



# Center for Paper Business and Industry Studies

Annual Report to the  
Alfred P. Sloan Foundation

October 16, 2002

# Center for Paper Business and Industry Studies

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## *I. Current Year Results*

During the past year, we have:

1. Made significant progress on each of the seven research projects initiated during the latter part of 2001 and in each case have produced preliminary deliverables, including:
  - a. Extensive archival research aimed at establishing historical links between corporate policy and performance;
  - b. A model-based analysis of the economic impact of using biotechnology to alter specific wood traits;
  - c. Analysis, modeling and successful prediction of linerboard price behavior;
  - d. A survey to create a database for increased understanding of factors determining success of the industry's implementation of modern work systems;
  - e. A survey to benchmark the industry's current global supply chain practices, as a basis for improvement recommendations;
  - f. Development of an activity-based cost and environmental management model of an operating newsprint mill, for linking with a mass and energy balance model to optimize system performance;
  - g. Development of background information and an interview protocol to characterize and understand the performance of maintenance, repair and operations supply chain systems as a basis for identifying and implementing improvement initiatives;
2. Engaged industry personnel in planning the research activities that have led to each of the above developments and developed plans for primary data collection by each project team;
3. Identified research needs by soliciting concept papers from industry and academe and used the results to craft and issue a request for new research proposals;
4. With the help of a panel of qualified reviewers, and a committee of industry and academic representatives (the Research Operations Committee), evaluated a slate of 10 new proposals and selected three multidisciplinary projects for funding, namely:
  - a. An assessment of the properties, potential applications, economics and marketing opportunities of the universe of market pulps currently available;
  - b. A cross-industry study, joint with the Sloan Trucking Industry Program, to identify and evaluate alternative business models satisfying box plant trucking logistics needs;
  - c. An investigation of the external economic, environmental and social benefits of the coming adoption by the industry of a new chemical recovery technology;
5. Continued to organize activities that create awareness of the CPBIS, the paper industry and the needs of the paper industry on the Georgia Tech campus and awareness of the

- importance of business aspects of the industry on the IPST campus, including seminars, coursework and meetings of CPBIS investigators;
6. Developed and conducted two new courses for Georgia Tech and IPST students during the 2002 Spring and Fall semesters, namely,
    - a. “Studies in American Manufacturing – Pulp and Paper” (Spring 2002)
    - b. “Process Management in Paper and Processing Industries” (Fall 2002)
  7. Established an ongoing series of forums, the “Rethink and Discovery” series, to foster a dialog that will ultimately make it more clear how the industry should redefine its core technologies to get at the root of its financial problems;
  9. Strengthened already-established vehicles for creating global awareness of the CPBIS mission, objectives and activities, including the Center’s Web site and its newsletter, and went one step further by adopting and successfully implementing a system for Webcasting CPBIS seminars, meetings and conferences;
  10. Developed a Distinguished Guest Lecture Series featuring six speakers of renown, and prepared and distributed brochures to promote and publicize it; and
  11. Developed a paper industry oriented Management Development Continuing Education Program that will be offered on the Georgia Tech Campus in March 2003.

## ***II. Statement of Impact***

The industry and the involved universities recognize the importance of the issues that CPBIS was formed to address and believe that we are capable of responding to those needs. As evidence of this, we may point to the strong industry support we have received, in the form of both financial contributions and participation on our Advisory Board, Operating Committees and Project Liaison Panels. Similarly, strong support has been forthcoming from IPST, in the form of financial and in-kind contributions, and from Georgia Tech, which has granted tuition waivers and whose Vice Provost and Deans participate as members of our Executive and Advisory Boards.

We have caused 30 world-class faculty members and 23 graduate students to turn their attention to paper industry issues by participating in industry-related research as principal investigators and co-investigators. Their projects address issues identified by the industry as being highly relevant and, though as yet still in progress, show early promise of having significant impact.

We are bridging gaps between diverse bodies that together have the potential to leverage CPBIS efforts. We have brought representatives of industry associations, academic units, producers and suppliers to the same table to engage in discussion and debate of such matters as the Industry’s needs for continuing education, its most pressing research issues, and how it needs to transform itself for improved performance.

### *III. Data*

#### 1. PREAMBLE

Data are provided in the form of an augmented version of the table of metrics shared with the Sloan Foundation at the time of establishment of the Center.

**Research:** The research program is even larger than we had originally envisioned and, as earlier mentioned, employs 30 faculty and 23 graduate students. Deviations of the metrics from their target values are generally positive or represent only modest shortfalls. Full implementation of the research program took somewhat longer than anticipated, since we deemed it worthwhile to implement a set of thorough proposal review and project selection protocols. This accounts for our apparent shortfall in course modules and reports made available to other campuses.

**Education:** Extensive involvement of students in CPBIS research underpins our educational effort. In addition, we have completed two successful course offerings to small classes of graduate students. Both courses received very good student evaluations. Finally, our seminar programs and symposia have attracted considerable student interest.

**Continuing Education:** During our first year of operation, it became apparent that there existed opportunities for synergistic interaction with paper industry CE initiatives already being undertaken by paper manufacturers, industry associations, and educational institutions. In addition, an American Forest & Paper Association Agenda 2020 task force had convened to make recommendations on developing a Technologically Advanced Workforce for the paper industry. The task force commissioned CPBIS to lead a combined effort to conduct a broad-based needs assessment study to identify knowledge and skills needs of the industry in technical and business management areas. Unfortunately, not all of the organizations that originally agreed to contribute to this effort followed through and it has not been possible to get a coordinated effort underway. We have recently solved this problem by adopting an alternative approach that is based on an alliance with one of the participating organizations, the Paper Industry Management Association. As part of this new approach we will offer a Management Development Course next March.

**Interactions With Industry and Other Entities:** Our interaction with industry and other entities has been more extensive than indicated by the data in the table. The data reflect mill tours, meetings with industry associations and the industry's chief labor union. In addition, however, we have engaged industry people in intensive reviews of research proposals through their membership on project selection committees. Many others have participated in the proposal review process. Perhaps most importantly, we have formed industry liaison panels (ILPs) for each of the ten projects. Each ILP is charged with providing advice, reviewing survey instruments and interview protocols, and facilitating access to industry installations..

Industry is represented on CPBIS operating committees for research, academic affairs and continuing education, and industry representatives make up almost the entire membership of the Industry Advisory Board, charged with monitoring and guiding CPBIS activities. In addition, we have engaged in interactions with other universities, including the University of Georgia and Montreal's Ecole Polytechnique, and with other Sloan Industry Centers. We have



## ***Center for Paper Business and Industry Studies***

a joint research program with the Trucking Center and we have had extensive discussions with the Steel Center. The number of individual industry site visits is below target, partly as a result of the later-than-anticipated start of the projects and partly because we are still learning how to work out suitable arrangements with the firms to be visited. Increasing the number of site visits is a CPBIS priority for the coming year.



**2. EDUCATION**

GRADUATE DEGREE PROGRAMS	Targets		
	Year 1 Oct. 00 – Sept. 01	Year 2 Oct. 01 – Sept. 02	To Date (Sept. 02)
• Number of Ph.D. Students Enrolled	2-4	4-6	5 + 4*
• Number of Ph.D. Degrees Awarded	0	0	0
• Number of MS Students Enrolled	4-6	6-8	7 + 7*
• Number of MS Degrees Awarded	0	4-6	1
• Quality of jobs for Ph.D. and MS Graduates	N.A.	N.A.	No Data
• Evidence of Progress for Those on Academic Career Paths	N. A. in Years 1-3		
RESEARCH	Year 1	Year 2	To Date
• Number of Research Projects In Progress	3-5	5-7	10
• Number of Graduate Students Involved in Research	6-10	10-14	23
• Number of Faculty Involved in Active Research	7-10	11-14	30
• New Research-Based Course Modules (3 Contact Hours Each)	0	1-2	0
• Research Workshops (GIT & IPST Faculty)	1-2	3-4	2
• Center Sponsored Research Conferences	1	1	4**
• Center Sponsored Research Seminars (60 mins +/-)	4-6	4-6	19
• External Research-Based Presentations (Conferences)	2-3	4-6	6
• Research Papers Accepted in Academic Journals	0	0-1	1
• Research-Based-Books	0	0	0
• Research-Based Course Modules (3 h) Made Available to Other Campuses	1-2	3-5	0
• Research Reports Made Available to Other Campuses	0	4-7	0
• Assessment By Industry Advisory Group	Good to Excellent		
• Assessment By Operations Coordinating Group	Good to Excellent		
CURRICULUM	Year 1	Year 2	To Date
• New Courses Introduced To Date	1-2	2-3	2
• Educational Modules (Independent of Center Research)	4-6	8-12	0
• Number of Teaching Faculty (Course Equivalents)	2-3	4-5	2
• Course Assessment By Students	Good to Excellent		3.3/4;3.2/4 <sup>§</sup>
• Assessment By Industry Advisory Group	Good to Excellent		
• Assessment By Operations Coordinating Group	Good to Excellent		
CONTINUING EDUCATION	Year 1	Year 2	To Date
• New Programs (Short Courses, Exec. Ed., Dist. Learning)	2-3	4-6	0**
• Number of Teaching Faculty	6-9	12-18	0
• Course Assessment By Students	Good to Excellent		
• Assessment By Industry Advisory Group	Good to Excellent		
• Assessment By Operations Coordinating Group	Good to Excellent		

See footnotes below section on following page of Metrics Table



**3. INTERACTIONS WITH INDUSTRY AND OTHER ENTITIES**

<b>INDUSTRY INTERACTION</b>	<b>Year 1 Oct. 00 – Sept. 01</b>	<b>Year 2 Oct. 01- Sept. 02</b>	<b>To Date (Sept. 02)</b>
• Number of Industry Site Visits	30-50	50-70	17***
• Number of Industry Sites Visited	10-15	15-25	9
• Number of Different Companies Visited	15-20	15-20	7
• Number of Articles in Trade Press	6-10	10-14	Several <sup>§§</sup>
• Number of Presentations to Industry Associations	5-8	8-12	4
• Evidence of Contribution Quality			
• Contract Research Funding by Industry	\$50K	\$100K	0
• Funding by Industry Members	\$250K	\$350K	\$563K
<b>INTERACTION WITH OTHER ENTITIES</b>	<b>Year 1</b>	<b>Year 2</b>	<b>To Date</b>
• Number of Presentations, Testimonies, etc. for Govt. Agencies	2-3	4-6	2
• Funding from Government Sources	0	\$25K	0
• Funding from Other Sources	0	\$25K	0
• Visits <b>With</b> Other Sloan Industry Centers	3-5	3-5	Several
• Visits <b>With</b> Industry Labor Unions	3-5	3-5	2
• Visits <b>With</b> Industry Associations	3-5	3-5	Several

\*No. committed to using CPBIS research in dissertation + No. not yet committed

\*\*Two panels plus two half-day “Rethink and Discovery” sessions

\*\*\* Approx. 100 if group tours are included

§Score in GPA terms as overall rating and composite instructor rating, respectively

§§Including 14 news items and press releases on Forestweb, as well as items published in Solutions, Pulp and Paper Canada, and daily publications of the Paper Summit and PIMA Annual meetings.



**4. INDUSTRY FINANCIAL SUPPORT**

The CPBIS has enjoyed very healthy funding support from the paper industry from the outset. These commitments amount to nearly \$1.1 million USD for base funding over the first three years of the Sloan Grant period. This level of commitment toward a totally new and untried organization such as the CPBIS in view of the economic times of the Paper Industry is truly remarkable. Note the following summary of financial commitments for the first three years base funding and the amounts remitted to date.

2001		2002		2003		Three Year Commitment Total
Commitment	Paid	Commitment	Paid	Commitment	Paid	
337,000	(317,000)	351,000	(246,000)	356,000	(0)	1,044,000

The balance of 2001 and 2002 commitments is planned for remittance prior to the end of the 2002 calendar year.

The total paper industry contribution for the first two full years of the CPBIS operations then total:

- Sponsorship Funding = \$ 688,000
  - Direct Funding for Proposal Process = 90,000
  - Direct Supplemental Programs Funding = 35,000
  - IPST Facilities & Services Support = 630,000
- 2001-2002 Total Industry Funding = \$1,443,000*