



**BAVERSTAM ASSOCIATES, INC.**

Consultants in Advanced Materials

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## **Selected Strategic Market Studies**

### **Market potential for glass and coating technologies in the PV (solar) industry**

A client did not serve the PV (photovoltaic) industry. They asked us to research the market potential for their glass and coating technologies in this industry. This included both conventional solar modules using silicon solar cells, as well as emerging thin film technologies. We interviewed the leading mid-to-large size solar module companies and many emerging thin film PV companies to understand their technical requirements, and their opinions about tradeoffs between different existing and emerging technologies. We also uncovered some interesting technologies that were new to our client and obtained feedback regarding their potential end-users. This process allowed us to benchmark our client's existing technology portfolio and advise them on a strategy for the solar industry in both conventional and thin film market segments.

### **Market assessment of value added ceramic coatings for sintering trays**

A client asked us to assess the market potential for a value added ceramic coatings on sintering trays that they manufacture. We assessed the global market and investigated the US and European potential end-users in detail for cemented tungsten carbide sintering as well as sintering in the powder metallurgy (PM) and metal injection molding (MIM) industries. We identified technical and cost drivers that would dictate the potential adoption of the coatings. This involved identifying key sub-segments of the markets that we investigated and also understanding different processing methods practiced in different geographical regions and by different companies.

### **Global market study of temperature control material**

A global market leader in a temperature control material faced growing competition from low cost producers in Asia and North America. They asked us to conduct a global market study of various producers and estimate the global market as well as production in different geographical areas to help them strategize their growth in new markets. We provided key production and price estimates for their competitors and provided a global breakdown of markets and producers.

### **Evaluation of US market for composite heat spreader material**

Our overseas client faced increasing demand for a composite heat spreader material due to improved market conditions and an exit by a US domestic competitor. The client asked us to estimate the total US market and its market share. We interviewed over eighty companies in this process.

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Our client produces parts manufactured from a specific material. It asked us to assess the potential market in high temperature sintering for plasma sprayed ceramic coatings on this material. We explored the market potential in a number of market segments that met certain criteria. We provided a comprehensive analysis of the key market segment where the company already had some peripheral experience. This included technical analysis as to whether additional companies in this industry segment could adopt the technology. We also analyzed another much larger market segment and pinpointed particular niches where the technology is particularly attractive.

**Polymer market acceptance study for the oil and gas industry**

A client focusing on engineering polymers for the oil and gas industry commissioned a study of the market acceptance of certain polymer chemistry for the oil and gas industry. The objective was to determine the potential of this polymer to meet actual and future requirements in certain branches of the oil and gas industry. We interviewed key players potentially interested and evaluated the present and near term the market potential. We also provided guidance regarding future trends.

**Sourcing of waste polymer in the United States**

A client had developed a manufacturing process that utilized a specific type of waste polymer. This processing technology had been developed in Europe and relied on a large local supply of the material. The company became interested in replicating this manufacturing in North America. A prerequisite for this was the availability of the waste polymer, which also had to be available in a specific post-processed form. We carried out a detailed search for the waste polymer and found that it was processed and used differently in the United States. Thus, we mapped out the usage of the material in North America. We provided detailed figures identifying specific plants and their annual waste output throughout North America. We collected samples from different application sectors so that our client could test its suitability for the process. We also provided detailed cost estimates for shipping of the material to an East Coast based processing location.

**Market study of semiconductor equipment component**

Our client, a design and manufacturing firm had identified a component in the semiconductor manufacturing equipment as a potential product that was within their manufacturing capability and expertise and were interested in becoming a supplier of the component. Before embarking on a marketing program, they wanted to assess the size of the market with particular focus on the replacement market. We conducted a market analysis of the component at both the OEM and equipment user level and identified potential customers for our client. Our client is currently in discussion with these customers.

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Certain rare metals are important constituents in optoelectronic and microelectronic materials with applications in fiber optics, lasers, and high-speed circuits. We assisted a major metals producer to understand the markets for these materials by providing market size, uses and material specifications; growth opportunities in new and existing applications; competing materials and technologies; potential new applications for these materials; and insight into the raw material price variations.

**Strategic analysis of the photonics market**

A client requested assistance in developing strategic directions for their business in photonic technologies. Baverstam Associates participated with a team of experts to analyze market trends, threats, and opportunities. We provided recommendations on how the client could capitalize on their strengths and re-position their business. We assisted in providing an objective assessment of the company's organizational structure, strengths, and varied goals and directions by interviewing corporate executives and analyzing those findings. In preparing a technology roadmap for optoelectronic devices, we identified emerging technologies that promise to provide new capabilities and standards for performance, and also identified alternative technologies that could potentially reduce the market for photonic materials and devices.

**U.S. market for metal matrix composites**

A European manufacturer of metal matrix composites is interested in entering the U.S. market. They asked us to evaluate the potential opportunities for their products and estimate the size of the market. We provided a complete overview of opportunity areas that included electronics, telecommunications, automotive and aerospace; relative size of markets; and potential competitors. This aided our client in making a strategic business decision. We also identified future material and technology trends in several of these applications.

**Markets for ceramic hot gas filters**

Our client had been approached by a German supplier of high temperature ceramic candle filters regarding exclusive distribution of such products in North America. The main market for the product was coal fired power stations. Our task was to evaluate the technological merits of the German product and to determine the size and availability of the market in North America. Our conclusion was that the German product was well tailored to serve the European market, given the environmental laws and associated regulations. However, the corresponding environmental laws in the US did not warrant such a product at that time.



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**Market study for a producer of a European automotive parts supplier**

Our client is a leading European supplier of automotive parts and components made of glass fiber reinforced phenolics. The client had developed a strong position in the European market and was interested in potentially entering the North American market with similar or somewhat modified products. Our tasks were to assess the size of the market for their automotive components, barriers to entry, competitor position, differences in technological approaches between in the US and more.

**Market study for a US based rhenium metal producer**

The project was focused on understanding the market size and associated drivers for the use of Rhenium in a range of end use applications. It also entailed understanding the distribution channels and levels of vertical integration between suppliers and end-users.

**Market for temperature sensors in the petrochemical industry**

Our client was interested in understanding the growth potential for temperature sensors in refineries and petrochemical plants. The premise behind the study was that existing plants were being retrofitted with sophisticated control systems. We surveyed the industry by approaching plant and refinery managers; manufacturers of control systems; engineering companies that build greenfield plants; and existing thermocouple suppliers.

**Market potential for high-performance temperature controlled packaging**

A client had observed that the cost of a high performance insulation material, which was developed for the space program, had dropped considerably in price. The company therefore commissioned a project to examine the potential of developing high-performance insulated packaging for temperature sensitive biomedical products. These materials would replace simple expanded polystyrene (EPS) packages that currently dominate the industry. We approached major pharmaceutical and biotechnology firms in order to understand the market potential; economic drivers; and performance requirements for their packaging.