s better.”

The company uses its CMM inspection robot to check tolerances on complex parts without human interference. The CMM is a 3D device for measuring the physical geometric characteristics of an object. Measurements are defined by a probe attached to the third moving axis of this machine. “This tool is especially good for verifying unusual shapes,” Upton said. “It gives close quality inspection when conventional measuring methods are not practical.”

Maintaining high quality production is not only important to customers, it has cost implications to the company. A square foot of ¾” thermoplastic, for instance, can run more than $1,000, making unnecessary waste very expensive.

Happy Camper

“I start every quality project by asking staff to assist with writing the standard operating procedures for their area of responsibility. This can really help with buy in”, Nicholson said. “But for a small company it can be daunting.” At certain points the project was nearly derailed due to high production demands. “There were times when I wanted to throw Bill and Andy out the window,” Phil Boyce joked about frustrations with the added workload and costs. He estimates that fees for machine/equipment calibration, downtime, coaching, and certification nearly tripled the $50K cost of certifying. Added to that was customer pressure to get it done and not knowing “if we were going to pass after all that effort and expense.” “Now I’m a happy camper,” he said. One of the first things to notice when listening to Phil Boyce at his weathered oak roll-top desk, is his jocular sense of humor. You might not realize he once worked for the prestigious Lawrence Livermore National Laboratory. Nor would you immediately sense his philosophy: If you take care of employees, they will take care of you.

“Phil really values his people,” Nicholson said. “His vision is to build a company that will be here longer than he will. He told me he wants to take care of “my boys,” and by that he meant his staff not just his son.” Many of his employees have been at the firm a long time.

Upton, who has been with the company 11 years, takes a queue from his owner, and jokes about that comment saying, “Yeah, he lets us clean up after work once in a while.” But in fact, Boyce provides a generous retirement package and profit sharing, according to Upton.

Balancing QMS and Production

“A while after the quality project launched, Precision came to me and said, ‘We can’t do it and keep production going,’” Nicholson remembers. At that point, he stepped in and wrote draft procedures which were then vetted in management review meetings with both Upton and Brandon Boyce, the owner’s son who handles customer service and marketing.

What we thought didn’t fit, we red-lined,” Upton said. “Revising and making it ours so it fits our company.” (continued on page 5)
Dale Detrick of MMEC Honored with “Lifetime Achievement” Award

At the Montana Manufacturing Extension Center (MMEC) Advisory Board meeting in May, Dale Detrick, Field Engineer for Eastern Montana, was roasted by colleagues and several clients to celebrate his “Lifetime Achievement Award” presented earlier at the national Manufacturing Innovation conference of the NIST Hollings Manufacturing Extension Partnership (MEP) in Florida. This award recognizes MEP staff whose specialized capabilities enabled them to make a significant, innovative and sustainable impact within client companies and across the MEP system.

At the awards ceremony, Detrick was commended for his professionalism and a personality that has made him overwhelmingly successful as a champion for the MEP mission, leading successful growth and transformation in U.S. based manufacturing for 18 years, 11 of those with MMEC. He serves a 73,000 square-mile region of Montana and has an office located at Big Sky Economic Development in Billings.

In a support letter for Detrick’s award nomination, Tom Spika of Spika Welding and Manufacturing in Lewistown wrote, “Dale has been characterized as the ‘Connecticut Yankee’ for a style that classifies him as mentor to colleagues and clients alike. He employs brutal honesty, listening and relating, and mediation along with a wealth of knowledge from 25 years immersed in design and manufacture as a business owner.”

During the Roast, Spika noted, “We are all gathered here tonight to recognize a friend, colleague, mentor, and obsessive nit-picker for cleanliness,” sparking laughter from Detrick and others who know he is a stickler for Lean Manufacturing 5S (sustain, standardize, shine, set in order, sort). He is also known for almost always donning a classic cotton duck canvas hat, that didn’t go unnoticed in remarks by Spika who said Dale “graduated in 1937 from Yale University, with a MS Degree in Australian Hat Design and Engineering.”

He regaled Detrick and the crowd with many humorous remarks about the award winner’s passion for continuous improvement, embellishing with this, “Mr. Detrick worked for several years with the young Igor Sikorsky, where he single-handedly headed the ‘Rotor-less Helicopter Concept Prototype Project’, which, unfortunately, never got off the ground.”

Many other humorous and fond remarks were shared by other colleagues and Lee and Maggie Arbuckle, who also wrote a support letter for Dale’s award.

The Lifetime Achievement award recognizes Detrick’s record of steering client growth that ranges from automating a lefse maker in a tiny rural community, that juggles workforce with seasonal ranch demands; to contributing to the fruition of an entrepreneur’s dream in the role of design coach for a revolutionary seed harvester; to building a sustained Lean Enterprise in one of the oldest and largest steel fabricators in the state. His crowning achievement for the award is nurturing a regional cluster of manufacturers in Lewistown, the Central Montana Manufacturing Alliance (CMMA), that successfully collaborates and continues to meet after more than 10 years. Spika is one of the original members of CMMA.

Precision Engineering (cont. from previous pg.)

Nicholson credits Brandon with pushing through the administrative compliance to the AS standard, working with Phil on improvements in quoting, contract review, planning, etc. He called Upton the real pillar in the company for accomplishing the QM system on the production floor. He was responsible for all staff training and asked very focused questions.

“Now we’re really versed in QMS. We ingrained it into our culture,” Upton said. “When we come up to a periodic audit, we are ready.”

Owner Phil Boyce said he appreciates the effort Nicholson put into the quality project. “He had a genuine interest in the big picture, the best buy for buck, and the best system he could give us.” He noted that Bill even attended the final audit, taking and sharing lots of notes in the spirit of continuous improvement. “Bill provided very special coaching to get the job done.”

The next step in diversifying is to tackle hub zone certification that, in addition to the AS9100 certificate, will help Precision Engineering attract OEMs.
Manufacturing News Across Montana

Read About Your Neighbors Across Montana

Flathead Company Expects to Add Staff
Columbia Falls company Zinc Air is building batteries as big as a Walmart building and business is booming. It has been developing a new generation of batteries to store electricity generated by wind power and to distribute it to the power grid on demand along with other projects expected to add employment to its present staff of 34 people in the Flathead. See more at http://www.kpax.com/news/columbia-falls-company-has-big-plans

Strong Business Creates Jobs
Montana’s senior U.S. Senator Max Baucus recently announced a $1.5 million product sale for Mark Rite Lines Equipment Company (MRL) http://www.markritelines.com in Billings to South Korean company Dae Dong Safety Company Ltd. in South Korea. The announcement was part of a May 2012 Ambassadors Tour with representatives from Australia, Brazil, Colombia, South Korea and Vietnam to select companies across Montana. MRL is the largest manufacturer of truck mounted road marking machines in the United States. MRL exports 18-20% of its annual sales to countries that include four of the five countries represented on the tour. The company employs 90 Montanans in the 90,000 square-foot Billings facility and recently added a contracting division out of Missoula employing an additional 30 people. More at: http://www.baucus.senate.gov/?p=press_release&id=1024

Exports Increase Sales and Jobs
During the recent Ambassador’s Tour with Senator Max Baucus, it was announced that the Australian military will purchase $530,000 worth of Black Hawk maintenance platforms from Lewistown manufacturer Spika Welding http://www.spikawelding.com. The Senator had this comment regarding the sale, “When the Australian military taps a Montana manufacturer to build state of the art platforms that its Army depends on, it tells the world Montana is the place to buy when you need to buy the best.” Spika Welding & Manufacturing engineers and builds state of the art aviation maintenance platforms for military and civilian use. It employs 20-25 full-and part-time workers, exporting high-quality platforms around the globe. Owners Tom and Carol Spika accompanied Baucus on his trade mission to Colombia and Brazil in 2011.

Bozeman Firm honored with Tibbetts Award
Bozeman high tech firm Bridger Photonics, Inc. is one of 18 innovative companies that received the prestigious Tibbetts Award in April. The company specializes in precision laser radar (LADAR), gas sensing (LiDAR), and advanced imaging products. It has proprietary technology that provides unprecedented capabilities in terms of measurement sensitivity, resolution and speed in all of our product areas. The U.S. Small Business Administration selects Tibbetts award winners based on the economic impact of their technological innovation and on whether they have met federal research and development needs, encouraged diverse participation in technological innovation, and increased the commercialization of federal research. Read more: http://www.sba.gov/news

Montana SBA Awards Named for 2012
KC Walsh of Simms Fishing Products, http://www.simmsfishing.com, in Bozeman has been named the Small Business Person of the Year in 2012 by the U.S. Small Business Administration. The award is one of several presented annually in several different categories to recognize and celebrate the importance of small businesses in Montana and those who advocate for small business. Other manufacturing winners for 2012 include André Giles, Montana Flour & Grains, Inc., http://www.montanafLOUR.com, Fort Benton, Small Business Exporter of the Year; Tyler Jarosz, Twenty6 Products, Inc., http://www.twenty6products.com, Bozeman, Young Entrepreneur of the Year; and Sarah Calhoun, Red Ants Pants, LLC, http://www.redantspants.com, White Sulphur Springs, Women in Business Champion. Sarah went on to become a national SBA Award Winner.

Exceptional Leadership: Achieving Results Through People
Wednesday-Thursday, July 18-19
8 a.m. to 5 p.m.
Wingate Inn, Missoula
A special, focused 2-day leadership program, led by MMEC staff, is designed to enhance and strengthen the leadership skills at any level of supervision, from senior managers and officers to line supervisors. The program mixes experiential learning with self-assessment exercises and short lectures, which allow participants to better understand their natural styles of leadership, communications, conflict resolution and performance management of individuals and teams. Before and after the training, structured discussions are initiated between the participants and their supervisors. Each participant will work to strengthen key areas of low skill or inexperience, building confidence in personal strengths and proven techniques and strategies. Fee $990 per person. Pre-register by July 13 at https://www.etouches.com/43955

Lunch with Patrick Lencioni, Live at the Commons: A Special Leadership Luncheon
Thursday, August 16, 2012
11 a.m. to 1 p.m.
The Commons
1794 Baxter Lane East
Bozeman, MT
Compete Smart to Offer National Perspectives

The lineup of speakers at this fall’s Compete Smart Manufacturing Conference, Oct. 11-12 in Missoula, will mix national manufacturing perspective by several special guests with insights from a variety of Montana company leaders.

Jay Timmons, who took the helm at the National Association of Manufacturers (NAM) last year, will open the conference with brief remarks, through a special arrangement with the Montana Chamber of Commerce. Timmons promotes a broad-based “Manufacturing Means Jobs!” agenda for maintaining U.S. competitiveness by lifting unnecessary burdens on manufacturing. NAM is the largest manufacturing association in the United States representing small and large manufacturers in every industrial sector.

The conference luncheon keynote on combining enduring principles of marketing with targeted information age tools to reach “Homo Digitus” — the Digital Man — will then be presented by Michael D. Reilly of Rimfire Investments, Bozeman.

The dessert portion of the Evening Social will feature Roger Kilmer, Director of the Manufacturing Extension Partnership (MEP), a program of the Department of Commerce’s National Institute of Standards and Technology (NIST). He will share key strategic imperatives identified for the U.S. to respond to the challenges of globalization, the growing importance of innovation (in products, processes, services, and business organization), and sustainability. His remarks will be followed by an innovative case in point by James Stephens, President and ChiefScientist of Blue Marble Biomaterials, the first zero-waste chemical biorefinery in the U.S. located in Missoula.

Friday morning kicks off with everyone’s favorite — succeeding from right here in Montana with Britt Fred, Northwest Factory Finishes, Linda Miller of PDT, Inc. (Paradise Dental Technologies), and Ken Johnson of CM Manufacturing. And the closing luncheon, featuring a unique menu of Montana fare, will include the trend-setting story of building a Bozeman home made entirely of parts made in the USA with Anders and Jake Lewendal, Lewendal Construction.

Compete Smart, co-hosted by MMEC and Northwestern Energy with other generous sponsors, will also include plant tours, 26 breakout sessions, exhibitors, and a 100-foot wall of products manufactured in Montana. More details coming soon...

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PROPEL YOUR BUSINESS FORWARD with keynotes that explore the uncharted territories of Web 2 and social media PLUS next generation manufacturing strategies.

CATALYZE INNOVATIVE SPIRIT as you hear how Northwest Factory Finishes, CM Manufacturing and Paradise Dental Technologies ignite top line growth with innovation; how Blue Marble Biomaterials breaks through barriers for a renewable economy, and Anders Lewendal discovers payload to build houses while rebuilding American manufacturing.

BLAST OFF TO MORE PLANT TOURS. Then VOYAGE into sessions to build skills & resources in leadership, marketing & sales, supplier development, Lean and innovation. Set a flight path to networking opportunities in the Exhibitor Hall, rove the 100-ft MT Product Showcase, and refuel with Montana fare. Join the fleet of peers and allies at Montana’s Premier Manufacturing Conference—Compete Smart!

Featuring Montana grown & raised foods
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Two stimulating days for $225
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