Barriers to Innovation

Georgia Tech study finds industry innovates in supply chain and business processes

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The pulp and paper industry in the state of Georgia is hearing both good and bad news from a unique study conducted by Georgia Tech's Enterprise Innovation Institute and School of Public Policy, and the Georgia Department of Labor.

Approximately every two years, these organizations survey all manufacturers in Georgia. They develop benchmark information to help companies in the state be more competitive, and improve state business and technology services to the industry.

Due to efforts by the Center for Paper Business and Industry Studies (CPBIS), for the first time this survey was specifically designed to gather responses from Georgia's pulp and paper industry. Drs. Jan Youtie, principal research associate at Georgia Tech's Enterprise Innovation Institute and an adjunct associate professor in Tech's School of Public Policy, and Philip Shapira, a professor in the School of Public Policy at the Georgia Institute of Technology, designed and oversaw the survey process.

Survey questions investigated the use of technology and knowledge in Georgia's paper manufacturing sector, and identification of business and policy issues affecting technological adoption and innovation. No other state conducts a similar survey.

Survey results found that pulp and paper manufacturers were more likely than other Georgia manufacturers to innovate through supply chains or business processes than through approaches relying on knowledge-based intellectual property (See **Figure 1**). Survey respondents also indicated that there were significant barriers to innovation (See **Figure 2**). Compared with

More online: For complete survey results, visit www.cpbis.gatech.edu/research/finding/Dimensions_of_Innovation_Shapira.pdf.

Steps to Innovation

Results of the Georgia Tech survey were presented at the TAPPI Spring 2006 Papermakers conference, after which several informal interviews were conducted with industry professionals who highlighted some of the approaches industry is taking to encourage greater innovation, including:

- Tighter relationships with universities.
- Improved ideation processes.
- Increased emphasis on alternative new product development.

However, these efforts were found to be challenged by:

- Intellectual property constraints.
- The need for near-term returns rather than a future pipeline.
- Incentives that emphasize productivity over trial runs of new products.
- Lack of capabilities for innovation on the shop floor.

For more survey information, contact Jan Youtie at jan.youtie@edi.gatech.edu or Philip Shapira at philip.shapira@pubpolicy.gatech.edu.

Figure 1.

Innovation Type by Industry Group

Industry Groups	Mean Factor Scores: Intellectual Property	Supply Chain	Business Operations
Pulp and Paper	-0.39	0.41	0.31
Other Materials	-0.22	-0.15	-0.02
Food/Text.	-0.17	0.10	-0.03
Metals/Mach	0.02	-0.02	-0.11
Elec./Trans	0.52	0.16	-0.01
Science	0.97	0.08	0.29
Significance (pulp & paper vs. others)	*	*	

Source: J. Youtie, et. al. (2005) Innovation in the Pulp and Paper Manufacturing Sector. Note: Based on the Georgia Manufacturing Survey 2005.

Figure 2.

Barriers to Innovation - % High Importance

	Pulp and Paper	Other Industries
Lack of qualified personnel	20%	12%
Lack of funds, costs too high	20%	14%
Market dominated by established companies	14%	16%
Uncertain demand for innovative goods or services	7%	16%
No demand for innovations	7%	5%
Lack of info on markets	6%	10%
Lack of information on technology	5%	2%
Difficulty finding partners	4%	3%
No need due to prior innovations	4%	9%

other industries, the lack of skilled workers, funds and high costs were limiting innovation within these firms.

Youtie and Shapira concluded that innovations in supply chain and business processes had enabled pulp and paper manufacturers to compete in the short run. However, long-run competitiveness may require a different, knowledge-based innovation structure.

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