Pfadt Race Engineering: Supply Chain Issues Impact the Value Chain

Entrepreneurs face difficult decisions regarding the geographic placement of their new business. Should they place themselves physically close to their key suppliers or key customers? What happens when these are both geographically dispersed? Even in a just-in-time/internet-of-things economy some bulky materials still need to travel the old fashioned way on boats, trains and trucks. Choosing to locate close to customers requires longer lead times for entrepreneurs and force them to incur costs that may not be supported by shallow niches.

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Delivering on their promise of providing the most technologically advanced after-market suspension systems for the Chevrolet Corvette, Pfadt Race Engineering has experienced explosive growth and recognition; but the founders Robbin Sowinski and her husband Aaron Pfadt have discovered rapid growth has a downside. Robbin sat in their Salt Lake City, Utah office and stared at the four clocks that symbolized both the potential and the biggest potential obstacle to Pfadt’s continued success. They were set to local time and the correct time for their most-important European supplier as well as the location of two key employees, currently off-site. She knew time to act was slipping away. The 2014 indicators signaled no change in the economy. Was the slowing growth in sales a symptom of that economic slowdown or further evidence that the company would need to accelerate their move into providing other performance car products? Should that “other car” be a US model, European or Asian? Would that decision entail a move away from their adopted home of Salt Lake City, a city and a lifestyle they had come to love.

Of course, in some respects the business had never been better or more fun. They had just taken possession of one of the coveted new Corvettes (“C7” in the jargon for 7th generation) right off the production line to do the final workups on their aftermarket package. The car had tested beautifully racing down I-15 from the offices in Salt Lake City to sea-level testing in Malibu on the Pacific Coast Highway. At a little over 700 miles, the trip flew by thanks to the amazing car, the amazing scenery, and the amazingly generous speed limits on the Western US Interstates. While testing the car in Malibu, they also got a chance to promote the Pfadt Racing brand with a new and lucrative group of customers.

And yet now back in Salt Lake City, it was time to deal with sales that were plateauing. Robbin closed the laptop on the sales projections and whistled for Nigel, her 100-pound Rhodesian Ridgeback “puppy”, so that she could do her daily safety check of testing and fabricating rooms. With Nigel loping along behind her she hopped onto a Razor scooter and wheeled along the hallway. She was dreading the fact the fabricators would be completing product that would go into inventory rather than be shipped out as customer orders.

**Industry Background**

Pfadt Race Engineering operates in within the $10 billion Automobile Steering and Suspension Industry (Danova, 2012). This is an extremely diverse group of manufacturers that includes firms which build and sell shock absorbers, steering columns, steering gears, shock absorbers, gear boxes and related parts. Although many industry players sell primarily to original equipment manufacturers (OEMs) or the major automotive companies, Pfadt sells primarily to the “aftermarket”. The aftermarket consists of car enthusiasts who upgrade the performance of their vehicles through the purchase and installation of non-standard equipment. This sector of the economy is tracked by the Specialty Equipment Marketing Association which subdivides the industry into three product categories (Appearance and Accessory, Racing and Performance and Wheels, Tires and Suspension) and monitors nine sub-niches within these product segments and can be described with the following matrix (Knapp, 2011):

**Exhibit 1: SEMA Sector Matrix (Pfadt Race Engineering products indicated with X)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | Appearance and Accessory | Racing and Performance | Wheels, Tires and Suspension |
| Light Truck |  |  |  |
| Off Road |  |  |  |
| Racing |  | X | X |
| Compact Performance |  |  |  |
| Street Performance |  | X | X |
| Restyling |  |  |  |
| Restoration |  | X | X |
| Custom |  | X | X |
| Other |  |  |  |

While larger competitors manufacture parts for several different automobiles, Pfadt focuses on two General Motors vehicles, the Corvette and the Camaro, which share some common characteristics including passionate devotees who race and show their modern vehicles. There are more than 1.5 million Chevrolet Corvettes on the road today, having been in production since 1953. One of the most famous cars in the world, it has survived into its seventh major re-design, or generations, including the 1963-67 Stingray version (2nd Generation, or “C2”) which was named the “Coolest Car” of all time by Automobile Magazine, in 2008. Latest estimates put the number of Camaros, which entered production in 1966, at approximately 900,000 still running. This vehicle has seen four re-designs in which the fifth generation was largely a re-creation of the first and most popular version. Currently, Pfadt produces product for 1996 and newer models of the Corvette and 2010 and newer models of the Camaro.

**Exhibit 2: Sales by Niche**



Despite a niche strategy Pfadt is forced to have an extensive line of stock keeping units (SKUs) for both the Corvette and the Camaro, including both individual components and multiple part kits to account for the range of products under these two banners. In part because the true needs of these customers are unclear. Pfadt has relationships with most of the major installers and they receive reports from installers which parts and kits are the most popular in their shops. That’s only part of the market as many of their customers are part of the do-it-yourself crowd. A few even have private mechanics. When Robbin was in elementary school, a manager in a different industry summed up the problem Robbin faces by lamenting, “…we’ve identified the 90 core product/market and geographic segments, my marketing people tell me they can’t develop the necessary facts to develop winning strategies because the data just aren’t available…” (Garda, 1981: page 18).

**Exhibit 3: Comparative US Registrations**



There are lots of classic and performance cars in the marketplace (Exhibit 3) but the Corvette holds a special place in the hearts of so many owners; including Robbin, as her family has owned a succession of the cars through the years (her Dad currently drives a white 1973 Stingray). With a large and active base of collectors and racers, the Corvette is perfect for aftermarket parts. The Camaro is the perfect complement given its reputation amongst those same audiences and the common manufacturer. Other brands also lend themselves to the aftermarket. Dodge and Ford are actively collected and raced throughout the United States. But they can be very different then the twin muscle cars that form the basis for Pfadt’s business model.

**Upstream Geography**

Western Europe (England, France, Germany, Belgium and Italy) is home to many of the automotive industries biggest names. In addition to being the home for so many of the luxury and high performance brands coveted by collectors, many key car components come from Western European companies. In addition to high end electronic components like Blaupunkt, Europe also supplies the auto industry and the aftermarket companies with such inputs as high-grade stainless steel. ArcelorMittal, the world’s largest steel manufacturer is headquartered in Luxembourg and its spin-off stainless steel manufacturing division, now Aperam S.A. has its main facilities in France, Belgium and Brazil. With fewer domestic sources for US auto industry companies, the European companies are becoming the main source of stainless steel.

Of course the issue for firms, like Pfadt, in the Western United States is that countries like Belgium are 5,000 miles and seven time zones away. Coordination with suppliers at this distance can be problematic. The big bulky steel shipments must travel to the coast and then by boat across the Atlantic, up the Saint Lawrence Seaway to the Great Lakes and then across the country to Salt Lake City. Much less convenient than for Pfadt’s rivals in more traditional regions like the Upper Midwest (stretching from Detroit, MI through Toledo, OH; and east to Youngstown, OH) or Southern states such as Tennessee.

While Chinese and Indian steel manufacturers are also a possibility. The lack of premium reputation adds to the language, cultural, temporal and transportation difficulties. The exacting specifications Pfadt required meant purchasing specialty steel in Belgium, rather than the initial group of US suppliers they had been using or using an Asian provider.

Pfadt paid on time, were willing to wait on backlogs and sent their engineers to Belgium several times a year to discuss ways to make the partnership better; but they are often in backlog status when production was interrupted. It’s a question of size. As quickly as Pfadt is growing, it’s a tiny customer for the large multi-national steel company and the highest quality potential rivals.

**Downstream Geography**

Western Europe has long had a racing culture that rivals the circuits and passion in the United States. The emphasis is on European cars to the point of near exclusivity. Enthusiasts upgrade and race BMWs, Fiats and Porsches among many brands in a crowded marketplace. But some of the teams use Chevrolet products as well. The vehicles are heavily modified for the highest levels such as the Would Touring Car Championship which races in the European countries of Germany, France, Hungary, Russia, Portugal, Slovakia, the Czech Republic, as well as Argentina, Qatar, Morocco, China, Japan and Thailand. The Championship no longer travels to the United States for a race (www.fiawtcc.com)

As evidenced by their inclusion as race sites in the most prominent series, after-market performance enhancements are becoming big business in Asia and the Middle East. As wealth and car-ownership proliferates in these two regions, they are increasingly imitating the United States in terms or a culture of private and semi-professional racing. American muscle cars like the Corvette and Camaro are welcome along with the top of the market European cars. Smaller Japanese and Korean cars, often dismissed by long-time enthusiasts, are a growing part of the (after) market in Asia and are seen as a fun, colorful alternative to the muscular Americans and the stately Europeans.

Pfadt’s reputation within the industry was sterling and they were beginning to draw clients from amongst the big NASCAR and Formula One teams – which helped attract the amateurs. Pfadt engineers were working with teams on integrating their parts, testing performance parameters and working pit row with their teams. The Formula One races run every other weekend in cities around the globe. The annual schedule generates the company a tremendous amount of frequent flier miles as it circles around the globe from Australia through Asia and Europe before hitting North America, South America and back to Asia. Typical race cities can be as large and metropolitan as Abu Dhabi and Mexico City or as out of the way as Baku, Azerbaijan or Silverstone, England (half way between London and Stratford-upon-Avon if you desire a vacation that includes both auto races and Shakespearian theatre).

The NASCAR schedule in contrast stays entirely in the United States but includes races almost every weekend from February through November. The schedule takes the teams to 22 different states centered in the American Deep South but stretching from Southern California to New Hampshire.

The logistical and staffing commitment is daunting. Even though the visibility with the racing teams and decision to focus on the highest-end of the market had created credibility with buyers (both end-users and installers).

They had attracted a following amongst amateur racers whose day jobs included Olympic athlete, rock musician and movie star. These clients were a perfect match for Pfadt as they were more concerned with performance and appearance than cost. Whereas the Western US is a hotbed of driving enthusiasts and a year-round sport thanks to the climate; the potential market is made even larger given the ability for hobbyists to locate and restore older models – which have been protected from rust-inducing road salts.

The Western US is a big place though. The driving enthusiasts enjoy long stretches of open roads with high speed limits (75 miles per hour in some states) and massive open spaces like salt flats and old runways with few vehicle or speed restrictions. Population centers are widely scattered with the exception of a few major metropolitan areas, primarily Los Angeles and its satellite of affluent communities stretching along the coast. Although the Pfadt team spends a lot of time in Los Angeles with customers, it’s a still a ten-hour drive or two-hour flight.

Only a percentage of Pfadt racing customers are able to receive and use their products right out of the box. These are complicated additions or alterations to the key systems in expensive automobiles. While the movie stars and musicians can command meetings with the Pfadt team engineers or pay for custom installations, more than half of consumers ordered parts that were shipped to an automotive body shop.

**Robbin’s Background**

For Robbin and Aaron it’s always been about trying to figure out a complex marketplace. After Robbin got her MBA from Michigan, she agreed with Aaron it was time to leave the corporate world. Robbin was an analyst for a major financial firm and Aaron was a design engineer, primarily transmissions, for one of the Big Three US automakers. Both wanted saw value in translating Aaron’s engineering experience to the aftermarket auto world. Both wanted to leave Detroit.

Reading industry magazines and participating in internet forums/discussions suggested the Western United States would have more auto enthusiasts. The long hot summers and long empty highways practically begged for a great car to cruise historic Route 66 or the scenic Pacific Coast Highway. What better way to get away to Napa Valley or Sun Valley than in a classic hot rod or convertible. Los Angeles, Denver and Seattle all beckoned as huge commercial markets. They also had elements that reminded the couple of Detroit. Eventually the decision came down to Salt Lake City and Boise, Idaho based on livability and Salt Lake City won based on size of potential market for their long-range plans.

In the short-term they needed a starting point. They interviewed several franchise companies before settling one that offered a turn-key operation in which they could overhaul engines and transmissions and make many of their own marketing decisions. Margins were much smaller than expected as the pair found themselves captive to the inventory control systems and pricing of their parent. The experiment taught them they could manage their own shop, handle back office operations and grow a business. They also learned quickly that without a value-add, they were a commodity; regardless of how expensive and complex their product.

In 2004 they ended their contract and re-opened as under their own moniker, with the intent of overhauling engines, transmissions and other major automotive systems. They continued to market to individual car owners via newspaper advertising. Free to work with multiple suppliers, margins improved and business was steady but unspectacular. Too many customers were price-sensitive or on demanding schedules as the engine and transmission rebuilds were for primary family vehicles or business vehicles. Business grew with advertising and with the number of mechanics that they hired but the industrial location in Salt Lake City intimidated potential clientele and much of Robbin’s time was handling personnel problems that invariably led to delays which morphed into customer issues.

During this period Aaron renewed his interest in racing autos. Although NASCAR and open-wheel racing dominate the coverage on the major media outlets, hundreds of amateur and semi-professional racers jump onto their motorcycles or into their modified personal autos every Friday night or weekend day. Some estimates suggest 17% of the US population participates in racing at some level (Amari, 2012), a number that continues to climb. These people are fascinated by the latest innovations in engine power and handling. And so is Aaron. The more he raced and the more he talked shop with other racers, the more it became clear that here were potential customers with high technological demands and deep pockets.

**Founding Pfadt Race Engineering**

In 2006 they made official what was becoming obvious in their business. Rather than install other companies parts, they would engineer and manufacture their own. The plan continues to revolve around developing high performance designs for automotive suspension systems. Originally these designs were manufactured by third parties although the success of the company has allowed for the acquisition of a greater in-house manufacturing capability. This allows for the Pfadt employees to build, tool and test virtually every component in their automotive parts. This required a move into larger and more inviting space. Robbin, the marketing person and the sales force would occupy the front of the offices. The growing manufacturing facility and the warehouse took up about half of the total space and the rear of the facility was reserved for a laboratory where Aaron and the engineers could test on both cars and fabrication equipment in the pursuit of ever more exacting results.

By striving to be the highest performance and most technologically advanced suspension equipment on the market, Pfadt developed a sterling reputation, with OEMs and professional racing teams adopting and adapting their equipment. The wall outside of Robbin’s office is testament to that reputation. There are reprints of the numerous articles from trade journals on the quality of their product interspersed with awards and race photos. Goodwill and relationship building helped deliver two straight years, 2010 and 2011, as one of Utah’s fastest growing companies.

 Building on the best parts of their previous business, the company continued to design improvements to automotive systems, focusing ever more on suspension systems. The company moved away from customer installations and sold to dealers (service stations, repair shops and retail stores) as well as do-it-yourself types. Robbin handles marketing and has placed the company in all of the correct channels (exhibit 4), including the internet, catalogs and trade magazines and the shows and with independent shops. While racing is an important proving ground, most of Pfadt’s products are installed on ‘daily-driver’ cars. These vehicles are owned by enthusiasts who like to make performance modifications, but still drive the vehicle to work or out to dinner. Online marketing has grown in importance and a person was hired to handle direct online sales and customer service. The period of 2009-2011 was great for the company and racing in general. New teams were still being formed and the biggest dilemma Pfadt had during this time was keeping dealers happy as individual novice customers took advantage of volume discounts to purchase Pfadt parts for resale or drop ship at dealer locations. These customers found Pfadt through the on-line marketplace and after reading about them in the many magazines dedicated to the automotive market. Out of stocks were a problem and as the company continued to move back in the supply chain and came into competition for raw materials with international firms which were ten- and hundred-times their size. Transportation costs rose as Pfadt turned to European suppliers of high grade components.

**Exhibit 4: Market Channels**



The decision to focus on the top end of the market and high performance equipment has led to a secondary revenue stream as the team consults with racing teams, including on race day. Being credited by teams who have won at Daytona Racetrack opens doors. It is not unusual to find Aaron or one of the engineers on pit road or back in the garage offering tweaks and testing the parameters of their product. Races were held around the country and in Europe which generated a lot of travel and down time for the staff. The business is lucrative both from the professional teams willing to pay for incremental advantages in power, torque or handling and the pro-am racers paying top dollar for Pfadt engineers to join their entourages.

 As the brand has established cache in racing, merchandising deals were pitched to Robbin as well. Although she thought them premature, t-shirts and toy cars emblazoned with Pfadt Race Engineering could be in the offing.

The employment situation has stabilized greatly from the first few frantic years. The engineers were now all multi-year employees and committed to the organization. With Robbin’s husband as their leader and role model, they were uniformly bright with solid resumes and solid design ideas and yet very willing to get their hands dirty to test the equipment. They were all engineers and so it made for a quiet and professional work environment. Thank goodness for the marketing/shipping department. A little more free-wheeling than the engineers, it was one of the marketers who had donated the first (of several) Razor scooter to traverse the long narrow hallway from the front office to the warehouse/loading dock. In a cost-saving move, Pfadt had leased the unused space in an existing facility which left engineering in the front of the building, fabricating and logistics in the back, and the marketing scattered wherever available work space (and the needs of the day) dictated.

The recession did not touch Pfadt early on but the 2012 results had signaled change. The first few months of each calendar year had typically been slow with customers from the East, Midwest and even the South focused more on digging out the driveway than the toys parked on it. For the past several years the slow months had allowed for Pfadt to resolve their back inventory issues and build inventory reserves. But when sales did not accelerate over the summer months as in past years, Robbin grew worried. Word of mouth on their products was still unanimously positive, and the recognition continued, but the rate of sales growth was much lower. The August 2013 results confirmed what she was seeing in the too-full warehouse. The race season for 2013 had wound down in the US and Pfadt was going to be stuck carrying a lot of inventory on both Corvettes and Camaros.

And yet, there was more traffic on their websites from potential customers cajoling, pleading, demanding Pfadt parts for their Ford Mustangs and Dodge Chargers. The discussion boards were also filled with discussion of European cars and the Japanese racers.

As she thought about whether to enter these new niches, she considered the extensive investment in tooling and manufacturing equipment. How much of it could be re-purposed? Because of their relationships in the industry CAD data were available for the proper engineering of parts for the Corvette and the Camaro, but without access to this same data for BMW, how could they determine the prototyping and test time and related development costs? Would it make more sense to broaden their current product offerings for the Corvette and Camaro, where they already had an established reputation and dealer network? And maybe additional product wasn’t the answer at all. Perhaps they had merely neglected their marketing and simply needed to visit their current installation shops more often and increase their advertising budget for online and magazine ads.

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