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One EMS Provider’s Journey
Growing Through Joint Venture: A Roadmap of One EMS Provider’s Journey

One of the biggest challenges for regional electronics manufacturing services (EMS) providers wishing to grow to the next level is expanding multi-nationally. This often is a chicken and an egg scenario. In order to have competitive costs, the scale of the international operation must be large enough to absorb its overhead costs. Yet, most customers want competitive costs and an established operation before they will source business to a new facility, so it can be challenging to have the pipeline of business necessary for a fast ramp.

While larger EMS providers often solve this challenge by acquiring existing operations, this option is often out-of-reach for mid-tier providers. It also comes with tradeoffs. An acquisition strategy is often funded with private equity capital which can be tied to a time-sensitive exit strategy. The lowest cost acquisition candidates may often have operational issues or less attractive customers. In short, an acquisition-based growth strategy often results in loss of control of overall business strategy, unanticipated turnaround costs and/or significant management distractions.

When EMS provider Firstronic was taken over by a new management team in 2011, it was a very small, single facility operation based in Grand Rapids, MI. The goal of the new team was grow the company rapidly while establishing a global business. Several outsourcing trends worked in its favor. Its target customer base had:
- A desire to keep manufacturing support near product development teams
- A desire to nearshore production to specific markets
- A desire to minimize the number of suppliers supporting projects.

However, while proximity to Detroit worked well with the first and third trends, achieving the global footprint those customers were looking for in the necessary timeframe was challenging. The best path to support this require-

Firstronic’s JV strategy has enabled it to focus its capital on state-of-the art production equipment investments such as these vapor phase ovens located in its Juarez facility.
ment was a mix of expansion through organic operations and international joint ventures (JVs). Over the last four years, the Company has expanded its operations to include joint ventures in China, the Czech Republic and India, along with a greenfield facility in Mexico to support these specific customer manufacturing requirements.

Making a joint venture strategy work requires strong focus on the business requirements driving the need, the quality of the partner and the strength of the systems set up among facilities. Key considerations include:

- Align with key customers
- Select partners who see benefit in a long-term relationship and have needed capabilities
- Leverage JVs to expand / broaden capabilities.

**Align with Key Customers**

One of the reasons joint ventures often fail is because the business that motivated the alliance fails to materialize. Firstronic had addressed that issue right after the management change in 2011. Like many automotive suppliers, the Company had struggled to get through the down cycle in 2007-2010 and in the process sought to broaden its business focus while identifying the nonviable accounts.

The first step for the new management team was developing a customer rationalization strategy. The goal was to reduce the customer base to align with the customers which had common long-term business goals so that shared resources could be focused more effectively. The management team utilized a modified Boston Consulting Group (BCG) matrix to identify the customers they wanted to keep. Each customer was analyzed and assigned a favorability score based on the following criteria:

- Total Volume (combining the complete outsourcing package)
- Mix (number of assemblies)
- Complexity (number of unique line items in bills of material)
- Percent of placements that were automated
- Procurement challenge (end of life, sole source, allocation issues, etc.)
- Product life cycle (in years)
- Customer's internal PCBA capability

Once the favorability of each customer was scored, a Rationalization Matrix (Figure 1) based on the BCG matrix was used to visually illustrate the rationalization strategy.

Customers with low throughput and a low favorability score were encouraged to transition to other suppliers. Customers with low revenue, but a high favorability score were classified as “up or out” and the Company sought to increase its revenue with these companies (or move them out). Customers with high revenue potentials and a high favorability score were given an increase in pricing as a motivation to exit.

As a result of the rationalization process, the customer base went from over 20 companies and over 5000 unique part numbers to less than 10 customers and under 1,000 unique part numbers. This significantly reduced the complexity of the business and enabled more focus on the needs of preferred and targeted customers with high favorability scores.

Most importantly, that rationalization process demonstrated to the customers that remained, that the management team was serious about aligning business strategy with their needs. This generated discussion about the regions where the customers expected manufacturing support and the specific projects that would be awarded provided a global network of facilities was in place. Consequently, the management team was able to look for JV partners with a list of specific projects and requirements in hand. And, the necessary linkage between product development teams and US-based manufacturing support provided reassurance that a business introduction to a JV in lower cost labor market would not result in a net loss of the US business.

**Select the Right Partners**

Partner selection is another key factor that determines the success of a JV strategy. In Firstronic’s case, shared projects have also involved extensive product development efforts. JV teams need to be able to support fast production ramp up with good communication and a robust
production validation strategy. A key goal in this strategy is to pick partners with enough engineering and management competency to hit the ground running. While Firstronic’s engineering and program management resources actively support project transfer activities, the goal in selecting JV partners is to identify strong partners capable of supporting the project without stretching Firstronic’s resources. The end result has been development of relationships that not only accomplish that, but also have resulted in market-leading performance.

For example, the Firstronic’s JV partner in Goa, India, TTPL, received the Development Award from Dura Automotive Systems Pvt Ltd. in Pune during Durat’s Supplier Conference. The award was based on the performance of the Firstronic/TTPL team on a project in Q1 2014.

TTPL was selected from 60 registered suppliers from India and China. Key milestones accomplished by the Firstronic/TTPL team on project included:

- Product prototypes developed and delivered in four weeks
- Superior Supplier Qualification score on the customer’s Supplier Quality Audit
- Development, installation commissioning of an EOL tester built in Michigan in 15 weeks’ time thanks to close coordination with Firstronic, QM Automation and Dura
- Procurement, installation and commissioning of a conformal coating and UV machine plus process approval in the same 16-week timeframe
- PPAPs successfully run three months after initial purchasing agreement signed.

In the award-winning example above, there was close coordination among teams at Firstronic, TTPL and the customer in the development of test equipment, prototypes, specific manufacturing processes and product validation. The production ramp took less than four months, including the non-recurring engineering (NRE), equipment installation and the process development phases. This was the JV’s first project and the team has continued to grow tighter and more collaborative in the past two years.

**Use the Relationship to Expand Services**

While a good JV strategy provides scalability with limited investment, it is important that customers see a unified entity, rather than a collection of disparate businesses with a wide variation in processes. Firstronic takes a holistic approach to Lean manufacturing and its JV partners’ focus on Lean principles were an important consideration. Additionally, the potential strengths each partner could bring to the service equa-
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For example, the first JV initiated was with Maxway Technology in Shenzhen, China. A key reason for choosing Maxway, was that the Chinese manufacturer was similar in size and market focus. Both companies utilized similar operations which incorporate synchronous flow manufacturing to provide medium volume customers with minimal production cycle times and schedule flexibility. The JV, known as Maxtronic, incorporated the Lean manufacturing approach, as well. In terms of the strengths the relationship added, Firstronic had more depth and greater strength in utilizing distribution partners, while Maxway was strong in the sourcing of tooling, test fixtures and equipment, plastic injection mold tools and components, PCBs, and other custom parts.

For its Czech Republic JV, Firstronic worked with APAG. That company’s EMS synchronous flow strategy and production capabilities is similar to that of Firstronic’s Grand Rapids, MI facility; however, they also have a design center with 50 engineers located in Nurnberg, Germany. This engineering team adds significant product development support breadth to Firstronic’s capabilities.

The end result of this strategy for Firstronic has been organic growth in its wholly-owned facilities of over 400 percent during the past four years since 2011. In recognition of this accomplishment, the Company was listed on the INC 5000 list of fastest growing private companies in America in 2015. During the same period of time, employment in its Grand Rapids operation has increased from 45 to over 200 employees, and nearly double this with the employees of the Company’s Mexico operation. In addition, when the JV revenue is included, 2014 revenue more than doubles and the projected revenue of combined operations in 2015 exceeds $100 million.

A well-planned JV strategy has enabled Firstronic to support both customer requirements for a global network of facilities and its own requirements for evolution from a stand-alone regional manufacturer into a multinational EMS provider in less than four years, with minimal overhead expense and a very lean management team. The benefit to customers has been a support infrastructure that meets their geographic requirements and a supplier who has expanded core services, while focusing its working capital on enhancing technical capabilities and improving internal efficiencies.

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REFERENCES

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