SOCIETY OF WOOD SCIENCE & TECHNOLOGY

How Innovation Happens: Practical Insights from Cox Industries, Inc.

BIOPRODUCTS BUSINESS

Eric Hansen[1]* and Barry Breede[2]

Abstract

The forest sector is often characterized as mature, resistant to change, and lacking innovation. To address this situation, the forest sector literature is replete with calls to company managers to embrace innovation and foster innovative culture. However, the process of innovation, i.e., how innovation actually takes place within forest sector firms has not been previously described. We address this important knowledge gap. In so doing, we also aim to bridge the practitioner - researcher gap through our novel methodological approach. Our findings suggest that a committed and patient leadership is required to bring about the culture change needed for improved innovation. Another critical element is the integration of business strategy and innovation strategy. Finally, our results show that smaller operations, navigating in an intensely competitive sector, have the potential to experience significant success via innovation efforts.

Keywords: case study, forest sector, innovation, new product development process

1.0 Introduction

Practical, experience-based insight into management processes are, unfortunately, highly uncommon in the forest sector literature. The gap between researchers and practitioners has seen extensive coverage in the general business literature, beginning in the 1950s with scholars increasingly advocating for a closer connection between the two in order to achieve both rigor and relevance (Bartunek and Rynes 2014, Avenier and Cajaiba 2012). Understanding a complex reality is facilitated by seeking multiple perspectives (Van de Ven 2007) and joint work between "insiders" and "outsiders" is said to allow sense making of a setting and the knowledge that can be gained from it (Bartunek and Louis 1996). Accordingly, in this work we embrace the academia/practitioner connection by combining the "insider" and "outsider" perspectives to explore a key topic in the forest sector literature, innovation. This allows us to provide a uniquely insightful piece profiling the experiences, successes, and challenges of implementing an innovation culture change within a medium-sized forest sector company.

We shed light on the black box of innovation, providing deep insights into the experience of Cox Industries, Inc., as it undertook a strategic innovation initiative. Cox recognized an imperative to innovate, developed a process to create innovations, and now has concrete experiences with implementing those innovations. The text that follows documents the history of internal developments within Cox; its experiences in attempting to innovate, including successes and failures; and provides lessons learned that other forest sector companies can consider as they attempt to ramp up their own innovativeness.

When dealing with innovation and innovativeness of companies it is critical to consider the role of culture (Rubera and Kirca 2012). Accordingly, we frame our insights around issues of company culture and include in our theoretical background and discussion issues of company culture and innovativeness because they are vividly illustrated via the Cox experience. In the

1 Professor of Forest Products Marketing, Department of Wood Science and Engineering, College of Forestry, Oregon State University, 119 Richardson Hall, Corvallis, OR 97331.

2 Chief Innovation and Marketing Officer, Cox Industries, Inc., 860 Cannon Bridge Rd., Greenville, SC 29115.

* *Corresponding author:* E-mail: Eric.Hansen@oregonstate.edu. Tel.: 541-737-4240.

Acknowledgements: The authors thank Mikee Johnson and Greg Campbell of Cox Industries, Inc. for sharing their story and facilitating this work. In addition, we would like to recognize the insights for improvement to an earlier draft of this article from the Forest Business Solutions team at OSU.

BioProducts Business 1(3), 2016, pp. 32–41. http://biobus.swst.org.
https://doi.org/10.22382/bpb-2016-003

remainder of the text we provide a brief theoretical background regarding innovativeness and culture, followed by a description of the methods employed in the study. Following the methods is the story of innovation in Cox Industries, Inc. Finally, we provide a discussion that includes recommendations for industry managers.

2.0 Theoretical Background

In the last decade, forest sector innovativeness has seen considerable research attention (Hansen et al. 2014, Leavengood and Bull 2014, Weiss et al. 2011) that includes many calls for industry to move away from its traditional production orientation and aversion to change to become more innovative and thus more competitive (Roos and Stendahl 2015, Han and Hansen 2015, Leavengood and Bull 2014, Hämäläinen and Pesonen 2011, Björkdahl and Börjesson 2011). An innovative firm is one that has the propensity to create and/or adopt new products, processes or business systems (Knowles et al. 2008), and ultimately, is better able to create or otherwise produce innovations. Research shows a strong connection between firm innovativeness and financial performance (Kilic et al. 2015, Crespell and Hansen 2008, Välimäki et al. 2004).

Deshpande and Webster (1989) describe organizational culture as the pattern of shared values and beliefs that help members of an organization understand why things happen and thus teach them the behavioral norms in the organization. Innovativeness is considered to be part of company culture (Dobni 2010, Augusto and Coelho 2009, Hurley and Hult 1998). The forest sector literature also addresses innovativeness as an element of culture (Hansen et al 2007, Stendahl et al. 2007, Välimäki et al. 2004) and generally recognizes the sector to be a low-innovation sector, or one lacking innovativeness (Bull et al. 2015, Leavengood and Bull 2014, Stendahl and Roos 2008, Crespell et al. 2006).

Considered as an entire body of work, the picture of forest sector innovativeness, painted by research across the forest sector value chain, and in a number of different world regions, is both highly consistent and un-complimentary (e.g., Hansen et al. 2014, Stendahl and Roos 2008). Some of the most compelling evidence comes from managers within the industry as they explain to researchers the situation within their company or sector (Hansen et al. 2007). Researchers in Sweden provide perhaps the strongest evidence from an industry manager, "the biggest problem with this firm is its management. Most of the top management has grown up with big mills and established customers, which require very little innovation. All new issues and ideas are horror for them." (as quoted in Björkdah and Börjesson 2011). Given this situation, there have been many calls for improved innovativeness within the sector with an end goal of improved firm performance (e.g., Hansen 2010, Bullard and West 2002).

As innovativeness is an element of company culture, achieving enhanced innovativeness for most firms means culture change, an activity that, in the best of situations is highly challenging. In addition, while the literature is quite critical of industry with respect to maintaining its traditional culture and its need to be more innovative, that same literature often fails to provide managers with specific actions or tools that can be used in this quest (Hansen and Bull 2010). A concrete example of successful ongoing efforts within a forest sector firm can help fill this gap.

3.0 Methods

Our approach is unique in forest sector research as it focuses on one extreme case in the spirit of the relevatory, single-case study (Yin 2009), including an insider/outsider approach (Bartunek and Louis 1996). Case study research in the forest sector generally includes multiple companies or experts (e.g., Spetic et al. 2016, Han and Hansen 2016, Husso and Nybakk 2010). In this situation, focusing on one company is justified by the fact that its experience is highly unusual in the sector. In Yin's (2009, p. 49) words the Cox story represents, "a situation previously inaccessible to scientific observation." To be sure, there may be firms that possess effective innovation management and new product development processes, the Cox story represents a context to understand the process of culture change that the company adopted in order to become more innovative.

Initial data for the work comes from in-depth interviews of three firm executives: the Chief Executive Officer, Chief Operations Officer, and Chief Marketing and Innovation Officer. Subsequently, the data comes from the experience of the co-author serving as the company's Chief Marketing and Innovation Officer. This insider/outsider approach (Bartunek and Louis 1996) is novel for the forest sector literature. The direct participation in the process by the "insider" allows insights into the experience of the company that could not otherwise be accomplished, even in the best designed and most well-

funded qualitative study. The background and research experience of the "outsider" author allows construction of an academic architecture to the "insider's" views and insights. With that blend in mind, the data analysis departed from a conventional qualitative analysis and instead aimed at creation of this "Cox story" which was essentially an iterative process between the authors, partially drawing on interview transcripts and partially on the resident knowledge of the company author.

4.0 Cox Industries, Inc.

Cox Industries, Inc. is a medium-sized, family owned and operated company headquartered in South Carolina. The company was formed in 1954 by WB and EJ Cox, two brothers who pioneered one of the earliest innovations in the treated lumber market, "Kiln Dry After Treatment" or KDAT wood. This manufacturing process resulted in a generally higher quality lumber product that remains an industry standard and has been widely adopted by others in the treated lumber market.

Currently, the company is managed by third generation family members. W.B.'s grandson Michael Johnson (Mikee) serves as CEO. Mikee's academic background comes from outside the forest sector having studied political science and English at Furman University. His prior business experience was also outside the company, having worked as a Vice President at Morgan Stanley, a securities brokerage firm.

Cox maintains a flat structure with essentially three layers of management between Mikee and the hourly production workers. While other competitors downsized during the Global Financial Crisis, Cox was able to persevere through this period in part because of the balance of markets it sells to including both residential lumber retailers, electric utilities and industrial customers. The diversity of Cox's product mix along with its ability to make strategic acquisitions in the utility pole business put the company in a growth mode during a period when many others were in decline. Today the company employs 400+ people and consists of multiple sales offices, 15 manufacturing plants, and 22 distribution facilities.

Cox considers itself somewhat outside of the traditionally defined forest products industry and views its core business to be chemical application. As a treater of outdoor wood products, the company is organized around residential, commercial, industrial, and utility markets. Cox has a long history of cooperating with chemical companies in the R&D process for new chemical applications. In practice this means that the company is often the place where pilot testing of new formulations takes place. Once a chemical supplier has completed its lab-level testing, it then partners with Cox to conduct industrial-scale, pilot testing.

4.1 Historical Approach to Innovation

For over 50 years, the culture of innovation at Cox was predominately unstructured, intrepreneurially-led initiatives based on opportunities either developed by or presented to top level executives (e.g., acquisitions, new chemical treatments, new services). Many of the most enduring innovations were those developed by the chemical companies themselves. New treatment formulations developed by these third-party companies provided Cox additional sales opportunities, however because these same innovations were also often offered simultaneously to competitors, they failed to provide Cox a true, long-term strategic advantage.

Internally generated innovations within Cox were historically done with a Ready-Fire-Aim mentality wherein perceived opportunities were adopted into the business on a transactional rather than strategic basis. Many initiatives were undertaken based on either *ad hoc* customer comments (*idea du jour*) or on the perceived ability to capitalize on a near-term sales opportunity. In either case this resulted in a somewhat insulated and customer self-serving mentality to innovation, essentially reactive, instead of a broader strategic view of market dynamics. An idea was judged more on its ability to appease the needs of a particular customer or generate immediate sales than whether it addressed a long-term, strategic opportunity. The result was often an inability to sustain the innovation beyond the initial idea phase or specific customer and integrate into the business for the long term. An example included the short-term decision to open/staff a sales office in China to serve that market without having a clear understanding of the prospective market opportunity, cost structure or customer base which Cox could profitably pursue (the effort was eventually abandoned). In addition to this *ad hoc* approach, resources that were required to implement an innovation generally went to the person with the most clout or the loudest voice. That person in most cases was reacting to the here and now. Finally, there was no assigned individual to champion innovation day-to-day through a strategic lens, so if something did not succeed the company simply moved on to the next idea. Because of these factors, a more structured approach was needed.

4.2 The Impetus for Change

In the mid 1990's the Cox family began formation of an outside Board of Directors (BOD) to help bring both a different perspective to the business and to better formalize decision making on major company issues. The Board itself is composed of five independent outside directors and one family representative. Each is selected for a three-year tenure. Initially, Board members were primarily selected based on previous relationships they may have had with the family in some capacity and/or their prior board experience with other companies. However, when Mikee assumed leadership of the company, changes in the composition of the BOD began to emerge as prospective new members were vetted based more on their ability to bring specific skills or experiences that the company deemed important to its future success (Figure 1). Two such areas were information technology and innovation.

One of Mikee's and the Board's drivers for bringing stronger innovation skills to the BOD was due to both the large number of, and dollar amount of, innovations being pursued by the company at that time. The chemical treating sector's notoriously low margin structure made it important from a Board perspective that innovation investments be done more selectively, within the context of a broader strategic framework, and with the ability to measure their return on investment (ROI).

Undertaking this more structured evaluation of innovation at the Board level led Cox to abandon some prior innovations simply because they failed to deliver in terms of ROI. In some cases these were simply poor business decisions and in others it was a function of market dynamic changes so severe that a project had little hope of long-term success. LifePine™, a high-end fire retardant shingle business using Western Red Cedar is a good example. When prices for Western Red Cedar jumped dramatically compared to the market for traditional wood shingles, and luxury housing starts stalled in 2008, the market opportunity diminished radically. Cox was unable to profitably sustain the business and exited based on a Board-level decision.

More positively, as the company looked to better manage its internal inventory processes, an effort was undertaken to explore how radio frequency identification (RFID) could be adopted at the plant level to track product movement on a real-time basis. After evaluating the potential business and cost benefits of this technology, the company began a pilot test at two of its facilities.

Partially based on his own observations and partially through interactions with the Board, Mikee saw the need to establish innovation as a distinct discipline within the company. In Mikee's mind, formalizing the innovation process within the company was a critical business and cultural shift that had to take place for the company to realize its future market potential and to maximize shareholder returns. The company needed an approach that would combine strategy, process and, because of the company's relatively small size, implementation of new innovations. Cox could not afford to have an innovation program that operates simply as a "think tank." It also had to house operational capability and authority to implement new innovations.

As the company further engaged in the use of RFID technology, a separate and independent business opportunity in software/data services emerged that combined Cox's expertise in manufacturing utility poles with the ability to use RFID to track, inspect and maintain these same poles once deployed to the field. As the business model concept was developed it became clear that the Board member leading this effort must make a decision to either remain a Board member or leave and lead the development of this new software start-up. Leading a

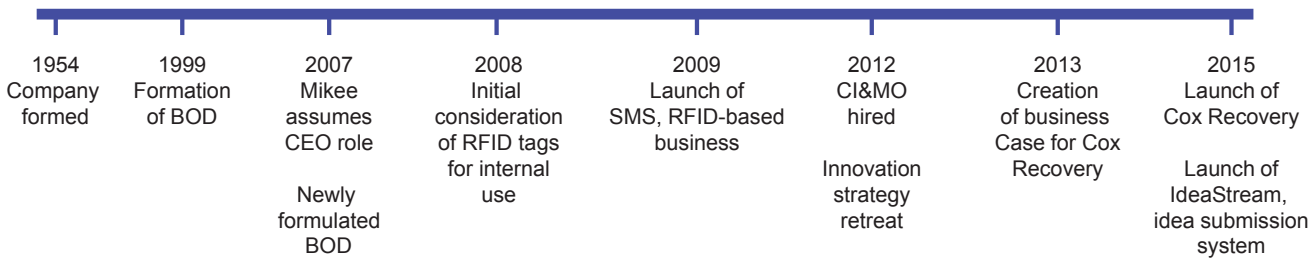

Figure 1: Timeline of Key Events in the Evolution of Innovation at Cox Industries, Inc.

project as a Board member and also being part of the decision-making body was a conflict of interest. Ultimately, a decision was made to hire the Board member (Barry) as a full-time, permanent employee. This decision allowed Mikee to achieve his goal of bringing innovation in-house as a distinct discipline of the company and it removed the inherent conflict of having Barry serve as both Board member and head of the new start-up.

Barry began his role of Chief Innovation and Marketing Officer (CI&MO) in late 2012. Barry's background includes extensive experience in marketing and innovation in consumer products. Soon after this he hired a staff person that was an outside-the-box thinker with a background in archeology and landscape architecture.

Like many mid-size companies with limited resources who are considering adoption of a formal innovation process, Cox also realized that the person leading this effort needed to have sufficient operational and sales background to be able to successfully commercialize new innovations into the marketplace, and not simply expect to hand the idea to someone else to implement. The reality of this situation makes innovation in a company like Cox far different than that of larger businesses that can and do operate their innovation effort as a stand-alone entity without any direct connection to, or engagement in, the actual commercialization of the innovation. This somewhat hybrid approach to innovation works for Cox because it still allows for day-to-day engagement and oversight of innovation while doing so within a relatively small overall investment. It also allows for better and faster market feedback on innovations as the individual(s) managing it are also involved in helping commercialize it.

4.3 Current Approach to Innovation

As the anointed "Innovation Champion" Barry would be dedicating significant time and effort to the design of the innovation system within Cox, unlike prior *ad hoc* innovation efforts. The goal was to design an approach to innovation that would result in a portfolio of well-constructed, strategic innovations that would ultimately play a large role in future brand and financial success of the company. Much like a solid stock portfolio, Cox sought to include in this innovation portfolio ideas that were big and potentially highly disruptive to the marketplace (e.g., totally new business), as well as those that were simply incremental to the business (e.g., internal process improvements).

Formation of the innovation initiative was built around five primary steps starting with a view of the broader market Cox participates in and culminating with a set of specific, strategic innovation targets.

4.3.1 Where to focus first: Early in the effort, executive leadership made the strategic decision that initial efforts would focus on Cox's industrial business (poles, pilings, and crossarms). Primarily this was because this sector typically has higher margins compared to residential treated lumber. Higher margins means an easier time financing innovations. Also important was that in this sector Cox sells directly to end users (utilities) whereas on the residential side it does not. In other words, being closer to the market ensured better feedback and faster market evaluation.

4.3.2 Facilitated Ideation: Using an outside consultant, the company underwent a facilitated ideation process. The first step was to identify a set of "forward thinkers" in the company that was cross functional, geographically dispersed, and could look out 5-7 years in their business area. Thirty-five company personnel were charged not with establishing a solution (or idea), but rather to clarify what was emerging in the market that might present an innovation opportunity. Additionally, in order to prevent the potential for "leadership bias" to challenge early-stage thinking, a decision was made to remove both the CEO and COO from active participation in this group. Instead these individuals would assume the role of "sponsors" ensuring that proper resources would be allocated to whatever innovations were ultimately selected for further development

At a two-day, scenario planning-based retreat at Furman University, the group was given 35 "prompts" such as "smart poles", "pole producers are now responsible for all stages of use and disposal", and "lots of old poles". Using these prompts they hypothesized what would happen in the next 5-7 years. In other words, the group created a scenario planning-informed view of the future. In practice, this creation represented 50-60 prognostications or so-called "assumptions" that collectively also helped to refine the Industrial Division's future business strategy. Eventually, these assumptions were reduced by the group to a smaller set of probable scenarios, opportunities that the group believed had the highest probability of occurring within the allotted 5-7 year time frame. Further winnowing led to identification of five innovation targets. The team returned to the office

with an assignment of writing the business case for each target. The business cases were created during several weeks following the retreat. Each business case needed to be "complete and compelling" to win the attention and resources of company executives. In other words, the case needed to holistically consider the potential of the idea and give a strong indication of an acceptable ROI.

4.3.3 Developing a Business Case: The primary outcome of the retreat was identification of five concepts: three new product areas and two external processes or service solutions. Currently, four of the original ideas remain as part of Cox's overall innovation portfolio. One idea that was eventually eliminated was incorporation of an herbicide in the treatment of utility poles. Especially in the US south, vines such as kudzu can be very problematic. After carefully analyzing the region where this could be sold it was determined the market size was insufficient to justify investment in new product development. Other business cases that remain an active part of Cox's overall innovation portfolio are driven from broader market assumptions including how best to respond to the increasing amount and strength of storm activity in key regions of the US through new products and services.

4.3.4 Selection of Business Case: A pre-defined "ground" rule for Cox's innovation process was that the sponsors (CEO and COO) would only select one innovation for immediate development. The other business cases would be maintained and updated as needed, but due to available resources and a corporate history of moving perhaps too quickly from one idea to another, it was agreed that the likelihood of success would increase significantly with singular focus on one business case.

The decision was made to pursue the area of pole/wood waste disposal as a target area of innovation based on the original prompt and follow-on thinking regarding "lots of old poles", and more specifically the development of a more environmentally sound method of disposing of poles than those predominantly in use (e.g., landfilling). The innovation team subsequently immersed themselves in months of study about this market to gain a better understanding of user needs, market dynamics, state and federal regulations, financial return, etc. Ultimately, this led to the creation of a new business subsidiary, Cox Recovery, which focuses on removing and disposing of a utility's wood waste stream through the use of waste-to-energy incineration. A longer-term opportunity for this business involves the ability to use this same material in the production of a biodiesel product. Cox is a heavy user of diesel both for the wood treatment process and for transportation/logistics purposes.

4.3.5 Implementation: Cox Recovery has now been in a commercial state since mid-2015, so while it's still somewhat early to judge its success, the division has already exceeded all top and bottom line financial goals. Interest from Cox's existing utility customer base, particularly larger, investor-owned utilities has been strong, leading Cox to believe that one of the initial assumptions generated during their forward-thinker retreat is likely to become a reality for wood treatment companies like Cox; each must have an end-of-life disposal option to complement their new pole manufacturing capability.

4.4 Ongoing Initiatives

Innovation at Cox is characterized in part by regular and on-going interaction with the marketplace and with those outside parties that can bring value to Cox's innovation efforts. An important input into the process is regular market research. Techniques include ethnographic approaches such as going to the field with utility line crews, online surveys of customer perceptions and preferences, and analysis of secondary data from trade associations and consulting firms. Information from these efforts not only lead to potential new innovation opportunities but they also help to update and refine existing business cases. Additionally, in part because of internal limitations, Cox relies heavily on the value that non-industry partners can bring to their innovation efforts. This includes formalized relationships with significantly larger industrial companies who are involved in technologies that Cox believes, with adaptation, may have value in their own business.

For innovation to have the kind of long-term business value that Mikee and the BOD envision, a key next step is to embed innovation as a key cultural mindset at Cox. Ideally this means bringing the opportunity for innovation to all levels of the company, and consequently expecting that all employees will contribute to this process, not just the Innovation function led by Barry or others in executive leadership. This cultural transition is ongoing and as of this writing the company is in the midst of implementing a company-wide idea system designed to further embed innovativeness into the culture and allow all employees to experience the direct value of innovation.

IdeaStream was launched in January 2015. Every quarter employees are encouraged to submit an innovation for consideration using either idea submission forms located at each Cox facility or on-line through the employee portal. Employee ideas are competitively evaluated by a cross-functional evaluation committee. Three ideas are awarded a prize of $1000, while the other top 25 ideas receive some sort of company swag. In the first quarter of 2015 only 10 ideas were submitted, but in the second there were already 60 ideas and by the end of 2015 more than 100 ideas were submitted in a quarter. Many of the ideas have been generated by plant employees, those closest to the manufacturing processes Cox employs. The range of ideas submitted touch on a variety of areas including new safety procedures, new methods of improving productivity, and new ways of improving communication between and within plants. Individual ideas selected for awards are now being implemented company-wide with progress monitored by the respective General Managers for each of Cox's divisions.

5.0 Discussion and Lessons Learned

Generally, any managerial change of the magnitude described above must originate from the leadership level and it must be recognized that change takes time. As described by CEO Mikee Johnson in 2013, "…we have formalized the innovation process, but we are still new to the innovation process and it is far from the cultural norm here. It is new, and I am sure we still have critics within our own organization thinking innovation is just blowing money." Table 1 outlines a series of targeted changes that management aspires to accomplish via the innovation initiative.

Although still in a relatively early stage of development, there are a variety of lessons learned from the Cox experience. Below we outline those that can be considered the most significant examples of keys to success in the Cox experience, using the following categories:

1. Committed and patient leadership
2. Culture change
3. Structured approach
4. Experience nets enhanced skills and capabilities

5.1 Committed and Patient Leadership

Company leadership significantly impacts the success of innovation in an organization (Elenkov and Manev 2005). Having committed and patient leadership is one critical factor in success of the Cox innovation initiative. Having served on the BOD for some time Barry already had high credibility with company leadership when he was hired to lead innovation efforts. In other words, his legitimacy was not something that was questioned as the company began its focused innovation efforts.

5.2 Culture Change

An organization's culture has a strong impact on employee behavior (Hogan and Coote 2014). Tushman and O'Reilly (1996) refer to cultural and structural inertia that make it difficult for companies to change, describing structural inertia as, "…resistance to change rooted in the size, complexity, and interdependence in the organization's structures, systems, procedures, and processes

Table 1: Changes within Cox Industries, Inc. Targeted Via the Innovation Initiative

Standard Procedure Prior to Initiative	Post-Initiative Ways of Operating
Ad hoc innovation, ideas primarily originating with salespeople	Strategic process designed for ideation, due diligence on concepts, and selection and implementation of most promising concepts
["Just throw spaghetti against the wall and see what sticks." – CEO]	["...now we are really focused on doing 1-2 projects, do them very well, and have them tied direct to our projections in the market space." – CEO]
Heavy reliance on chemical companies for innovation	Independent creation and implementation of innovation concepts
Following the whims of customers or salespeople	Strive to match innovation strategy with company strategy, strategic thinking
No innovation champion, too lean for effective implementation	Innovation under management of Chief Marketing and Innovation Officer
No market research	Regular market research conducted via multiple methods
Ad hoc idea generation	Systematic idea generation and inventory system, IdeaStream

(p 18)." Cultural inertia is the result of norms, values, and lessons that make up the accepted "way of doing things" within a firm. The more ingrained these norms and values become, the greater the inertia. Cultural inertia was clearly present in Cox, but the proactive decision to develop a new approach to innovation was the first step in breaking the inertia. Appropriately, the call to change came from company leadership, as it is the leadership that has the ability to create new cultural norms (Hogan and Coote 2014). Developing a proactive culture that is comfortable with risk is identified as a key step for companies pursuing an innovation agenda (Leavengood et al. 2014).

A wealth of research exists showing that when a company is highly effective at decreasing costs, and increasing efficiencies (typical of forest sector firms), it is not necessarily also endowed with the skills necessary to create new products. Being effective at both is typically referred to as organizational ambidexterity (Tushman and O'Reilly 1996). By hiring what can be considered a quasi R&D group, Mikee was able to begin the innovation initiative with people lacking the baggage of the existing low-cost, high efficiency culture within the company. Hiring Barry and his assistant was a way of buying a bit of ambidexterity for the company. In addition, research indicates forest sector firms run too lean for personnel to focus on innovation (Hansen et al. 2014, Nakamura et al. 2003), so bringing in new people bypassed the tendency to think people do not have time to innovate. Stendahl and Roos (2008) make a strong case for allocation of personnel resources specifically to product development work. In the Cox case hiring a Chief Innovation and Marketing Officer as well as a marketing assistant was a critical step towards successful innovation.

5.3 Structured Approach

No innovation effort will produce results if it is *ad hoc* or reactionary. The history of innovation at Cox was exactly this, largely following the whims of customers or ideas from salespeople. While the literature is replete with recommendations to be market and customer oriented (e.g., Narver and Slater 1990, Hansen et al. 2006), others argue that this can lead to incremental innovations to existing products (Stendahl and Roos 2008). This "tyranny of the market" is the situation Cox was in prior to the innovation initiative. Now the company focuses on matching innovation strategy with company strategy, and strategic thinking around future scenarios as it identifies potential innovations and its efforts to be market oriented and conduct market research are focused on informing these strategic efforts.

Cox utilized an outside facilitator to jump-start its innovation efforts and followed this with a project-based approach, much like that described in Nordic sawmills (Stendahl et al. 2007). Lack of a structured approach to new product development is said to be one weakness of forest sector firms (Hansen 2006). This does not, however, suggest that highly bureaucratic and tightly controlled systems are needed.

5.4 Experience Nets Enhanced Skills and Capabilities

As with most things in life and business, experience leads to improved knowledge and capabilities, especially when it takes place ahead of competitors (Korhonen and Niemelä 2005). Stendahl et al. (2007) report a key outcome of product development projects in Nordic sawmills is development of resources and capabilities. There is high value in learning from doing. The long-term experience of pilot testing chemical formulations from its suppliers may have positioned Cox well for an easy transition to its own innovation initiative. The experience of collaborating on innovation with suppliers may have developed capabilities that were unrecognized by company management. Perhaps more importantly this process helped reveal to Cox that the only way the company could innovate with true market differentiating products and services was to undertake innovation on their own and thereby not be totally beholden to a supplier's own business agenda. In another example, learning to correctly estimate the market potential for an innovation helped eliminate dead ends for Cox, as in the example of the concept of utility poles incorporating herbicides.

6.0 Conclusions

The experiences gained thus far in Cox's innovation efforts provide important lessons for other companies endeavoring to pursue a similar agenda. Perhaps most important is integration of business strategy and innovation strategy. An innovation strategy must be more holistic than simply idea development and must fit well with the overall strategy employed by the company. Potential innovations should be carefully filtered through the business strategy when evaluating viability. Without this strategic approach, innovation efforts can become unfocused and, at worst, random, dramatically reducing the potential for successful outcomes.

Similarly, business strategy itself should also undergo regular evaluation, particularly if the management consensus is that potentially disruptive market influences are likely to require changes to internal operations, product mix or even the base business model itself. This ebb and flow between strategy and innovation is something that must be constantly monitored, managed and updated to ensure the pursuit of innovation opportunities is focused both in terms of quantity and direction.

Pursuit of an innovation strategy is not a quick fix, but a long-term effort. In the case of Cox, the effort was focused on moving away from being a commodity supplier. Early results were often murky and the eventual outcome unpredictable. What is quite clear, however, is that if price is the only means of differentiating then the likely success of a business model is short-lived. For most operations a key aspect of the long-term effort must be culture shift. The ultimate desired outcome is a workforce that sees innovation as part of its day-to-day efforts. IdeaStream is the way Cox is attempting to institutionalize a spirited culture of innovation.

Given the lean nature of the workforce in most forest sector operations, adding personnel dedicated specifically to innovation is likely a necessary ingredient for success. In the Cox example, having an innovation champion with a license to operate from the CEO was a critical piece of the puzzle. Without the strong support of leadership, most innovation efforts are bound for failure. At best, they will be unable to realize their full potential.

Learning by doing builds skills and capabilities, so the time to focus on innovation is now. Only by strategically working to alter culture and develop new products, processes, and business systems will a company improve its innovation abilities. The Cox example shows that smaller operations, navigating in an intensely competitive sector, have the potential to experience significant success via innovation efforts. Choose to ignore innovation at your own peril!

7.0 Literature

Augusto, M., & Coelho, F. (2009). Market orientation and new-to-the-world products: Exploring the moderating effects of innovativeness, competitive strength, and environmental forces. *Industrial Marketing Management*, 38(1), 94-108.

Avenier, M. J., & Cajaiba, A. P. (2012). The dialogical model: developing academic knowledge for and from practice. *European Management Review,* 9(4), 199-212.

Bartunek, J. M., & Louis, M. R. (1996). *Insider/outsider team research.* Thousand Oaks, CA: Sage Publications. 85 pp.

Bartunek, J. M., & Rynes, S. L. (2014). Academics and practitioners are alike and unlike the paradoxes of academic–practitioner relationships. *Journal of Management,* 40(5), 1181-1201.

Björkdahl, J., & Börjesson S. (2011). Organizational climate and capabilities for innovation: A study of nine forest-based Nordic manufacturing firms. *Scandinavian Journal of Forest Research,* 26(5), 488-500.

Bull L., Hansen E., & Jenkin B. (2015) Maximising the potential of Australia's forests – collaborating and innovating to realise the opportunity. Workshop Report and Response to the Forest Industry Advisory Council's Strategic Directions Issues Paper. Lynea Advisory. Melbourne Australia. 25 pp.

Bullard, S. H., & West, C. D. (2002). Furniture manufacturing and marketing: Eight strategic issues for the 21st century. Forest and Wildlife Research Center, Bulletin. FP-227, Mississippi State University. 24 pp.

Crespell, P., & Hansen, E. (2008). Work climate, innovativeness, and firm performance in the US forest sector: In search of a conceptual framework. *Canadian Journal of Forest Research,* 38(7), 1703-1715.

Crespell, P., Knowles, C., & Hansen, E. (2006). Innovativeness in the North American softwood sawmilling industry. *Forest Science,* 52(5), 568-578.

Deshpande, R., & Webster Jr, F. E. (1989). Organizational culture and marketing: defining the research agenda. *The Journal of Marketing,* 53(1), 3-15.

Dobni, C. B. (2010). The relationship between an innovation orientation and competitive strategy. *International Journal of Innovation Management,* 14(02), 331-357.

Elenkov, D. S., & Manev, I. M. (2005). Top management leadership and influence on innovation: The role of sociocultural context. *Journal of Management,* 31(3), 381-402.

Han, X., & Hansen, E. (2015). Marketing sophistication in private u.s. sawmilling companies. *Canadian Journal of Forest Research,* 46(1), 181-189.

Hansen, E. N. (2010). The role of innovation in the forest products industry. *Journal of Forestry,* 108(7), 348-353.

Hansen, E. (2006). The state of innovation and new product development in the North American lumber and panel industry. *Wood and Fiber Science,* 38(2), 325-333.

Hansen, E., Nybakk, E., & Panwar, R. (2014). Innovation insights from North American forest sector research: A literature review. *Forests,* 5(6), 1341-1355.

Hansen, E. & Bull, L. (2010). An illustration of lessons for forest sector researchers and managers from current new product development research. *Journal of Forest Products Business Research,* 7(4),1-7.

Hansen E., Juslin H., & Knowles C. (2007). Innovativeness in the global forest products industry: Exploring new insights. *Canadian Journal of Forest Research,* 37(8),1324-1335.

Hansen, E., Dibrell, C., & Down, J. (2006). Market orientation, strategy, and performance in the primary forest industry. *Forest Science,* 52(3), 209-220.

Hogan, S. J., & Coote, L. V. (2014). Organizational culture, innovation, and performance: A test of Schein's model. *Journal of Business Research,* 67(8), 1609-1621.

Hurley, R. F., & Hult, G. T. M. (1998). Innovation, market orientation, and organizational learning: an integration and empirical examination. *The Journal of Marketing,* 62(3), 42-54.

Husso, M., & Nybakk, E. (2010) Importance of internal and external factors when adapting to environmental changes in SME

sawmills in Norway and Finland: The manager's view. *Journal of Forest Products Business Research,* 7, 1-14.

Hämäläinen S., Näyhä A., & Pesonen H. L. (2011) Forest biorefineries–A business opportunity for the Finnish forest cluster. *Journal of Cleaner Production,* 19(16),1884-1891.

Knowles C., Hansen, E., & Shook, S. R. (2008) Assessing innovativeness in the North American softwood sawmilling industry using three methods. *Canadian Journal of Forest Research,* 38(2), 363-375.

Kilic, K., Ulusoy, G., Gunday, G. & Alpkan, L. (2009). Innovativeness, operations priorities and corporate performance: Analysis based on a taxonomy of innovativeness. *Journal of Engineering and Technology Management,* 35(1),115-133.

Korhonen, S., & Niemelä, J. (2005). A conceptual analysis of capabilities: Identifying and classifying sources of competitive advantage in the wood industry. *The Finnish Journal of Business Economics, 54*(1), 11-47.

Leavengood, S., Anderson, T. R., & Daim, T. U. (2014). Exploring linkage of quality management to innovation. *Total Quality Management & Business Excellence,* 25(9-10), 1126-1140.

Leavengood, S., & Bull, L. (2013). Innovation in the global forest sector. 377-404. In, *The global forest sector: Changes, practices, and prospects.* C Eds. Hansen, E., Panwar, R., & Vlosky R. RC Press, Boca Raton, FL. 462 pp.

Nakamura, M., Nelson, H., & Vertinsky, I. (2003). Cooperative R&D and the Canadian forest products industry. *Managerial and Decision Economics,* 24(2-3), 147-169.

Narver, J. C., & Slater, S. F. (1990). The effect of a market orientation on business profitability. *The Journal of Marketing,* 54(4), 20-35.

Roos, A., & Stendahl, M. (2016). The emerging bio-economy and the forest sector. In, *Forests, Business and Sustainability.* 179-201. Eds. R. Panwar, R. Kozak & E. Hansen. Earthscan Routledge. 213 pp.

Rubera, G., & Kirca, A. H. (2012). Firm innovativeness and its performance outcomes: A meta-analytic review and theoretical integration. *Journal of Marketing,* 76(3), 130-147.

Spetic, W., Kozak, R. and Vidal, N. (2016). Critical Factors of Competitiveness for the British Columbia Secondary Wood Products Industry. *Bioproducts Business,* 1(2), 13-31.

Stendahl, M., & Roos, A. (2008). Antecedents and barriers to product innovation–a comparison between innovating and non-innovating strategic business units in the wood industry. *Silva Fennica,* 42(4), 659-681.

Stendahl, M., Roos, A., & Hugosson, M. (2007). Product development in the Swedish and Finnish sawmilling industry–a qualitative study of managerial perceptions. *Journal of Forest Products Business Research,* 4(4), 1-24.

Tushman, M. L., & O'Reilly III, C. A. (1996). Ambidextrous organizations: Managing evolutionary and revolutionary change. *California Management Review,* 38(4), 8-30.

Weiss, G., Pettenella, D., Ollonqvist, P., & Slee, B. (2011). *Innovation in forestry: Territorial and value chain relationships.* MPG Books Group. 331 pp.

Van de Ven, A. H. (2007). *Engaged scholarship: a guide for organizational and social research.* Oxford University Press. New York. 330 pp.

Välimäki, H., Niskanen, A., Tervonen, K., & Laurila, I. (2004). Indicators of innovativeness and enterprise competitiveness in the wood products industry in Finland. *Scandinavian Journal of Forest Research,* 19(sup5), 90-96.

Yin, R. K. (2009). *Case study research: Design and methods*. Sage Publications. Thousand Oaks, California. 219 pp.