

Technology Sectors

The State of Maine has targeted seven technology sectors, including mature industries (like forestry and agriculture) as well as emerging ones (such as composite materials and biotechnology) for investment and other types of support. However, Maine needs more than individually successful companies to have a vibrant economy. Since MTI began operations in 2000, it has helped develop strong clusters within those sectors to stimulate business investment in technology development across the seven sectors.

MTI continues to invest in these targeted sectors with a focus on growing and strengthening clusters of activity that include supporting expansion of research and development; expanding the workforce, particularly those with graduate training within each sector; supporting creation of new firms; and linking to networks and alliances for financing and product development.

Biotechnology

Maine has developed distinct knowledge and skills in genetics and genomics as well as commercially successful products in the diagnostics markets based on knowledge of antibodies and related biochemistry and biology fields. The large and growing volume of research indicates potential clusters that may emerge in the future, while the diagnostics/antibodies industry represents a current emerging cluster. There are overlaps with the information technology and precision manufacturing sectors via bioinformation and biomanufacturing.

Composites & Advanced Materials

Composites and advanced materials is the technology sector which, as a whole, best approximates a sustainable cluster in Maine today. The sector and its industries are grounded in a clearly defined set of knowledge and skills that are strongly identified with Maine. Both formal and informal networks have arisen to develop and widely diffuse the key knowledge and skills. There is a long track record of entrepreneurship in the historic boat building industry, which has adapted to new market conditions, and in new companies looking to develop new products made from composite materials for the industrial and renewable energy markets. Finally, there is a substantial critical mass of commercially successful firms selling their products in global markets based on the knowledge and skills centered in Maine.

Environmental Technologies

The Environmental Technologies sector represents a highly diverse sector from which has emerged a clear set of directions in the fields of environmental services and engineering. Maine has a definable advantage in the knowledge and skills in this area, with a diversifying set of activities to meet growing markets. Maine's own commitment to a high quality environment serves as a spur to innovation in this field, which may permit national and global markets to be served. The environmental services subsector is the one part of this diverse sector that has the characteristics of a sustainable cluster.

Technology development and application has been growing in Maine over the years, with the convergence of market demand, innovation in composite materials, leadership from the University of Maine and industry players such as Cianbro and Reed & Reed, and Maine's natural tidal and wind

assets. The worldwide demand for certified “green” products is also growing, presenting a ripe opportunity for Maine.

Forest Products & Agriculture

Forest products and agriculture are both grounded in a very solid base of knowledge and skills backed by extensive research facilities centered at the University of Maine. Since these sectors have been embedded in the Maine economy for so long and have achieved significant scale of operations, both forest products and agriculture contain a number of clusters that have shown they are sustainable over time.

Though still facing mature and highly competitive markets, there are opportunities for innovation in each subsector that may provide new chances for growth. Some of these opportunities are variations on traditional product lines, such as the increasing market for specialty and locally produced foods and beverages for niche markets. Others are at the cutting edge of biotechnology as in biofuels and bioplastics, which will require significant growth in Maine’s research capacities.

Information Technology

Information technologies and the knowledge and skills associated with them are so widely diffused throughout the economy that one must look for more defined areas of specialization to identify potential clusters of competitive advantage. Maine has developed a specialization in geospatial technologies, which is an emerging cluster. In addition, new media, bioinformatics and the application of IT to measure and control technologies are all potential clusters.

Marine Technology & Aquaculture

Aquaculture exhibits the characteristics of a sustainable cluster. The markers for its products are strong and could grow significantly, given the world’s demand for seafood and the severe pressures on capture fisheries. It is a technically complex industry that still faces a number of challenges in mimicking the functions of natural ecosystems to grow and sustain organisms, but a robust research and skills base exists in Maine to meet these challenges. The strength of the research foundation in Maine, together with growth in demand for technologies related to ocean observing and measurement over the next decades means that new clusters may yet emerge from this sector.

Precision Manufacturing

The precision manufacturing sector includes two distinct subsectors: metal products and electronics. Each has a small number of very large world-scale firms and a much larger number of smaller companies serving a variety of customers, primarily outside Maine. The electronics sector shows high rates of innovation as measured by patents. Innovation capacity rests primarily within the private sector, though higher education institutions provide some support. New areas of activity include network development, training and certification in aviation manufacturing as well as an emerging group advancing biomanufacturing in Maine.