

## **CIBOR SWOT Analysis Executive Summary**

An important role for CIBOR is to provide biomedical linkage for our extensive manufacturing base in Kansas. We interviewed 19 tier I and tier II composite and polymer manufacturers who provide parts and support to original equipment manufacturers (OEMs). We asked their perspective regarding an emerging biomaterials economic cluster for this region. All interviews were conducted face-to-face at their facilities and we often toured them before or after the interview.

We asked opinions on perceived Strengths, Weaknesses, Opportunities and Threats (SWOT) as it relates to biomaterials commercialization; not only for their respective companies but for the region as a whole. Please refer to the *“Biomaterials Cluster Reference Sheet”* and *“Tier I & Tier II Composite & Polymer Manufacturer SWOT Questions”* for information that was presented in advance of and questions asked during the interviews.

The SWOT analysis is not a scientific process but it is an effective way to determine market capabilities, perceptions and attitudes toward an industry or a new venture. Responses were organized into emerging “themes” and weighted based on frequency of responses. The findings focused on six areas:

**1. What is your level of interest to diversify into biomaterials?**

- 55% of the responses indicated interest was high to very high. 25% were interested, 15% had low interest and 5% did not know.
- 64% of the responses indicated interest in Class I& II products only and 18% were interested in all classes. However, as the manufacturers learned more as the interviews progressed, it became apparent if product liability was alleviated or eliminated, they would be more receptive to manufacturing Class III products.
- 16% of the responses indicated a formal in-house R&D capability with staff. It was made clear much more could be done in biomaterials with outside R&D and technical support.

**2. How do your manufacturing capabilities and the region’s manufacturing capabilities fit into an emerging biomaterials cluster?**

- 30% of the responses indicated they already are making or have made biomedical products. Composites, tool design, innovative manufacturing processes and reverse engineering were cited as major areas of competency.
- 41% of the responses wanted to avoid Class III products; mostly due to liability issues. 24% did not know and 18% would take on all product classifications.
- Not knowing the FDA process, not understanding the industry in general, lacking capital and clean rooms were identified as barriers to entering the industry.
- 46% of the responses identified manufacturing expertise as a major strength. Many manufacturers identified nimbleness, responsiveness, creativeness and hunger as major strengths they bring to the market.

- 52% of the responses indicated the need for medical industry expertise to enter the market.
- A highly skilled workforce was identified as a major regional strength.
- Workforce capacity/shortage, lack of R&D, labs and medical industry knowledge were identified as regional weaknesses.

**3. Workforce needs?**

- 60% of the responses indicated their respective workforce could easily transition into the biomedical industry. 55% indicated the regional manufacturing workforce could easily make the transition.

**4. How would a new biomaterials cluster interact with the region's existing industry clusters?**

- The major opportunity identified was the potential to pool resources and product knowledge to transfer to and benefit all clusters in the area.
- Competition for talent and resources was identified as a threat.

**5. What types of resources are needed to transition into biomaterials?**

- 44% of the responses indicated the need for industry expertise and support, 30% indicated capital and funding resources and 13% indicated workforce development and recruitment.
- About a third of the responses indicated strong local business support for startups and about a third did not know. Half indicated startups could be funded quickly and over a third indicated regional government did a very good job in providing new venture assistance.
- 42% of the responses indicated they would consider equity partners, 37% would not and 21% did not know.
- All but one of the responses indicated they would team with a major orthopaedic manufacturer.

**6. How can an academically-based Center of Innovation best assist you?**

- 52% of the responses requested R&D and technical support.

**Conclusion**

As a twist to *The Field of Dreams*, the composite and polymer manufacturers are saying, “Come and we will build it.” If area manufacturers receive technical support, R&D support, labs and partners who know the industry, they will embrace biomaterials manufacturing. Interest in diversification is high and they are confident they can be a major driver for a biomaterials cluster in Kansas.