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Creating value with innovation: From centre of expertise to the forest products industry

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Abstract

The innovation of products and processes is seen as a promising answer to many of the challenges faced by the forest products industry. Centres of expertise are used by governments and industry to create and transfer the innovative knowledge at the base of these innovations. The specific missions and objectives of forestry centres of expertise vary according to the sources of their funding and their targeted audience. However, we believe that even given the diversity of centres, a common objective can be extrapolated: that is to create value using research and innovation. The great number and varied nature of centres of expertise in the forest products industry illustrate their importance for the diverse actors of the industry. Their role, and in particular their role in the Canadian industry, is analyzed in this paper from the perspectives of innovation and value. An innovation value matrix is presented to describe the innovation process from the perspective of the value that is created and perceived by the various actors of the innovation process. Based on exploratory interviews with two centres of expertise dedicated to the industry, this model includes findings from other authors and proposes a new perceptive related to the value perceived and effected by the actors involved in an innovation process. Through the use of the innovation value matrix the authors examine the different actors' understanding of innovation and value. The authors believe that, by improving the understanding of the concept of value creation from innovative knowledge, centres of expertise can develop a better understanding of their own processes and in turn develop better tools to transfer knowledge so that it is used to create effective value for the forest products industry.

Keywords: Centre of expertise; Forest products industry; Innovation; Knowledge management; Innovation value matrix

1. Introduction

Currently, the global forest products industry finds itself faced with many challenges. These challenges are multifaceted and complex, and the need for the application of innovative ideas and solutions is obvious.

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However, the process from innovative knowledge to implanted or consumed innovation is not clear. There are many sources of innovative knowledge, from internal R&D departments to universities and centres of expertise. In particular, centres of expertise, financed by public and private sectors, have a large role to play in the creation of innovative knowledge and the process of turning that knowledge into innovation.

The first part of this paper presents the challenges currently faced by the industry in general and the forest products industry in Canada and the province of Quebec in particular. Following this, the roles of centres of expertise are discussed. Next, an overview of the literature in the fields of knowledge management and innovation is given. The fourth section of the paper presents two generic models of the innovation value chain and the results of interviews with two centres of expertise working in the forest products industry. The fifth section presents the innovation value matrix that has been developed by the authors. Following this is a discussion of possible supporting factors. Finally, the conclusion will present the future research needs of the authors.

2. Industrial context

The forest products industry is an active player in the knowledge revolution that has changes the structure of many economies (Simard, 2000). Moreover, sustainable growth and development, both in ecological (Innes, 2002) and economical terms, have become priorities. Economic, environmental and social considerations have become the basis of future plans of industry players (De la Roche and Dangerfield, 2002; McDonald and Lane, 2004). Juslin and Hansen (2002) have identified four major trends facing the industry:

- restructuring, consolidation and search for profitability;
- cost reduction through production optimisation and technological innovation;
- customer orientation, centred on differentiation and adding value;
- confronting environmental challenges.

World wide overcapacity and low prices led to the consolidation and restructuring of many companies. Larger companies have emerged that are integrated along the supply chain. Network thinking and collaborative methods are replacing information and operations silos. This has encouraged research in the fields of supply chain management, industrial engineering, operations planning and new communication and information technologies to support e-business endeavours (Epstein et al., 1999; Frayret et al., 2005).

Much research has been done and resources invested to optimise production and implant technological innovations (Haarla, 2003). These hardware oriented technologies have allowed companies to reduce costs and increase productivity (Juslin and Hansen, 2002). However, progress still needs to be made to integrate these technological innovations that optimise production with software oriented technologies and the overall coordination of value added networks.

Following other industries, the forest products industry is increasingly focused on the end customer. To improve customer service levels the industry needs to innovate to better manage its value creation network. Knowledge management practices also need to be developed (Simard, 2000; Innes, 2002; Van Horne et al., 2005) in order to pull information from customers so as to develop new products and services that meet, or even create, the needs and desires of an increasingly demanding customer base.

Finally, the environment has become a key issue for all stakeholders of the forest products industry. In fact, environmental management (including harvesting and forest operations), forest certification, and environmental labelling (Juslin and Hansen, 2002) are inescapable issues for the industry.

There is numerous centres of expertise working on these problems around the world. The following section first proposes a definition of a centre of expertise. Then, it discusses the roles that these centres play in the creation and implementation of innovation knowledge.

3. Centres of expertise and their roles

A centre of expertise is a centre, whether virtual or physical, that regroups experts from multiple disciplines to study complex and multidimensional problems in a team environment, in order to create and transfer new knowledge and insights to concerned