



## Forest industry Sophie D'Amours: preventing logjams

**Backed by an international-calibre research team at Laval University, Sophie D'Amours is reinventing the forest industry using high-tech solutions and cutting-edge business models aimed at countering competition from the emerging countries through increased productivity and innovation.**

- » Bachelor's in mechanical engineering, Laval University
- » Master's in business administration, Laval University
- » Ph.D. in applied mathematics and industrial engineering, Montreal Polytechnic School (EPM)
- » Professor, Department of Mechanical Engineering, Laval University
- » General manager, FORAC
- » Co-director, Interuniversity Centre for Research on Business Networks, Logistics and Transportation (CIRRELT)

Sophie D'Amours has taken on a pioneering role in the field of forest product management as a professor in Laval University's Mechanical Engineering Department and as general manager of the FORAC Forest to Customer research consortium, which she helped found in 2002.

Thanks to FORAC, solutions devised in Quebec City are being used to process and distribute forest products more efficiently, thereby reducing costs, inventories and delivery times. Applying a wide array of information and decision-making technologies, these new business models also tap into the industry's existing logistical supply chains.

### Doing things differently

The results speak for themselves: a software program designed to manage collective transportation for sawmills via a Web-based link has cut costs by 10% by optimizing routes and eliminating empty runs.

Similarly, Web-intensive approaches in the furniture industry emphasize innovative and distinctive "made-in-Quebec" solutions.

"We realize that Quebec can't compete with the emerging countries using the same products and the same machines due to differences in our labour forces, social benefits and infrastructure. Are we going to beat the Chinese if we try to produce the same newsprint using the same technology? No. We have to do things differently," says Dr. D'Amours, who was raised in Sherbrooke and Quebec City.

The impressive FORAC team includes professors from a variety of disciplines, including forestry, computer science, strategic management and industrial engineering, as well as professional researchers, all striving to develop up-to-the-minute business models.

In addition, some 20 PhD candidates from China, Tunisia, Morocco, Brazil, Chile, France and Rwanda are busy developing new competitive methods.

## Spearheading the revolution

Dr. D'Amours' projects serve as benchmarks for other countries with vulnerable forest industries, including Sweden, Finland and Chile, where she is regularly asked to speak at conferences.

She has also convinced leading forest companies, sawmills and furniture makers to join her operational revolution. Kruger, AbitibiBowater, Domtar and Maibec have already signed on, contributing 40% of FORAC's financing.

"We have to stop thinking that business is based solely on common sense," says Dr. D'Amours. "Yes, we need people with good judgment, but conducting business on the present scale is a science. Five years ago, hiring someone with operational research skills to work at a software lumber company was unheard of. People are now realizing that they need to incorporate these kinds of resources."

## Distinctions

FORAC's \$1.3 million budget is funded by private firms, the Natural Sciences and Engineering Research Council of Canada (NSERC), the Government of Quebec and Laval University. Funding has been secured until 2012 thanks to FORAC's long list of distinctions, including the Canadian Operational Research Society's Practice Prize (2007) and a variety of awards recognizing the high quality of its research projects.

"I take great pride in the fact that more than 150 students and research professionals have received training at FORAC," notes Dr. D'Amours.

## Shaking things up in Quebec

Recently appointed co-director of the Interuniversity Research Centre on Business Networks, Logistics and Transportation (CIRRELT), Dr. D'Amours is leading a group made up of 80 professors and researchers and more than 300 graduate students from five Quebec universities. "In all sectors of the economy, a new productivity approach is needed based on skills, knowledge and advanced planning and production systems," she says.

## Call for talent

According to Dr. D'Amours, Quebec must aim to derive maximum benefit from its natural resources. "We have to attract talent. Our young people have a key role to play in the science and technology field. We must make them aware of the task at hand, and they in turn must be eager to take up the challenge. They have the ability to change things, and we must let them know that."

