Innovativeness in the global forest products industry: exploring new insights

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Abstract: Innovativeness is a concept that has seen extensive study, yet there remain significant gaps in our understanding of the phenomenon. This is especially true when considering views of practitioners as well as specific industry sectors, such as the forest products industry. The qualitative work described here explores the concept of innovativeness from the perspective of forest industry managers. Managers consistently described five aspects of what it means to be an innovative company: (i) new, (ii) creating the “right” culture, (iii) managing the market–customer link, (iv) being a leader, and (v) a focus on the future. Similar to past research, managers identified new or improved products, processes, and business systems as areas within which a firm can be innovative. Results also outline challenges that firms face as they attempt to become innovative, how they would go about measuring innovativeness, and how they build innovative capacity. Based on these findings, we suggest that firms have significant opportunities to increase innovativeness and, thereby, enhance competitiveness.

Résumé : L’innovativité est un concept qui a fait l’objet d’études approfondies mais il y a encore d’importantes lacunes dans notre compréhension du phénomène. Cela est particulièrement vrai lorsqu’on considère l’opinion des praticiens ainsi que certains secteurs industriels tels que l’industrie des produits forestiers. Le travail qualitatif décrit ici explore le concept d’innovativité du point de vue des gestionnaires de l’industrie forestière. Les gestionnaires décrivent invariablement cinq éléments qui caractérisent une compagnie novatrice : nouveauté, créer la culture appropriée, gérer la relation entre le marché et les clients, être un chef de file et être tourné vers le futur. Comme dans les études antérieures, les gestionnaires ont identifié les produits améliorés ou nouveaux, les processus et les systèmes d’affaires comme des domaines où une entreprise peut innover. Les résultats esquisquent aussi les défis auxquels les entreprises font face lorsqu’elles cherchent à innover, la façon dont elles pourraient mesurer l’innovativité et comment elles bâtissent leur capacité d’innovation. Sur la base de ces résultats, nous croyons que les entreprises ont de réelles possibilités d’accroître leur innovativité et par conséquent d’améliorer leur compétitivité.

[Traduit par la Rédaction]

Introduction

One of the things I find attractive about the wood products business, it is slow moving; it is an old business and doesn’t take much to mark yourself as an innovator. [Forest Industry Manager, North America]

I look at our industry as being real dinosaurs in the area of new product development and especially in the area of good marketing. [Forest Industry Manager, North America]

Our industry is, in my opinion, way behind the curve on innovation and new technology. [Forest Industry Manager, North America]

Everyone is working longer hours; everybody’s working [so hard] to do their jobs now. I mean 20 years ago, it just wasn’t so hard. There was more fat in the system, and you didn’t budget so carefully because there was lots of fat in the system, and it didn’t really matter. You could cruise through, and if you went home early, it didn’t really matter. But [sic] now there is so much to do, and there are shareholders to report to and profit targets to meet and safety targets; we didn’t even have safety 20 years ago. Now, it’s a full system. It’s so many things now that put people just so flat out, they’re not actually thinking of things like innovation. You know, you can call it by different names, but essentially that’s what it is, and I think that’s probably one of the biggest problems. I’ve had this discussion at [the] Board level when I said to them we’re reacting, we’re not getting ahead of the pack. . . . [Forest Industry Manager, Oceania]

I think when I graduated this line of business was not as fast as the sawmilling industry? I mean there are much more interesting areas,” but right now I could say that we have a new step, a huge step ahead of us and already its somewhat happening, so we are able to first of all have the new future in front of us. . . . [Forest Industry Manager, Europe]

I think in our company we have recently started to realize the R&D function is the only function that can take us
there where we want to go. [Forest Industry Manager, Europe]

These views from forest industry managers provide insight into the past, present, and future of innovation in the forest sector. If the industry is to remain a viable competitor with substitute materials and global rivals, innovation will be instrumental to future success. Growth has been identified as a primary focus for many forest industry companies (Korhonen and Niemelä 2004), but “real” growth depends on innovation rather than acquisition and agglomeration, and the ability to outgrow the competition is inexorably tied to outinnovating (Hamel and Getz 2004).

Innovation and innovativeness have seen decades of investigation within the academic community, but despite this extensive attention, insufficient work has been published documenting the concept from the practitioner perspective. Forest industry related research is a narrow but growing body (Hansen et al. 2006a). Välimäki et al. (2004) and Hovgaard and Hansen (2004) are examples of studies where forest industry manager views were integrated. Little documentation exists of forest industry efforts to proactively increase innovativeness and how companies measure innovativeness in an effort to judge success in implementation.

Extensive interviews were completed with forest industry managers of medium- to large-sized forest industry companies in Europe, North America, and Oceania to explore the concept of innovativeness in the global forest products industry. This work builds on that of Hovgaard and Hansen (2004) who investigated similar issues with smaller companies. The forest industry has consolidated, right-sized, downsized, and rationalized, yet our discussions with managers reveal recognition that investment in innovation is a prerequisite for future success. Little formal research has been conducted to begin assessing how forest industry managers view the concept of innovativeness. To begin developing a better understanding of these views, we sought answers to the following general questions:

1. How do industry managers view the concept of innovativeness?
2. How do managers attempt to develop innovativeness in their company?
3. How would managers go about measuring innovativeness?

A better understanding of state-of-the-art thinking by industry managers can be instructive for industry managers and researchers. Understanding how the industry “thinks” of innovativeness may provide industry managers with insight into areas for improvement, allowing them to better manage innovation in their organizations and compare their efforts with peers. Although our data come from three global regions and both public and private companies, we do not attempt to make regional or company-type comparisons. For researchers, an enhanced understanding of innovativeness as perceived by managers should assist devising improved measurement methods and informing future research efforts.

**Theoretical background**

**Innovativeness**

Innovation and innovativeness are of significant interest to researchers and practitioners alike because of a generally held belief that innovative organizations are better performers (Hult et al. 2004), although some claim research findings to be inconclusive (Subramanian 1996; Wolfe 1994). Recent years have seen a dramatic increase in the research conducted on innovation in the forest sector. Hansen et al. (2006a) provide a synthesis of the literature concluding that important areas of research are yet to be sufficiently explored and insights are needed, especially with respect to managerial implications.

According to the OECD (2005) Oslo manual, “An innovation is the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organizational method in business practices, workplace organisation or external relations.” This multidimensional perspective of innovation is similar to that advocated by various researchers (Han et al. 1998; Boer and During 2001; Hovgaard and Hansen 2004). Although the multidimensional nature of innovation is generally accepted in the literature, a major problem in past research is a lack of precision and consistency in definition and operationalization (Välimäki et al. 2004; Garcia and Calantone 2002). Also, innovation and innovativeness have not been used consistently: some authors consider them to be distinct, and others use them interchangeably (Damanpour 1991). Separating the concepts is important. Whereas an innovation can be a new process, product, or business system, innovativeness is an organizational trait or characteristic. Thus, innovativeness is what enables an organization to create or adopt innovations.

Because there exists different forms of innovativeness, our interest in this study is the overall concept of organizational rather than the specific topic of product innovativeness. By far, the most commonly accepted organizational innovation concept is that innovative organizations adopt innovations. In some studies, the differentiation between innovative and noninnovative is based simply on adoption or nonadoption, whereas others incorporate time of adoption, assuming earlier adopters are more innovative (Subramanian 1996). Innovation-related work focused on the forest industry has largely followed the adoption–diffusion paradigm (e.g., Cohen and Sinclair 1990; Fell et al. 2002; Lee et al. 1999; Shook 1997; West and Sinclair 1992). Damanpour (1996) suggests that adoption includes the concept of creation, but much of the past research only considers adoption. Thus, there have been calls for improved measurement of innovativeness that includes creation as part of the construct (Hansen et al. 2006a; Deshpande and Farley 2004). More recent work has emphasized both aspects of innovativeness, creation, and use of innovations (Tuominen et al. 2004; Välimäki et al. 2004). A propensity to create and adopt innovations is largely based in a company’s culture. Välimäki et al. (2004) describe it well by stating, “it [innovativeness] is a strategic, cultural, social and managerial issue...” Given its basis in corporate culture, an understanding of innovativeness from the perspective of industry managers is critical to informing future research.

**Building innovative capacity**

Korhonen (2006), in her work on corporate growth in the forest industry, separates innovative capacity into two
types — exploitation and exploration. Exploration, or the creation of incremental innovations, is the most easily accomplished innovation type for large, established organizations. Exploration, or the creation of radical innovations, is significantly more challenging. She suggests the two types of innovative capacity must be combined and carefully managed, requiring an environment or culture that supports personnel creativity while assuring control of execution. The act of innovation management advocated in her work suggests that firms can proactively build innovative capacity. She suggests that forming teams with diverse backgrounds, encouraging trialling and toleration of mistakes, and providing for organizational slack are all important ingredients to improved innovativeness. However, maintaining both types of innovative capacity is no small challenge since they are recognized as having opposite organizational requirements (Strebel 1987).

Extensive research has been conducted in an effort to better understand the determinants of organizational innovativeness. Using a meta-analytic approach, Damanpour (1991) found that specialization, functional differentiation, professionalism, managerial attitude toward change, technical knowledge resources, administrative intensity, slack resources, external communication, and internal communication all have significant, positive impacts on firm innovativeness. Similarly, centralization was found to have a significant negative impact. As an example, slack financial resources enable firms to purchase innovations, absorb failed efforts, and explore new ideas (Damanpour 1991). Slack resources can also come in the form of personnel time such as the often cited case of the 3M company, where employees are expected to spend some of their time in nonspecific creative endeavours.

The idea that it is possible to manage for innovation and that innovativeness can be proactively developed in an organization are both generally accepted in the innovation literature. Although there are some exceptions to this view (Fonseca 2002), most agree that innovativeness can be nurtured within an organization. The literature provides little insight regarding forest industry firm actions in this area.

Measuring innovativeness

Extensive study of innovativeness has resulted in multiple methods for measuring this construct. Five methods have been commonly used: (i) current firm technology, (ii) manager self-evaluation, (iii) intellectual property, (iv) number of new products, and (v) research and development (R&D) funding. Each of these techniques has strengths and weaknesses, but most problematic is that the technique employed may affect study results. In other words, they do not each measure the same concept, and use of different measurement techniques likely accounts for many of the inconsistencies found in the relationship between innovativeness and firm performance. Current technology has been the most commonly used measure for assessing innovativeness in the forest products industry (Cohen and Sinclair 1990; Lee et al. 1999; Shook and Ganus 2004), but self-evaluation (Crespell et al. 2006) and the number of new products (Crespell et al. 2006; Valimäki et al. 2004) have also been used.

In the general business literature, measures related to new product development (NPD) are the most prolific means of assessing innovativeness. This measurement area has developed to the point of implementing cross-industry benchmarking studies documenting the differences among high, average, and low performers (Cooper et al. 2004). The most extensively used metrics by firms in one major study were percentage of revenue from new products and percentage of growth in sales from new products (Cooper et al. 2004). The research also found a number of climate or culture issues that separate companies based on product innovativeness. For example, of the best performers in NPD, nearly two-thirds possessed “a supportive climate for entrepreneurship and product innovation.” Less than 10% of worst performers were strong in this area. Elements of climate and culture were the strongest discriminators between best and worst performers (Cooper et al. 2004).

With the exception of the NPD field, the literature is predominately theoretical in nature and makes few attempts to document and provide insight regarding day-to-day industry practices or the mindset or thinking of industry managers. Little is known with respect to how the forest industry measures its success in being innovative. As the saying goes, you can only manage what you can measure; thus, it is important to understand how companies assess their own innovativeness efforts.

Data and analysis

We employed a qualitative methodology for this work because the main questions under investigation were “how” (Yin 1994). Although often referred to as a “case study” approach, we emphasize that, in this situation, the “case” is the phenomenon “perspectives on innovativeness” rather than the sampled companies. Thus, we use case study to refer to a framework for collecting and documenting evidence (Remenyi et al. 2002). The research was not designed for generalizability, so readers should carefully consider this as they explore the results and discussion in the following.

Sample

We endeavored to follow a theoretical sampling approach and to interview multiple individuals within a diverse set of companies. Accordingly, our convenience sample of companies represent both public and private companies in three geographic regions of the world (Table 1). Some companies were integrated paper and wood products manufacturers with global operations. However, nearly all managers represented the wood products operations within those companies.
The sample included primary as well as secondary manufacturers. Total annual sales represented by companies in the sample was approximately US$60 billion.

Between one and six managers were interviewed from each company. In most cases, the interviews took place with one manager at a time. However, several interviews took place with a group of company managers. In total, we interviewed 35 managers in 16 companies (Table 1).

**Interviews**

All but two interviews were audio-recorded and later transcribed. For those interviews where recording was not possible, researchers wrote notes throughout the interview. Over 160,000 words were transcribed from all interviews, amounting to over 290 pages of single-spaced text (11-point Arial font). Recording interviews allowed the researcher to more accurately retain the interview data and be more engaged in the conversation (Yin 1994), and also provided extensive textual data that was used in analysis. Interviews ranged from approximately 30 to 120 min in duration, depending upon the company and the number of people interviewed.

To increase reliability, a structured interview protocol was created and followed. Because we were specifically interested in organizational innovativeness, our questions only referred to innovativeness, rather than innovation. Still, considerable room remained for follow-up and exploration of manager insights. Questions in the interview consisted of the following:

1. First, I want to get an idea of your role in the company, how long you have been here, and how you fit into the organizational structure.
2. What does it mean to be an innovative company?
3. If we thought of a scale ranging from highly innovative to not at all innovative, where would you place your company, and why?
4. How would you go about measuring the innovativeness of your company?
5. What do you proactively do to increase the innovativeness of your company?

**Analysis**

Analyzing qualitative data is a significant challenge (Yin 1994), especially because specialists in the field suggest there is a lack of explicit and generally accepted qualitative analysis methods (Miles and Huberman 1994). However, in recent years, there have been significant developments in qualitative methods even to the point where they are commonly applied in forest business research settings (Bull and Ferguson 2006; Hovgaard and Hansen 2004; Korhonen and Niemelä 2004). We followed an analysis approach similar to that described by Rubin and Rubin (1995) consisting of four primary steps.

**Step 1**

In keeping with the spirit of qualitative research, data collection and analysis was partially concurrent as we carefully considered new information from each additional interview. Key innovativeness aspects were identified by considering patterns in the way innovativeness and related concepts were characterized by interviewed managers. When possible, we debriefed after each interview and, at times, created additional notes based on these conversations. Creation of the study plan and interview protocol led us to expect certain categories or themes to emerge from the data. For example, it was quite obvious that one primary theme would be the meaning of innovativeness. Before step 2 of the analysis was conducted, several transcripts were read very carefully to identify additional themes that appeared to be present in the data. This resulted in identification of seven main themes to be used in further coding (Table 2).

**Step 2**

Using the qualitative software analysis tool NVivo, the transcripts from each interview were carefully read and coded based on the previously identified themes. During this process, two additional themes were added (although these and one other were eventually dropped because of a lack of consistent and sufficient discussion by interviewees). On completion of this coding process, a summary of all text

<table>
<thead>
<tr>
<th>Primary themes</th>
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<td>1. New</td>
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<td>4. Success of commercialization</td>
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<tr>
<td>Building innovative capacity</td>
<td>No subthemes identified</td>
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<tr>
<td>Company culture or climate</td>
<td>Integrated into the first two themes</td>
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<tr>
<td>Business restructuring</td>
<td>No subthemes identified</td>
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<tr>
<td>Continuum</td>
<td>Theme dropped</td>
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**Note:** Primary themes were identified in step 1 and utilized in step 2. Subthemes were refined from the primary themes resulting from step 2 and were used in step 3.
Step 3
The last step in analysis was a complete recoding of each interview transcript using each of the newly identified subthemes. This was done to ensure complete coverage of the transcripts via an additional consideration of the complete text. Summaries resulting from step 3 provide the quotations that are used below in explaining the findings from this effort.

Step 4
Finally, a draft of this manuscript was sent to each of the managers originally interviewed that were still with their company. In total, 32 managers received the manuscript, and six chose to provide feedback for improvement, providing a reality check for our results. Four of the six managers simply stated that the manuscript was accurate from their perspective, one asked for addition of more insights regarding how to be innovative, and one had a particularly strong opinion suggesting that we had, “let the industry off much too easily.” This individual provided considerable feedback regarding where they felt the industry must improve. Although not incorporated here, this feedback is available from the authors.

Results
When discussing types of possible innovation, managers referred to categories very similar to those found by Hovgaard and Hansen (2004). Several managers focused specifically on materials, especially the combination of new materials with wood products. We consider this to fit nicely with categories very similar to those found by Hovgaard and Hansen (2004). Several managers focused specifically on materials, especially the combination of new materials with wood products. We consider this to fit nicely with categories very similar to those found by Hovgaard and Hansen (2004).

Attributes of innovative companies
Common subthemes to emerge from the interviews regarding what it means to be an innovative company can be summarized by the following: (i) new, (ii) creating the “right” culture, (iii) managing the market–customer link, (iv) being a leader, and (v) a focus on the future.

New
Study participants commonly spoke of such things as new products, new services, and new technology. In their minds, being innovative is synonymous with either creating or adopting something new.

Creating the right culture
Managers spoke extensively about company culture throughout the interviews. Specifically, when considering the issue of an innovative company, managers outlined the sort of atmosphere conducive to innovativeness.

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I guess for us, I think to be an innovative company is actually part of our lifestyle at [company name]. [North America]

so it’s going to be a conscious decision within the management of an organization to want to be innovative and then encourage it and then do something with it once they’ve received it. [Oceania]

you need to have the environment of innovation, the willingness to challenge what you are doing, and accept and embrace change while maintaining standards. [North America]

We have good examples of ideas can come from anywhere, and also through these examples, we can make this feeling really strong throughout the company. [Europe]

I would like to think so that we are slightly better than the competition because we have the right mindset, that we may have understood some of the connections, some of the links and the importance of this activity slightly better or earlier than the competition. We might have been clever enough to do something to encourage people and encourage this activity. [Europe]

in general, being too large is also a disadvantage. We see lots of cases where there is disjointed effort and understanding about what to do. We see issues where corporate culture really inhibits creativity rather than fosters it. [North America]
Managing the market–customer link

Despite being from a traditionally production-oriented industry, managers were highly focused on close links to the marketplace and customers. Being closely tied to customers was seen as characteristic of an innovative company. Some managers went quite far in their critique of the industry as a whole and its overreliance on tradition and conservativism at the expense of innovation.

to be truly innovative, you need to have a very, very good link to your customer base and you need to produce products based on real requirements. [North America]

so we are constantly in the market looking at what the market’s doing ..., what the competitors are up to. [Oceania]

In our case, our customers are distributors, but we need to bypass those folks and go right to the builders and the architects and the homeowners, and find out what trends they’re looking for and what their issues are and what their problems are. [North America]

The basis of developing innovativeness in the sawmill industry is that you don’t only maximize yield from the log. You have to clarify what the customer needs and produce those products that have demand. [Europe]

an innovative company is going to ask questions that bring the responses out of people and, perhaps, lead to products or processes or some kind of an innovation that maybe even the people you’re talking to really could not, you know, put into words necessarily. [North America]

the innovative company should have a careful look at the whole supply chain, and in our case, it means it has to extend to the raw material side and also to customer interface. [Europe]

Being a leader

Managers used a number of descriptors when describing innovative companies as leaders. They expressed a need to stay ahead of competitors, lead the pack, and consider ways to get ahead of the game. Innovative companies proactively and aggressively work to stay ahead of the competition.

If you’re truly innovative, you’re going to be kind of out there leading, and you’re not going to be caught in a situation where somebody else is doing something and you need to catch up. [North America]

One [company] that is keeping ahead of the pack. [Oceania]

if you are a real innovator, you’re ahead of the curve. You’re reading the tea leaves. You see where your markets are going, and what your customers want, and where the industry is going. [North America]

we like to be on the leading edge but not on the bleeding edge, so we are not out there forging new ground and with a big research and development team and doing things that are completely radical, but we try and look at things that fit our core competencies. [North America]

A focus on the future

According to the interviewed managers, innovative companies concern themselves with the future to position themselves to adapt to a changing operating environment.

An innovative company makes an effort to anticipate future demands, makes an effort to understand the company and how they evolve. [North America]

I need to predict, predict what’s going to happen in the future, doesn’t matter whether it’s in marketing or production or anything, and implement something before it is necessary. I’d say that is my definition of being innovative, it’s getting ahead of the pack and really looking out. [Oceania]

the company that is paranoid (and there is a lot to be said for that) and then you have to anticipate that everybody wants your business and they are probably going to get it if you don’t do something. [North America]

Challenges to being innovative

Culture within the industry, as well as within individual companies, was often described as a hurdle to innovation. Three main themes were identified with respect to challenges to being innovative and each contained aspects of culture. The themes were (i) tradition or production orientation, (ii) culture – resistance to change, and (iii) difficulty in moving ideas from market to innovation. Themes one and two were especially difficult to fully separate as the concepts contained in each overlapped considerably.

Tradition or orientation

The traditional focus in the industry and consequently within companies was identified by managers as a key constraint in the quest for innovativeness. In a production- and commodity-oriented company, much of the decision-making is held at the manufacturing level. To move away from this way of doing business requires significant change in company culture. Many of the managers spoke with a highly market-oriented mentality referring to their company’s efforts to shed the production orientation to reach an enhanced focus on customers and especially on developing solutions for customers. At the same time, managers also expressed frustration in a seeming inability of other functions or divisions of their company to shed the production mentality.

In the plywood industry, we have stopped thinking of yield in the sales and marketing or in the management already 10 years ago or 15 years ago and that has meant we have moved closer to other industries. [Europe]

I think their way of thinking is totally wrong; they are trying to maximize the yield. So they are just cutting the dimensions that are the good dimensions if you think of the yield, but they are not maximizing the yield in money. [Europe]

Sawmilling industry has always been able to measure one thing, that’s cubic metres and then you have it divided by hours or days or markets or something like that or personnel or whatever, it’s always cubic metres. Nowadays, a big breakthrough coming into the picture also in our company, we started thinking Euros, but still we need the help of the cubic metre measure next to the Euro measure so that the old and new people can see, what does it mean? [sic] [Europe]
You can be an innovator on the sawmilling side, but then you are building machines to make your own process better rather than building solutions for your customers. And [sic] that has been the scope in the last 120 years in the business: how to make more and faster and more cost efficient. [Europe]

However, to be clear, not all managers were focused on a market orientation, rather seeing the path towards improved profitability lying squarely in the area of process efficiency.

To be able to succeed in the paper industry, it requires cost effectiveness. Corporate renewal means innovations in small steps where most often the goal is to increase cost effectiveness. [Europe]

The nature of the business is so that, if we can utilize, for example, raw material more efficient [sic] than we do today, the income is much better and faster than by trying to develop new products and find new markets for new products. [Europe]

Culture – resistance to change

Managers spoke of culture with respect to the overall manufacturing sector, individual companies, and even the marketplace. In each context, they identified aspects of those cultures that resist change and hamper innovativeness. For example, one North American manager described his industry in the following manner: “...this culture is incredibly conservative in this industry, so very resistant to change.” This manager had considerable work experience outside of the forest industry, and when asked whether there were meaningful differences between the forest industry and the industry that s/he had worked in previously, the response was

I think it’s that much difference between industries. It just doesn’t fit with this one at all. It just, [sic] they are not geared that way, and they just don’t have the skill sets to be quite honest. They don’t have the infrastructures to do that, whereas huge corporations, like [company name], they [sic] had the people to do all that stuff and that had the time. But [sic] here, these companies run very lean, and everyone’s got a full-time job, so taking time out to be on teams and to dissect things that have happened in the past, you’re just not going to get any support to do that. Totally different industries. [North America]

In addition, some of this was said to be due to the inbred nature of management and a lack of training.

I think a lot of the problem also comes from the fact that they haven’t hired from outside; they keep promoting from within. [North America]

They are so [sic] busy guys because of very thin organizations that we have not much time for education, unfortunately. [Europe]

Ultimately, a critical component of culture is how employees see their role in innovativeness.

I think this whole innovation thing or being innovative or not is something that people consider a bit apart from their everyday work or everyday duties, and this is, of course, not the idea. [Europe]

Many forest industry companies are working to move their culture towards a market orientation (Cohen and Kozak 2001; Hansen and Justlin 2005), and this is no small task. Market orientation, as a cultural element of the company, is difficult to develop out of a traditional production orientation. Evidence of the pervasive and traditional production orientation comes from managers, as they discussed the power held by the manufacturing side of the company as well as the conservative nature of management within their companies. Especially acute was the challenge of making changes to become more market oriented, because it means significant changes for production practices in the mills.

It just seems to me that in [company name], as well as other companies, it’s like this manufacturing part of your company almost drives what you do. What they’re going to make. And [sic] there seems to be this real stubbornness back at the manufacturing facility that, in a way, stifles innovation. [North America]

if you shift from commodity to specialty, you’re basically taking control away from the plant. [North America]

we can do business with this and the margins are really good, but it doesn’t fit or we would have to invest also to be able to produce it and there is quite often the risk it will be killed at the production because normally if you come with a new idea or new products it disturbs your daily life and daily production planning. [Europe]

you come in here, and you start organizing teams, and it just scares the life out of these people. And [sic] they just shut down; they just refused to cooperate, because change scares the life out of them. So you have to slow down and go in baby steps that they can handle and get them comfortable with the process first. [North America]

we had to go to almost the personal insult level in order to get and push that project through, and still today, somebody is asking are we using too much time for this small-scale project. [Europe]

Resistance to change is not limited to internal company operations. The marketplace can also resist attempts to introduce new products or, otherwise, make changes. This can be a result of inadequate knowledge by key specifiers, such as architects, or conservatism on the part of customer groups, such as homebuilders. In addition, the bureaucracy of building codes and standards can hamper innovation and, in turn, the innovativeness of manufacturers.

If you want to change the habits of the customer base or the consumption to use something different, different solutions in certain products or product lines, that is a huge task. [Europe]

“People are slow to adopt in this industry. [A] lot of times it is a hand-me-down business: my daddy did it this way, my granddaddy did it that way, he built with 2×s, and I am going to build with 2×s. This is the way to go. [North America]

I don’t think building officials, per se, stop innovation. I would say they don’t encourage it. [North America]

Difficulty in moving ideas from market to innovation

Forest industry companies have traditionally sold products
via an extensive channel of distribution and paid little attention to markets beyond their immediate customers (Hansen and Juslin 2005). This gap between final product use and most forest products manufacturing operations creates a major disconnect in the flow of innovative ideas from final user back to the manufacturer. Managers expressed frustration regarding the difficulty of moving ideas from sales people into the company’s innovation process.

So we are divorced from a large section of the people who are actually using our timber, and the distributors are very protective of that, obviously. And that’s been one of their biggest problems is that we’re not very well engaged with a lot of the people who are actually ordering the timber at the end of the day. [Oceania]

we don’t have too much understanding of the real processes of our customers and their customers. [Europe]

I would say that the difficult part is to get from the salespeople the ideas or the needs channeled through the innovation process to a better solution. [Europe]

I don’t think our competitors do very well at all in that regard in this industry. There’s just example after example of products that just flopped, because they just didn’t introduce them right. They didn’t even understand what the products did! [North America]

we really do think of what our competitor is doing and how do we stack up against them, rather than, “well, what really would that homeowner like to have?” [North America]

Measures of innovativeness

Measuring innovativeness was not a topic in which most managers were well-versed, and few had concrete answers depicting examples of company practices. The strongest theme emerging from the interviews was some form of return on investment or profitability. Other ways that were mentioned by more than one manager were the percentage of sales represented by new products, levels of investment required for a given innovation, market share over time (inferring growth higher than the market average), success in commercialization of products, number of patents received, and time to market. Two companies had recently begun focusing more on patents. One was specifically using this as a strategy to become more recognized in the marketplace as being innovative. Only a few of the companies had a structured tracking mechanism to monitor their success in innovation.

Building innovative capacity

Larger companies tended to have an internal process for collecting innovation ideas from employees. One company was actively running an internal competition for gathering creative or innovative ideas. Only one company had a structured system for soliciting ideas directly from customers. Several companies were attempting to diversify their management by hiring outside the industry.

Managers from one smaller company spoke of reading groups where current business management topics are discussed; continuous improvement processes, such as lean thinking; and trade show and customer visits. For most of the companies interviewed, there were no significant efforts targeting increased innovativeness, as such. However, managers typically did not make a connection between the question that was asked regarding “increasing innovativeness” and many of the ongoing efficiency efforts that were taking place within their company.

Business restructuring

Many managers expounded on the changes made in their companies to adapt to changing market realities or to better facilitate innovativeness in their operations. Again, moving toward a higher level of market orientation was a common thread in the answers given by managers. Several companies had shifted responsibility for R&D to the marketing function in an effort to make product development more customer focused.

I would say [that] business model is one [area] where we probably are quite innovative. We are willing to shed our skin every 3–5 years and reorganize around changing realities. [North America]

This was a totally commodity-based company, so it needed a completely different strategy. It needed a new business model. It needed a totally new infrastructure. [North America]

so the organization is very important. The organization design is supporting the innovativeness in the company. [Europe]

One way of attempting to mould culture is through altering the organization and structure of the company.

One of our strategies has been that all new persons coming to the company are coming to the R&D department to get that sort of R&D mind, [sic] and then the next step is to go to market or production to learn real-life things as well. [Europe]

I think where [company name] runs into a problem on this is that I don’t think [company name] or most of the industries understand that new product development is a marketing function. [North America]

Our R&D facility also reports to marketing. [North America]

Discussion

Attributes of innovative companies

Given that the definition of innovation is based in the creation or adoption of something new, manager views of innovativeness being associated with “new” is consistent with the extant literature (AIC 2004; Rogers 2003; Damanpour 1991). It is important to emphasize the diversity of issues identified by managers. They did not focus exclusively on new or better processes but described pursuit of a broad range of new products, processes, and business systems that characterize an innovative company.

A wealth of literature explores aspects of culture with respect to innovativeness. Culture is the “norms, values, and beliefs that reinforce behaviors” within a firm” (Hult et al. 2004). Managers spoke mostly of the right sort of firm atmosphere that must exist to develop an innovative culture. As the literature suggests, development of such a culture is

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the responsibility of, and originates with, company leadership (Fonseca 2002). With respect to NPD, an appropriate culture is an ingredient essential to success (Cooper et al. 2004).

Cohen and Kozak (2001) write about market-based knowledge clusters, where connectivity allows better integration of the value chain from the forest to the end user. Manager comments regarding a link to the market show that some companies are embracing this concept as they work to better utilize the raw material resource: their forests. This particular message came predominately from European managers but not exclusively. It brings into question how current trends in forestland ownership may impact further integration of the value chain. It is an open question whether separation of forestland assets and forest products manufacturing will inhibit the ability of firms to meet customer needs.

Although the descriptions made and terminology used by managers would suggest highly market-orientated companies, past research suggests this may not be the case, at least when compared with other industries (Hansen et al. 2006b). In addition, because they were asked a general questions about innovativeness rather than one affiliated with their company, it can be concluded that they were describing the ideal situation for innovativeness rather than the current status of their operations. Market orientation is important, because it has been found to be impact successful NPD and adoption of process technology in the North American sawmilling industry (Crespell et al. 2006; Lee et al. 1999).

Being recognized as a leader is a manifestation of being an early adopter, as defined by Rogers (2003). Those companies that are consistently the first to adopt new concepts, practices, and (or) products are recognized as consistent creators of innovation will earn recognition as industry leaders. Managers saw the ability to look into the future, anticipate changes, and proactively position themselves for continued leadership as important aspects of innovativeness.

Challenges to being innovative

The forestry industry has long been characterized as mature (Cohen and Sinclair 1989) and production oriented (Juslin and Hansen 2003; Cohen and Kozak 2001). Declining sectors of the forest industry face the most significant difficulty in organizing for innovation (Strebel 1987). Styles and Goddard (2004) suggest that firms falling into the maturity trap do so because they compete in an industry with many firms pursuing the same strategy. Forest industry companies often concentrate on a low-cost strategy (Rich 1986; Sierilä 1987; Bush and Sinclair 1992; Niemelä 1993), and in this context, firms attempt to compete by “being better at the same game” (Styles and Goddard 2004). A consequence of mainstream thinking can be a loss of the excitement of creating something new (Fonseca 2002), which does not facilitate innovation.

Managerial attitude toward change has long been identified as influencing organizational innovation (Damapour 1991). Bull and Ferguson (2006) found that flexible management was important for successful commercialization of innovations and that a company culture supportive of collective learning was an important core competency. Managers often described aspects of company culture that were not conducive to innovativeness. Other studies of manager perceptions have found similar results (AIC 2004).

Dougherty and Hardy (1996) provide extensive insights into the challenges of sustaining innovation in large, mature organizations. Many of their findings parallel those in this study. In describing the companies they studied, they state, “Innovation was not simply suppressed, it was unseen; it was ignored and invisible in a wider organizational community that could not understand its role.” (p. 1134). They also state that, “Innovation had no permanent or inherent strategic meaning, certainly none that outlived regular changes in senior management” (p. 1142) illustrating the difficulty in prescribing and developing an innovative company culture. In moving from a production to a market orientation and attempting to be more innovative, forest industry managers are facing the same difficulties.

Another important aspect of moving toward a market-oriented culture and being more innovative is the shift in power that is often necessary. Innovation involves a disturbance of the status quo and threatens established organizational routines (Storey 2000). Managers described a traditional situation in their companies where manufacturing held much of the decision-making power. Innovation inevitably creates changes in power relations (Fonseca 2002). In the work of Dougherty and Hardy (1996), power shifts were found to be necessary for large, mature organizations to become more innovative. They found that, in product innovations, manufacturing was often not included in development teams, so although their findings are different, the principle of power shifts is important to remember when pursuing innovativeness.

Styles and Goddard (2004) claim that managers in a mature industry tend to move around within that industry, which only reinforces existing thinking and does not create a situation ideal for creating new ideas. In addition, Damapour (1991) and Subramanian and Nilakanta (1996) emphasize that a greater variety of specialists increases the knowledge base and sharing of ideas. Some managers expressed these same ideas with respect to their companies, whereas others stated that outsiders had specifically been brought in to diversify ideas and approaches. Anecdotally, efforts of diversifying management in forest industry companies have often failed as “outsider” managers attempted to implement changes that the corporate culture would not bear. Attempting to implement change beyond the assimilation capacity of firm culture is clearly counterproductive.

Managers identified the flow of information (or lack thereof) from the market to the manufacturer to be a major challenge. This is not necessarily surprising in an industry with a traditional production orientation. Historically, the focus simply was not on downstream members of the value chain, let alone final consumers (Hansen and Juslin 2005). It is especially problematic for smaller firms to successfully access and utilize external information (Friel 2000). As forest industry companies pursue the culture shift to a market orientation, it is imperative that expertise and skill be developed in actively gathering market intelligence and integrating it across operations. Improving market intelligence gathering and use is important to the success of introducing new products, and previous research has shown this to be a weakness of forest industry companies (Crespell et al. 2006).
Measures of innovativeness

Previous research on the forest sector has shown a rather informal approach to NPD processes and limited knowledge by managers regarding innovation metrics (R&D as a percentage of sales) (Crespell et al. 2006; Hansen 2006). Our results reinforce earlier findings. Measurement of innovativeness associated with NPD is common for high-performing companies, and they use well-established metrics (e.g., Cooper et al. 2004). Measuring innovativeness was not a high priority for most companies represented in the sample. This suggests that innovation management is an area for potential development.

Building innovative capacity

Although there are extensive research results documenting firm characteristics that can enhance innovativeness, few of these were mentioned by managers in the interviews. For example, organizational slack has often been identified as a key factor in innovativeness, but few managers referred to this concept. Those that did referred to the fact that their operations were operating so lean that they typically had insufficient time for training personnel, let alone time for creative discovery by staff. This is similar to Korhonen’s (2006) forest industry findings showing that a lack of slack resources resulted in less intercompany communication and decreased access to information and knowledge sources, which are important ingredients of innovativeness. This situation suggests a lingering focus on process improvement and a production orientation within the industry. Proactive development of innovative capacity appears to present significant opportunities for those companies willing to invest.

Business restructuring

Dougherty and Hardy (1996) suggest that large, mature organizations must become more innovative to survive, and to do this, they must change the way they organize; this shows that forest industry companies are correct in considering new organizational structures. However, managers are not embracing the ideals of “value innovation” (Matthyssens et al. 2006). Value innovation goes beyond basic restructuring in an attempt to break the dominant industry recipe and, thereby, “create fundamentally new and superior customer value” (Matthyssens et al. 2006). Making structural changes to increase or facilitate a market orientation is a positive development but is unlikely to bring revolutionary change in value chain relationships and create truly new business models.

Additional insights

During this study, we had significant interactions with industry managers and spent hundreds of hours immersed in the data and discussing our findings. Resulting from this process, a number of issues emerged that, although not fully supported across our data, are worth consideration by researchers and practitioners alike.

Often, across society, North America looks to Europe as a portent of trends. For example, many of the environmental issues that have impacted the forest sector in recent years first rose to prominence in Europe before making their way west. Several of the European companies in our sample had recently increased investment in R&D, whereas it has been suggested that firms in North America are downsizing in this area (Mohr 2002). Does this suggest a future competitive advantage for European firms, or, are North American firms choosing to accomplish their R&D in different ways, such as one firm in our sample that was actively outsourcings its efforts?

Companies appear to struggle mightily to transfer knowledge about innovations across mills, divisions, or other levels of the organization. In other words, interorganizational diffusion of ideas or concepts is problematic, as found in previous research (Storey 2000). Several of the companies represented in this study have integrated operations including both paper and wood products. However, our sample revealed only one instance where strong working relationships existed between the wood products and paper products R&D functions. In most cases, personnel in wood products could benefit from the consumer-oriented NPD and branding experience residing in the paper side of companies. In addition, significant opportunities exist in better integrating and sharing knowledge across mill sites. The importance of knowledge management is often addressed in the literature (Cohen and Kozak 2001; Korhonen and Niemelä 2004). One aspect of this issue is well illustrated by an explanation from one of our interviewees:

we probably have six people, maybe seven in the [product] for North America that, if you walked up to them today, [and said] “I need you to design me a [product] and here’s all the parameters you need to take into consideration when you do it.” We probably have six or seven people that could do that at this company, and I don’t think that’s very many; because if two or three of those people disappear and go somewhere else, how do you replace them? [North America]

Companies can systematize flow of information across mills or other organizational divisions, but it requires significant efforts and investments.

Conclusions

Much of the insight gained during this research is tied to issues of company culture. Maintaining an appropriate culture can minimize challenges to innovativeness and, at the same time, provide the right ingredients for facilitating creation and adoption of innovations. It cannot be overemphasized that company leadership plays a critical role in establishing the culture of a company. As stated by our interviewees, there must be an atmosphere that is open and in which people feel free to take risks. Otherwise, innovativeness will be stifled.

Market orientation, a culture-based phenomenon, receives considerable emphasis in the industry trade press and by our interviewees. The literature suggests that market orientation helps facilitate innovativeness and, consequently, firm performance. Accordingly, forest industry firms are correct in pursuing an enhanced market orientation and should continue to build this resource. It should be recognized that increasing market orientation will require continued evolution of firm culture and that this change may require shifts in power relations within the firm. It is important to recognize and manage these as they occur.

Our results indicate underdeveloped attention and resources dedicated to innovation management within forest indus-
try firms. Many firms had no programs for systematically capturing innovative ideas and were unable to identify programs for increasing firm innovativeness. However, it may be that many managers do not associate continuing education and other similar efforts for increasing staff knowledge as a mechanism for increasing innovativeness. If this is the case, one must ask whether it is simply a case of insufficient specificity of terminology. On the other hand, increased focus on the concept of innovativeness could potentially benefit many firms, because it would help managers concentrate on the various actions undertaken in their companies and how they may facilitate an innovation management effort.

Finally, restructuring and shifting business models were discussed by a number of managers, yet it was unclear that these changes fit the concepts advocated in the current literature described as “value innovation.” As mentioned earlier, creating truly new customer value requires breaking the dominant industry recipe. This would mean breakthrough or radical innovation and entering uncharted waters in an attempt to innovate to compete.

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