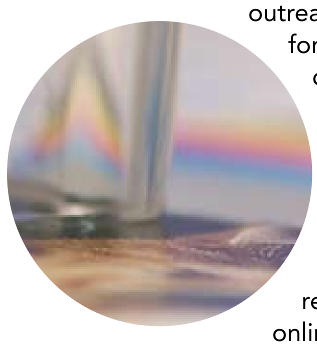
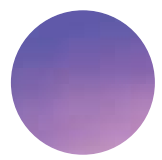
about the Center

Rochester Institute of Technology (RIT) was selected by the Alfred P. Sloan Foundation in 2001 to become one of the Sloan Industry Centers, now numbering 22. The Printing Industry Center at RIT is a joint program of the School of Print Media and RIT's College of Business, emphasizing Sloan's long-standing tradition of applying a broad multidisciplinary approach to industry investigations and findings.

Dedicated to the study of major business environment influences in the printing industry brought on by new technologies and societal changes, the Printing Industry Center at RIT addresses the concerns of the printing industry through educational outreach and research initiatives. The Center creates a forum for printing companies and associations worldwide to access a neutral platform for the dissemination of knowledge that can be trusted by the industry, to share ideas, and to build the partnerships needed to sustain growth and profitability in a rapidly changing market.



More information on the Printing Industry Center at RIT and its research activities can be found online at http://print.rit.edu.



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about the PrintReview

The PrintReview is produced quarterly exclusively for Affiliates of the Printing Industry Center at RIT. Membership is free upon request. To register, go to: http://print.rit.edu/affiliates/ or call 585-475-4231.

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Lean Manufacturing
continued

certification. The most common computer-based systems among firms of all sizes are management information systems and scheduling systems.

Only 25% of smaller firms have cost reduction goals for the future, while more than 65% of larger firms do. Prepress is seen as the area of greatest opportunity for cost reduction. Firms of all sizes believe that there is a gap between what they know about CIM, lean manufacturing, competitive benchmarking, quality control/assurance, and specific technologies like JDF, and the importance of these factors to their future profitability.

New technology and management strategies are perceived by both large and small firms to offer the best way to improve operating efficiencies. More than 80% of smaller firms and nearly 90% of larger firms acknowledge the importance of CIM to their future profitability. Firms of all sizes also place a high value on improved information for the sales force.

Conclusion

The primary challenge for the industry remains the improved efficiencies of manufacturing and distribution, while at the same time offering service that will help customers achieve their ultimate goals. This challenge remains a barrier to the implementation of CIM and lean manufacturing in U.S. printing firms.

The lean manufacturing goal of process efficiency is applicable to companies of all sizes. Though smaller companies are less likely to invest time and resources in the comprehensive approach to manufacturing cost reduction than larger ones, they still can benefit greatly from a working knowledge of lean practices in the print-manufacturing context.

on the Web — *view the full research monograph online at:* http://print.rit.edu/research/

R·I·T Printing Industry Center

printreview

[for Affiliates of the Printing Industry Center at RIT] Volume 1: September 2004

this quarter in:

news

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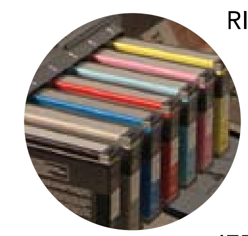

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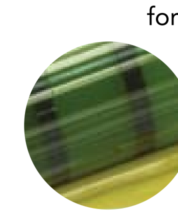

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upcoming events

RIT Print Sciences Seminars

We are pleased to announce a new series of free seminars offered by the RIT School of Print Media (SPM). Presented by SPM faculty, these hour-long seminars on the RIT campus will showcase some of the current research activities being undertaken in the school.

Fall Series:

September 17, 2004
Film Formation Dynamics and the Interaction Between UV Curable Inks and Polymeric Supports
Presented by Dr. Scott Williams, RIT

October 15, 2004
Digital Imaging Within Cultural Institutions
Presented by Dr. Franziska Frey, RIT

November 12, 2004
Investigations into the Physical Properties of Ink and Paper
Presented by RIT School of Print Media Graduate Students

For More Information, Contact:
Dr. Scott Williams, Professor, School of Print Media, Rochester Institute of Technology, sawppr@rit.edu.

Personalized Printing and Customer Relationship Marketing (CRM) Systems

While the corporate marketing executive has a profound influence on the selection of media used in advertising, RIT's study entitled "Marketing Communications Demand Creation: Marketing Executive Study" goes on to take a hard look at customer relationship marketing (CRM) systems. These systems are designed to allow the customer to communicate via any desired channel. The implementation of CRM solutions is the infrastructure catalyst that will drive the growth of personalized digital print solutions. Besides a relationship marketing strategy itself, the marketing executive needs the appropriate customer information to support it, and the customer's perception that print will be effective versus other forms of marketing media.

continued on page 3

this quarter in:

research

Experimental Environmental Programs in the Printing Industry

The ways in which the government has managed the environmental impacts of small printers have evolved over time. Prior to the 1980s, environmental agencies were lenient in their regulation of smaller firms. But as larger, more regulated firms started to reduce their pollution and better manage their environmental

continued on page 2

Digital Integration and the Lean Manufacturing Practices of U.S. Printing Firms

The acquisition of new printing technology in the absence of a disciplined approach to process analysis and sound strategic planning can sometimes lead in the wrong direction—to increased costs and eventual failure. Successful printing companies

continued on page 3

How Marketing Executives Influence the Demand for Personalized Printing

The demand for personalized printed marketing materials is influenced by two important types of print customers: the marketing executives of manufacturing or service firms, and advertising agencies that help them plan their communication strate-

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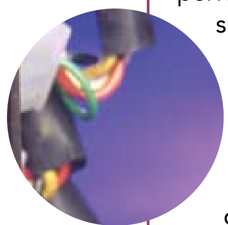
Environmental Programs *continued*



performance, regulators realized that smaller firms could have a significant impact on the environment, and could no longer be ignored.

It was assumed that small firms could adopt the new pollution prevention practices if they simply had access to technical information about them. As a result, the 1990s brought about an explosion of new environmental technical assistance programs at the national, state, and local levels. These were designed to promote pollution prevention and compliance with environmental regulation through a variety of mechanisms.

However, in a recent Rochester Institute of Technolgy (RIT) study,"The Evolution of Experimental Environmental Programs in the Printing Industry" (PICRM-2003-03) by Sandra Rothenberg and Monica Becker, many printers reported that they do not consider either state or federal government programs to be useful sources of environmental information. Instead, other companies—such as suppliers or competitors, trade associations, and customers—are considered more influential.

Government Agencies Not Useful

Respondents to a survey were asked about specific organizations that provide information about environmental technologies. (These programs include: the Printers Simplified Total Environmental Partnership, or PrintStep; EPA Design for the Environment; the Great Printers Project; NEWMOAs PP Information Dissemination Project, or P2Print; and the Printers National Environmental Assistance Program, or PNEAC.) For all programs other than the Graphic Arts Technical Foundation (GATF), one third to one half of the respondents reported that they were unfamiliar with the organization in question. In other words, a significant percentage of the industry has no knowledge of the environmental programs targeted specifically to them.

In addition, of those familiar with the programs, 60 to 84% indicated that they were "not at all useful." Again, GATF was the exception, with only 28% of respondents indicating that GATF's environmental information is not useful.

A surprising 45% of firms responded that they were not familiar with PNEAC, which is supported by a partnership between GATF, the EPA, university-based technical assistance programs, and PIA (the Printing Industries of America). The respondents who were familiar with PNEAC, however, reported that it provided the most useful information, compared to all the other environmental information dissemination programs, including GATF's.

If Not the Government, Then Who?

Government is still seen by most firms as hostile, though this view is changing in some circles. Regulators now realize that they are not often viewed as the most credible sources of information, so partnering with other sources, such as trade associations, can be one way to increase their credibility. This is evidenced in the satisfaction of almost all the printers in the RIT study who are familiar with and rely on PNEAC.

Conclusion

Until firms feel that they are not in danger of being found in violation of regulations, they will typically be unwilling to work with government partners on proactive pollution prevention. There are several programs emerging, such as The Massachusetts Environmental Results Program and New Hampshire PrintStep, that are experimenting with alternate forms of regulations (such as self-certification) for small printers.

on the Web *view the full research monograph online at:* **http://print.rit.edu/research/**

Marketing Execs *continued*

gies. The Printing Industry Center at RIT research monograph, entitled "Marketing Communications Demand Creation: Marketing Executive Study" (PICRM-2003-06), examines the role of the marketing executive.

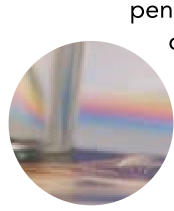
Media Selection Influence

Of the 205 corporate marketing executives surveyed in 2003, nearly 70% responded that they were part of a group of decision-makers regarding the selection of media, and 25% indicated that they were the sole decision-maker. During the year preceding the survey, only 53% of the firms represented had used the services of an advertising agency. For those who did use an advertising agency, nearly 65% said that they provided direction to the agency, as opposed to taking direction or collaborating. And a majority of respondents (64%) indicated that their advertising agency did not buy printing on their behalf.

These findings illustrate the tremendous power that marketing executives have over the selection of media used in advertising. In fact, among our respondents, print advertising was the top medium used during the previous year (35% of the advertising expense), followed by sales collateral, the Internet, and direct mail.

Personalized Printing and CRM

Print services providers should be encouraged that an average of 6.9% of corporate revenue is spent on marketing communications. Of those expenditures, approximately one third of the budget is spent on either sales collateral or direct mail.



Customer relationship management (CRM) can drive the growth of personalized digital print. Because of the high implementation costs associated with enterprise-wide CRM projects, until recently, they have been limited to Fortune 1000 companies. The study data indicated that only 21% of respondents had CRM systems in place. Even if CRM goals were present, the infrastructure didn't support implementation.

Seventy-five percent of the respondents indicated that they used personalization in their marketing campaigns. In the year preceding the study, only 25% to 30% of the campaigns had included personalization. But the disappointing aspect of these results was that 50% of the were a simple mail merge, and 19% combined fixed address and numerical data. Only 8% blended variable text, numerical data, and graphics.

Opportunities for Printers

The opportunities for the print services provider here are great. First, educate marketing executives about media options and digital technology. Most marketing executives (81%) agree that targeted campaigns outperform mass-market campaigns, and yet only 62% were aware of new print capabilities for personalization. Significantly less than half (36%) said that they had been shown samples that illustrated such capabilities. The print services provider demonstrate examples that have yielded results.

Rating the potential impact of personalized communication on a number of marketing objectives, marketing executives frequently indicated that personalization could improve response rates and customer retention. The print services provider will need to demonstrate to marketing executives how digital color solutions and personalization can deliver a relevant value proposition that increases response rates and improves customer retention.

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CRM Systems continued

What a CRM System is All About

Marketing managers realize that a good CRM system will expand relationships with existing customers, make it easy for old and new clients to do business with them, and cross-sell through personalization. Once thought of as just a technology solution, CRM has evolved into a customer-centric philosophy that can permeate an entire organization. The best CRM systems connect information from all data sources within an organization to provide one holistic view of each customer. This allows customer-facing employees (in such areas as sales, customer support, and marketing) to make immediate and informed decisions on everything from cross-selling opportunities to target marketing strategies, and even competitive positioning tactics.

One of the problems that marketing executives face is the reluctance of their firms to embrace and adequately implement a CRM system. The cost of a complete CRM system is tremendous, mainly because it requires an extensive customer-data infrastructure. Only 21% of our study's respondents already had CRM systems in place. Even if relationship goals were present in the other firms, the infrastructure was still too weak to support implementation.

If Not CRM, Then…Customer Databases

We asked the marketing executives in our survey whether they maintained a customer database — 94% replied that they did. Almost half of the respondents (48%) indicated that they updated their databases daily, and 13% did it hourly. When asked what software applications they used to manage their customer database, our respondents did not favor any one package: over 160 software applications were mentioned, with 17% of those being custom-built.

Respondents were asked how they populated database information. The most frequent response, at 79%, was manual data entry via paper forms, followed by telephone sales representatives (58%), and Web site data capture (48%). Sixty percent of the respondents indicated that their customer databases were clean.

A lack of quality data is the biggest single obstacle to successful personalized advertising campaigns. To the extent that the print services provider can assist with gathering data on customers or prospective customers for campaigns, the market can accelerate.

The respondents were also asked if they integrated their marketing database and CRM packages with their in-house printing technology. Slightly more than half (56%) said yes. Those respondents were then asked to rate how well their marketing database and CRM packages were integrated with their in-house printing. Nearly half indicated that they were integrated relatively well (40%).

One open-ended question asked what it would take to create an enterprise-wide solution to more effectively leverage customer information. While software was mentioned most frequently, many other ideas also surfaced, such as better integration among existing programs and acquiring better customer information.

Conclusion

In order to identify high-potential corporate opportunities for personalized printing, the study concludes, the print services provider should focus efforts on firms that are committed to or planning CRM solutions. While their CRM systems may not yet be fully implemented, in the long term these organizations will offer higher levels of potential for targeted campaigns.

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Lean Manufacturing *continued*

concentrate on changing their business and manufacturing processes to reduce or eliminate costs that do not contribute to the value of what they sell. They also continually look for opportunities to develop new products and services that leverage the capabilities of new technology.

The best printing companies also understand the real value of print to customers. The ultimate value goes beyond the material aspects of the manufactured product. Printed products that are primarily channels of communication find their ultimate value in the effectiveness of the communication. The value of a printed catalog, for example, is a direct function of the volume and distribution of sales that it generates.

The challenge for print providers is to reconcile the demand for ever-improving and innovative service with efficient manufacturing processes. If the prime emphasis is on service and the firm neglects to take a disciplined approach to improving the manufacturing efficiencies, the business will not be sustainable long term.

The RIT Printing Industry Center research paper, "Digital Integration and the Lean Manufacturing Practices of U.S. Printing Firms" (PICRM-2003-09) by Frank Cost and Brett Daly, reports on current industry knowledge and practice. Printing firms responded to questions in these categories:

- What are the manufacturing-related problems currently facing the industry and what are the opportunities for improvement?
- How does current industry practice compare with best practice?
- How do managers perceive the promise of new technology and management approaches to solving these problems?

Best Practices

Examples of current best industry practice are the R.R. Donnelley plant in Roanoke, Virginia; Thompson Legal and Regulatory (TLR) in Eagan, Minnesota; and the European packaging converter Van Genechten Biermans n.v. All three companies have taken formalized approaches to building rational manufacturing processes, including the following:

- Use of process performance metrics
- The drive toward Six Sigma quality
- Lean manufacturing
- Customer software development
- Enterprise Resource Planning (ERP)
- Computer Integrated Manufacturing (CIM).

Lean manufacturing, as a structured approach to reducing costs by eliminating waste and non-value-added activity, requires common sense. While smaller companies may be less likely to take a comprehensive approach to manufacturing cost reduction, they still stand to benefit from a working knowledge of how lean manufacturing practices and computer integration can be put to work in a print-manufacturing context.

Current Status of the Industry

The key manufacturing-related problems for the print providers surveyed were delays due to lack of information, redundancies within information systems, and the relatively large amount of work that needs to be expedited in the production process to meet delivery deadlines. The majority of firms report average run lengths below 10,000 pieces.

Currently, less than 25% of smaller firms (under 50 employees) in the survey have a chief information officer, whereas nearly 60% of larger firms (over 50 employees) do. Approximately 7% of smaller firms and 33% of larger firms have achieved ISO

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