



## Commercialized Technologies

PROJECT (University)	DESCRIPTION	INDUSTRY PARTNER	IMPACT (as of March 2002)
Clot Washing (McMaster University)	Displacement wash additive that has a defoaming and drainage aid capacity	Dorset Industrial Chemicals	Led to Channel Bloc®, a commercial defoamer applied in mills across Canada and abroad, with sales exceeding \$2 million per year for the past 10 years.
Fibre Quality Analyzer (University of BC/Paprican)	Rapid imaging of fibres in a stream to measure key characteristics: length, curl, kink, coarseness and percentage of fines	OpTest Equipment	Over 100 units sold; about 2/3 export. Five new positions were created at OpTest.
Improved Chelation (University of New Brunswick)	Sodium hydrosulphite (Na <sub>2</sub> S <sub>2</sub> O <sub>4</sub> ) assisted DTPA chelation to improve transition metal removal	Irving Paper	About \$10/tonne savings for high brightness product resulting in savings in excess of \$1,000,000 per year.
Paper Formation Software (McGill University)	Algorithms for characterizing paper formation quality as a function of scale incorporated in the Paper PerFect™ Formation Analyzer	OpTest Equipment	11 Analyzers sold. Sub-licensed software embedded in 15 Lorentzen & Wettre automated testing systems.
Control Loop Monitoring (University of Alberta)	Control-audit tools, ProcessDoc™, which monitor the performance of control loops	Matrikon	Several site licences sold to international corporations. Ten engineers employed in installation and maintenance of ProcessDoc™. Matrikon is the major sponsor of the Industrial Research Chair at the University of Alberta.
Adaptive Control (University of BC)	Model-based adaptive controller, BrainWave™, for industrial processes.	Universal Dynamics	Sales over \$4.5 million per year, 90% US, 20 new jobs. \$400,000 R&D budget, on-going UBC collaboration.
Dissolved Solids Analyzer (Lakehead University)	Instrument measures total organic and inorganic dissolved solids in whitewater.	Alberta Research Council, Aquantix	Enterprise unit established for commercialization. Nine units sold. Substantial improvements in process efficiency.

## Mechanical Wood-Pulps Network

ACHIEVEMENTS 1990 - 2002

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Networks of Centres of Excellence

# Mechanical Wood-Pulps Network

## PARTNERS

- 16 Universities
- Paprican
- National Research Council Canada
- 46 Faculty Researchers
- 32 Industry Affiliates
- Provincial Governments: British Columbia, Ontario, Quebec

## ACHIEVEMENTS

The Network was instrumental in establishing new Pulp and Paper Centres at the University of New Brunswick and at McMaster University. Existing Pulp and Paper Centres at the University of Toronto, University of British Columbia, McGill University and Université du Québec à Trois-Rivières were expanded to incorporate Network programs. Moreover, the Network attracted to its ranks many university researchers who were new to the pulp and paper sector. These scientists and engineers brought world-class expertise in their particular disciplines and applied fresh approaches and insight to solving challenging pulp and paper problems.

The Network made significant progress in advancing the body of knowledge about mechanical wood-pulps and developed innovative technologies to overcome the barriers that have restricted their use in papermaking.

- over 600 scientific papers published
- 14 patents filed
- 3 Synergy Awards for outstanding university-industry R&D partnerships

The Network trained 155 MSc, 58 PhD and 77 Post-doctoral Fellows. Of this total, 198 were employed in Canada and 88 of these were employed by the Canadian pulp and paper industry.

## CONTRIBUTIONS

Cash & In-Kind  
(in millions)

■ NCE	\$35.2
■ Paprican	\$46.7
■ Industry & Other	\$ 3.5



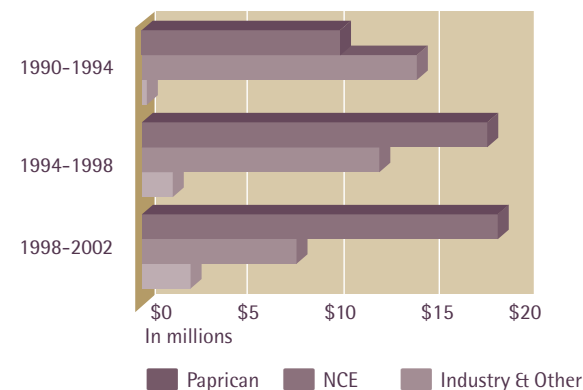
## Some noteworthy achievements:

- advanced understanding of chip refining
- new mechanism for yellowing of mechanical pulps
- demonstrating an effective yellowing inhibitor on a commercial paper machine
- optimizing pressure screens and hydrocyclones for fibre fractionation
- characterizing repulpers for recycling newsprint
- validating the theory of dewatering in blade gap formers
- modeling and control of the wet-end of paper machines

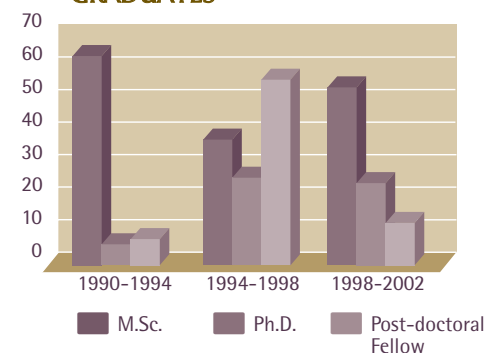
Technologies commercialized from Network-supported collaborative research generated over \$30 million in sales and created some 35 jobs.

The Networks of Centres of Excellence (NCE) Program is a federal initiative administered jointly through the Natural Sciences and Engineering Research Council (NSERC), the Canadian Institutes of Health Research (CIHR) and the Social Sciences and Humanities Research Council (SSHRC) in partnership with Industry Canada.

## CONTRIBUTIONS



## GRADUATES



## CANADIAN EMPLOYMENT

