

2012

Volume 10, Issue 1



## Oregon's Forest Sector Innovation System: An Investigation Towards Advanced Performance

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**Description:** An in-depth analysis of Oregon's forest sector innovation system, and how to improve upon this system

**Methods:** Interviews and mail survey

**Data Source:** Wood products manufacturers in the state of Oregon

### Key Findings:

- There is little awareness and use of the many innovation resources available to Oregon's forest products manufacturers
- Culture in Oregon's forest products industry is largely change resistant
- Firm/interfirm cooperation within Oregon's wood products manufacturing sector is surprisingly low

### Introduction

Innovation is generally defined as the method of creating a product, process, supply, market, or business system that is perceived as new to an individual (Rogers 1995). It is commonly used as a means of gaining a competitive advantage, and is therefore recognized as a critical component in the long-term success of an organization. However, being innovative is seldom an easy task. Successful development and implementation of any innovation can heavily rely on the functionality of the current innovation system in a given industry (Edquist, 2001).

**Innovation System:** An innovation system is composed of policies, companies, individuals, and other major actors that may have an effect on the development and diffusion of an innovation into the marketplace (Edquist, 1997). In other words, it is a collective system of distinct actors and institutions whose innovative success is determined through their combined interactions (Kubeczko et al., 2006).

At the most basic level, the purpose of an innovation system is to create, implement and diffuse innovations into the marketplace (Edquist 2005). These functions of an innovation system can be thought of as a progression. For example, an organization wouldn't implement an innovation until it has

been created, and an organization wouldn't diffuse an innovation into the marketplace until it has first been created and implemented. So, these three functions can be labeled as: first – create, second – implement, and third – diffuse. Further, outside forces such as policy can be just as influential as internal forces on the performance of this system.

**Forest Sector Innovation System:** Innovation is a critical component to maintaining industry vitality and Oregon's forest sector innovation system is not performing optimally. In order to increase innovativeness in Oregon's forest sector we need to understand why. Hence, the objectives of this study cover a wide range of innovation system participants including public and private organizations, government, and other major actors. Further, understanding the roles and responsibilities of these major actors can aid in articulating prime opportunities and barriers to increasing innovation, and help to develop some recommendations for overcoming the barriers.

**Study Objectives:** 1) Identify major local, state, and federal policies and incentives related to innovation available to Oregon's forest sector manufacturers, 2) Identify prime opportunities and barriers to increasing innovation in the manufacturing sector, and develop recommendations for overcoming these barriers.

### Methods

Data for this study was collected in two phases. The main goal of phase one was to educate the researcher about current industry practices before moving on to phase two and creating a mail survey. In order to do this, phase one consisted of secondary research as well as personal and phone interviews with 13 select individuals. Phase two of data collection, a mail survey of Oregon wood products manufacturers, was conducted to directly address the study objectives. Therefore, the bulk of the questionnaire focused on use and awareness of available resources and opportunities and barriers to being innovative. In total 543 questionnaires were mailed, from that 131 responses were received, leading to a response rate of 24%.

**Results**

Oregon wood products manufacturers' awareness and use of the available resources is significantly low. Figure 1 shows only those resources that have at least 25% awareness or more.

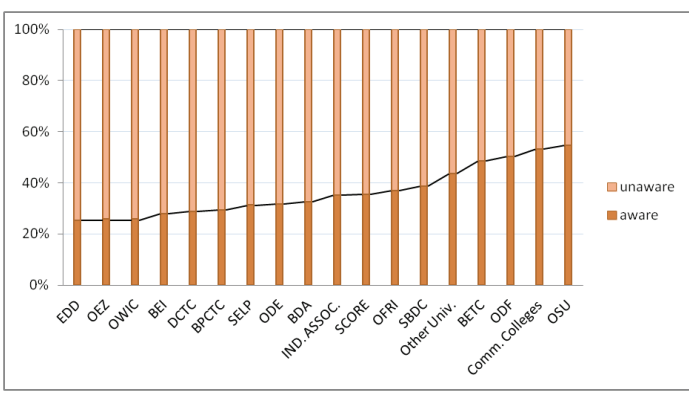
Survey respondents reported that the largest organizational constraint to being innovative is a lack of money due to the poor economy.

Survey respondents and interviewees reported that the largest industry constraint to being innovative is the change resistant industry culture.

Lastly, when asked about participating in innovative collaborations, 50% of respondents simply said they did not have any collaboration, and equally surprising only 3% said they collaborated with their customers (Figure 2).

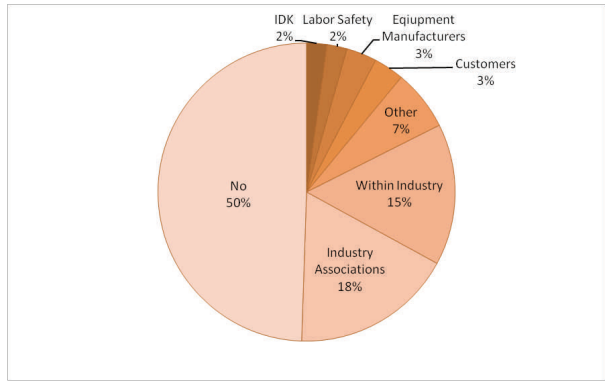
The first recommendation applies to changes we can make in what we do at the Oregon Wood Innovation Center (OWIC) at OSU. Specifically, to increase the industry's awareness of available resources, we plan to provide information on these resources via our newsletter and our website. The second recommendation is to increase the opportunities for student internships.

As suggested by interviewees, increasing the ratio of younger, educated employees to older traditional employees is likely the most direct way to make a lasting shift in the culture of the industry. These two recommendations combined, if successful, could also likely help to increase the number of innovative collaborations happening within the industry. Lastly, providing the results of this research to policy makers and the Oregon Forest Cluster Working Group to inform them about the current state of innovation in Oregon's forest sector is a prime opportunity. Current information has the potential to redirect focus, influence recommended actions and help to further develop relevant policy.



**Figure 1: Oregon Wood Products Manufacturers' Awareness of Available Resources**

(EDD = Economic Development Districts, OEZ = Oregon Enterprise Zones, OWIC = Oregon Wood Innovation Center, BEI= Biomass-to-Energy Installation, DCTC = Dependant Care Tax Credit, BPCTC = Biomass Producer or Collector Tax Credit, SELP = State Energy Loan Program, ODE = Oregon Department of Energy, BDA = Business Development Assistance, IND. ASSOC. = Industry Associations, SCORE = Service Corps of Retired Executives, OFRI = Oregon Forest Resources Institute, SBDC = Small Business Development Centers, Other Univ. = Other Universities, BETC = Biomass Energy tax Credit, ODF = Oregon Department of Forestry, Comm. Colleges = Community Colleges, OSU = Oregon State University)



**Figure 2: Oregon's Forest Sector Innovative Collaborations**

**Conclusions and Recommendations**

The forest sector innovation system is encountering road blocks in the early phases of development, and for the most part is being stalled before innovative creation can begin. The change resistant culture, poor communication and a lack of financial resources are the road blocks. Therefore, the following recommendations have been developed to address these hindrances.

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