

# C I N T R A F O R

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## Flexible Manufacturing Networks and the Washington Wood Products Industry

Paul Sommers and Timothy Leinbach. 1989

### Executive Summary

The wood products industry in Washington has exhibited little growth in real value of output in the last decade, and increases in employment are small as new technologies boost worker productivity. Meanwhile, firms face competitive challenges from foreign producers as well as competitors in other regions of the United States. Wood supplies are not assured either. The U.S. Forest Service is implementing new land management policies and responding to environmental concerns such as providing habitat for the spotted owl. Private land management is also an issue, since some private land owners may not be interested in managing lands to produce a stable long-term timber supply.

To remain healthy in the long run, these firms need new markets and improved technologies, a capable labor force, reliable wood supplies, and an adequate supply of capital. None of these crucial factors is assured in our rapidly growing and swiftly changing economy.

A demonstrated, successful strategy for maintaining the vitality of small businesses is to link small firms together to accomplish commonly needed tasks such as marketing, research and development, employee training, or production of goods and services. This organization of firms is formed along sectoral linkages either horizontally (several firms producing similar products) or vertically (firms linked as a set of buyers and suppliers). This concept, known as Flexible Manufacturing Networks (FMNs), originally arose in Europe. Many countries now devote considerable resources to the promotion and servicing of FMNs through sector-specific institutes and programs, much of it privately financed by the firms receiving the services. Denmark and Italy have advanced industrial economies with a size distribution more heavily favoring small and mid-size firms than in the U.S. They provide useful models for examining the Washington wood products industry and determining strategies for strengthening the subsectors in the industry.

Primary and secondary research has been performed on the wood products industry in Washington to identify key issues and problems faced by the small and mid-size firms and to assess the feasibility of implementing FMNs and other similar strategies. The manufacturing sectors (SIC 24 and 25) of the industry exhibit strikingly similar characteristics to that of many of the manufacturing sectors in Europe in which FMNs have been successfully implemented. Wood products manufacturing is more heavily dominated by smaller firms that show sub sectoral concentrations in many of the state's rural counties, use labor-intensive processes, and produce goods that have great potential as specialized and high quality products and niche market penetration in the international economy.

A randomly selected sample of firms in Grays Harbor, Lewis, and Spokane' counties was surveyed to gain a deeper understanding of their attitudes, operations, and needs. This helped to assess the industry potential for network development. Among the aspects examined were the size and distribution of firms, growth trends, the state of technology, the quality and availability of the labor force, major markets and products, significant competitive challenges, and evidence of prior collaborative behavior among firms in the industry.

For analytical clarity, the industry is bifurcated into its primary and secondary processing sectors. The former is composed of firms performing milling of raw logs or manufacturing boards, panels and roofing products that are used as inputs in further processing or construction. Secondary processors are those creating finished products such as doors, windows, trusses, modular homes, and furniture from milled timber. Both groups exhibit concerns about many of the same issues, such as timber supply and government

regulations and support, and are in need of unskilled, trainable labor. However, the extent and focus of their concerns, and individual firm characteristics, are distinctly different between the two groups.

Relative to secondary, primary processors tend to consist of larger firms with a more national and international market focus, are more dependent on local timber, exhibit greater rural concentration, and possess more diversity in their level of technological sophistication (running along subsectoral and firm size divisions). They are greatly concerned about access to timber supply, and generally displeased with the lack of federal effort to help U.S. firms compete against the Canadian and Asian wood processing industries. While secondary processors have been faring well in local and regional markets, only a select few subsectors within the secondary processing sector show a larger market focus. Often the small size and lack of marketing skills and capital of these firms are limiting factors in their ability to grow and expand. Forms of collaboration have remained rather informal in both sectors, with smaller firms exhibiting a greater tendency to work cooperatively. Yet, in general, firms tend to exhibit a fear of the risk that accompanies joint ventures. Finally, there is a definite wariness toward governmental (federal or state) assistance and intervention in the affairs of small business.

Washington has developed a solid foundation of public sector business assistance programs and service providers, upon which programs for Flexible Manufacturing Networks can be built. Out of a well-managed public effort stimulating private sector firms and associations to become involved, flexible network structures can be developed in the wood products industry. Obstacles to be overcome include firms' fiercely independent attitudes, concerns about collaboration, and their lack of time or money to put towards network development. In addition, a much better outreach effort must be made to smaller firms, for which networks are most suited. Many of these firms have either been unaware of or ignored by existing assistance operations.

The public service providers must also have a greater knowledge of the wood products industry, its technology and specific issues of its firms, and develop programs that require less perceived risk to the firms involved. By concentrating state assistance efforts and consolidating the retailing of assistance programs into a small number of knowledgeable providers working in the field, a public sector structure is created that will better work to involve firms into the economic development programs and can introduce network service and facilities centers into the private sector with greater ease than presently exists.

Each type of firm, primary and secondary, can benefit from forms of government assistance, but the programs must be tailored to each sector specifically. Initial strategies to assist firms may not involve formal network operations, but in time, and with increased public sector experience and private sector familiarity and acceptance, they can be developed into privately supported Flexible Manufacturing Networks. Specific programs which can be developed for secondary processors include marketing research designed to assist the smaller firms who possess little knowledge about potential markets for their products, and the development of programs to more fully promote and utilize Washington wood and wood products as specialty, high quality products. In addition, primary processing firms need assistance in obtaining the full extent of available technologies in the industry, which can help reduce reliance upon specific log species and sizes. By creating state economic development strategies which address specific issues in each sector and reach the firms in greatest need with sectorally specific field agents and service centers, the state could create a foundation of public and private strategies that can encourage the process of Flexible Manufacturing Network building.

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