

Establishing and Agreeing on Research Priorities

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The organizers asked me to share with you my experiences in developing and implementing a process for establishing and agreeing on research priorities in a multi-stakeholder research institute such as Forintek.

The mechanism we have in place has been well received by Forintek's membership and certain aspects have been adopted by other research organizations. While we are pleased with developments to date and the strong commitment of employees, priority setting has been, and will continue to be, an evolutionary and iterative process with opportunity for future improvement. Also, our approach may not be appropriate for other organizations because of differences in mission, governance, and client base. For these reasons I have decided to take an anecdotal rather than a prescriptive approach in this presentation.

Forintek Canada Corp. is a private, non-profit research institute—Canada's national wood products research institute. Established in 1979, it is an industry-government partnership. This year our National Research Program is valued at Cdn \$10.5 million and our contract portfolio is expected to be Cdn \$8.8 million. Our staff of 185 is located in laboratories in Vancouver, British Columbia, and Sainte-Foy, Quebec. As well, we have a fire research group in Ottawa, Ontario, and a regional office in Edmonton, Alberta. Also in Edmonton is the Alberta Research Council, a key member of Forintek's Composites Research Consortium.

New partnerships are under development with the Saskatchewan Research Council and the University of New Brunswick's Wood Science and Technology Centre.

Forintek's National Research Program is the "raison d'être" of the partnership and is funded entirely from membership assessments based on the principle of shared costs, shared risks, and shared benefits. The partnership presently comprises 155 wood products companies from across Canada, five provincial governments, and the Government of Canada.

As Canada's national wood products research institute, we carry out research in the following areas: resource quality characterization; advanced manufacturing of lumber and composites; drying and protection; and building systems, which includes research on markets and codes and standards. We are involved in each step of the value chain—from the resource through to the marketplace. Our Sainte-Foy and Vancouver laboratories are good examples of wood use in industrial and commercial construction, using engineered wood systems.

When I joined Forintek in 1992, the framework for establishing priorities in the National Research Program was already in place through various advisory committees representing government and industry members. Meetings were infrequent and there was considerable cynicism among the membership about the effectiveness of the process. This had led to the recent resignation of a major company and several more were considering the same action.

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Obviously, quick action was required. The root of the problem was around the following four concerns:

- consultative but not responsive;
- lack of urgency in getting out results;
- confusion about vision and direction; and
- lack of client focus and accountability.

I have seen similar concerns expressed by other research advisory boards I have served on in government and university. Forintek undertook quick and deliberate actions to address these issues:

- dedicated manager for the process;
- integration in strategic and operational plans;
- performance measures tied to employee performance and compensation;
- focus on timeliness, relevance, and quality;
- member feedback and follow-up; and
- clear vision and direction developed by members and staff.

To put teeth in Forintek's planning framework and to ensure clear division of responsibilities, we engaged the involvement of our members, starting with the Board of Directors. The Board formally set up the National Research Program Committee (NRPC) and made it responsible for setting the strategic direction of the research program, establishing overall priorities and allocating resources amongst the five program areas.

The five Technical Advisory Committees (TACs), which coincide with the five program areas, were made responsible for project prioritization and selection, as well as monitoring progress and technology transfer of results. The NRPC and TACs have broad-based representation from the membership. There are approximately 260 members involved in the process.

Each project must be approved by the TAC. The project leader is required to present his proposal and briefly address "what" is being done, "when" it will be transferred, and "what" will be the impact on the members. Each approved project is assigned one or more liaisons to assist the scientist during the course of the research and to facilitate the application of the results. Progress is reviewed quarterly.

Establishing and agreeing on research priorities is the first and most important step of research management that includes execution, monitoring, technology transfer, adoption, and evaluation. At Forintek, we have adopted a "co-producer" approach to deal with this. It involves our government and industry members and Forintek scientists in each of these activities. This involvement by members engenders a level of ownership that is essential to maintaining credibility of the process and for the continuing support of the membership.

The specifics of priority setting for an organization accountable to membership with very diverse needs and priorities—federal and provincial governments, large fully integrated companies, and small operations—are shown in figure 1.

Using a strategic planning approach, we were successful in getting consensus on the major challenges driving change in wood products and agreement that science and technology could play a very useful role in turning these challenges into competitive advantage for Canadian producers. Our challenge was to get agreement on where we should be spending scarce research dollars.

Member Needs and Priorities

Industry

- Low Cost Fibre
- Low Cost Producer
- Market Access
- Demanding Customers

Federal Government

- Market Access
- Sector Competitiveness (Jobs)
- Environmental Issues

Provinces

- Maximize Value of the Resource (Rent)
- Job Creation
- Environmental Issues

Figure 1—Priority setting.

The process turned out to be an exercise in compromise and consensus. Provinces placed high priority on hardwood research; the federal government on environmental comparability of building materials and performance of light-frame structures; and the small and large manufacturers had different priorities in composite and lumber manufacturing. Some cases where agreement could not be reached were eventually handled outside the National Research Program under contract. For each priority area, the TACs agree to program goals to help focus research ideas for each of the five areas. A portfolio of projects is developed to specifically address each goal. Approximately 90 projects are carried out in any given year.

In the past, the research program had been generally biased toward shorter-term problem solving, with a focus on cost minimization and market access. Recognizing the short-term bias, we decided to go through a second planning process—a “top down,” “big picture,” and global approach to reassess needs and priorities. The Board, NRPC, and senior management met to consider the principal drivers, trends, and predictions that would impact on all sectors over the next 10 to 15 years and examine how some trend-setting companies were meeting these challenges.

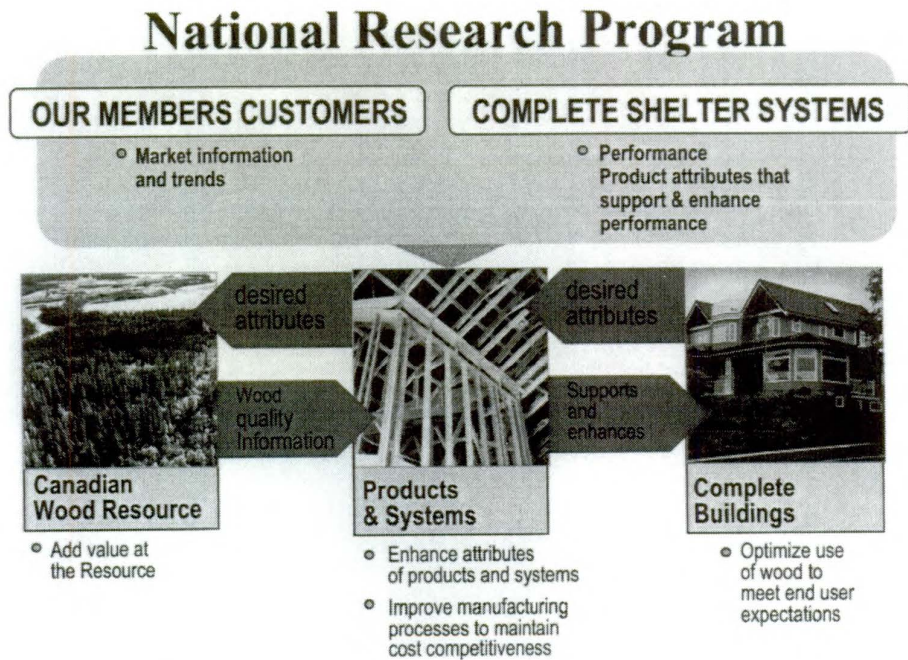
We concluded that the electronics and information revolutions would continue to be the most significant influences in the global economy. These revolutions are changing the rules for doing business. We examined companies that had demonstrated the capacity to successfully adapt to the new rules (for example, WalMart, Canon, 3-M, Toyota).

We identified four business strategies that were relevant to the forest products sector and they became the drivers of our new research strategy (figure 2). The new research strategy focuses on our members' customers, not only on our members; on building products, systems, and structures; and on all the product attributes and qualities of solid wood products which are demanded in the market place (such as a holistic approach). As a result, our focus shifted from “maximizing” to optimizing” wood usage. The new program foci are:

- Optimize use of wood to meet end-user expectations.
- Enhance attributes to products and systems.
- Improve manufacturing processes to maintain cost competitiveness.
- Add value at the resource.

Significant emphasis is placed on adding value at each step in the value chain, and on the effective use of technology and knowledge of the market,

Figure 2—Forintek's new strategic directions.



resource and manufacturing processes. The focus is now on the longer-term needs of the sector.

Over the last two years, we have realigned research program goals to fit the new direction; for example, Building Systems is guided by the first two program foci above. We now have a more appropriate balance between the short- and the longer-term needs of the industry. In addition, the new direction has enabled us to embark on a new value-added initiative and a new market attribute program. To identify needs and establish our research priorities we utilized two different planning processes. Members and staff were intimately involved in both, which is consistent with the co-producer approach used at Forintek.

To maintain credibility with members and ensure their continued involvement in the planning process, the organization has placed considerable emphasis on client focus and accountability for the timely delivery of cost-effective, relevant, and high quality research results. Corporate accountability for all aspects of the National Research Program, including priority setting, is captured under the client focus, financial sustainability and excellence goals of the Strategic Plan and annual Operating Plan. Employee accountability is built into the job descriptions, and performance and compensation systems. The job descriptions and the annual objectives of each employee are built around the same three goals.

In conclusion, the National Research Program is guided by a framework and series of processes that are captured in the Strategic Direction, the Strategic and Operating Plans, our human resource management systems, and the annual program of work which spells out the “what,” “how,” and “when” for each project.

Generally, we have been satisfied with the results we have achieved in this challenging aspect of research management and with the positive reactions we have received from our very diverse client base. We recognize that our process could be further improved, but I hope I have given you some ideas that could prove useful to your organization.