Printing Industry Offshoring

Printers and their suppliers are keenly interested in how globalization and offshoring are impacting their industry. This month's research monograph, *"Printing Industry Offshoring: Perspectives from U.S. Based Printers"* (PICRM-2006-03), by RIT Professors Sandra Rothenberg, Ron Hira, and Zhi Tang, is a study of how the offshoring phenomenon is playing out in the U.S. printing industry.

Offshore Outsourcing and the Printing Industry

The offshore outsourcing movement comes at a unique time for the printing industry. First, the industry is simultaneously undergoing complex competitive and economic pressures: one source estimates that approximately 500 establishments per month went out of business between 1999 and 2001. Second, digital printing has changed the skill sets needed in the industry, and has expanded the range of service opportunities for printers to such areas as data management. The shift to digital media, particularly on the pre-press side, is especially important when looking at the issue of offshore outsourcing, because online file transfer and other aspects of e-commerce have significantly reduced the cost of transportation of pre-print media. Obviously, this expands the world of potential printers to a global basis.

Thus, printers face both challenges and opportunities with greater cross-border trade. On the upside, U.S. printers can expand their customer bases by selling to new markets like China and India, and can lower costs by more efficiently locating their inputs and processes. The potential upsides of globalization are:

- Larger overall markets due to rapid overseas growth,

- A larger market in the U.S. through efficiency gains in offshoring components, and

- A larger market in the U.S. because more products are offered as a broker for offshored products.

On the downside, and perhaps what gets the most press, is that offshoring can result in the loss of customers who move their operations overseas. This may stave off a printer's ability to move into higher-value complementary services such as database management and print pre-processing, since these may move offshore as well.

But industry experts emphasize that several criteria are important to print customers, including turnaround time, quality, cost, trust, ability to customize, co-location with other production processes,

availability of other services, and a printer's unique abilities. It isn't simply a matter of choosing the printer who quotes the lowest price for a job. For each printing job, the weighting of the various criteria will change.

Methodology

The researchers compiled eight hypotheses regarding the likelihood of printers to experience the loss of print jobs to offshore printers. To test these, they conducted preliminary interviews with industry experts and then devised a survey for members of the Graphic Arts Technical Foundation/Printing Industries of America (GATF/PIA).

The eight hypotheses are listed below:

- **Hypothesis 1:** Printers that offer "quick printing" will be less likely to experience loss of print jobs offshore printers.

- **Hypothesis 2:** Book printers will be more likely to experience loss of print jobs to offshore printing.

- **Hypothesis 3:** Packaging printers will be more likely to experience loss of print jobs to offshore printing.

- **Hypothesis 4:** Printers that offer variable data printing will be less likely to experience job loss to offshore printers.

- **Hypothesis 5:** Printers that produce advertising materials will be less likely to experience job loss to offshore printers.

- **Hypothesis 6:** Printers that rely on standard digital services such as digital proofing to attract and retain customers will be more likely to experience job loss to offshore printers.

- **Hypothesis 7:** Printers that offer data management services will be less likely to experience job loss to offshore printers.

- **Hypothesis 8:** Printers that offer non-standard IT services will be less likely to experience job loss to offshore printers.

The independent variables in the survey included both product and service types of products, since the printing industry has characteristics similar to both manufacturing and services industries. Like manufacturers, printers produce tangible goods, but like services providers, the products delivered are often highly customized, requiring co-production by customer and printer. (As a result, increased cross-border trade, especially with China and India, will affect the printing industry in distinctive ways.)

Survey Findings: Descriptive Statistics

The survey results suggest that while many in the printing industry are aware of the threat of global competition and are

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being affected by it, the U.S. industry is not yet operating on a global scale to any large extent. When asked how foreign competition would change over the next two years, 72% responded that it would increase, and 18% thought it would stay the same. Forty-nine percent of the respondents reported having lost a printing job to a foreign competitor. On average, 57% of those losses were to China, 16% to Mexico, 16% to Canada, and 10% to Europe. Despite the increased digital component of printing, only about 5% of these losses were to Indian printing firms.

For those companies that did lose printing jobs, lower costs were suggested to be the primary reason for this loss (34%). The next most common reasons were that the customers' work moved outside the U.S. (8%), that foreign companies actually had better local reach (6%), and that the larger size of the foreign competitor made it more economical for them to produce the job (6%). Fourteen percent of those firms that lost printing jobs reported that a common factor related to the work they lost was that those jobs required long print runs, while 11% reported that common factors were reasonable or long turnaround times and labor-intensive finishing.

Most of the printers in this sample did not have a global customer base; only 17% of the respondents reported that they had performed a printing job for a customer outside of the U.S. For most aspects of the printing process, less than one percent of the respondents overall outsourced outside the U.S. For those that did take advantage of offshore outsourcing, approximately 43% reported no savings, 40% reported savings between 1 and 39%, and 16% reported savings of higher than 39%.

While only a small number of firms were engaged in offshore outsourcing, a few went so far as to say that they had ruled it out as an option for the future. Eighteen percent of the respondents who had not engaged in offshore outsourcing had definite plans to do so in the near future. The most often cited concerns for these printers were loss of client control (74% saying this was a concern), and risk of losing key employees (31%). The table below summarizes how those that were engaged in offshore outsourcing saw the problems and benefits associated with this activity. Some of the highest rated benefits (other than cost savings) were using and learning about new technologies (using a scale of 1–5, where 1 was "do not agree" and 5 was "fully agree"), and increased product quality. In general, the problems were rated lower than the benefits. The highest rated problem was shipping delays, followed by quality problems.

Table 1. Problems and benefits of offshore outsourcing
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Benefits	Mean*	Problems	Mean*
Used new technology	4.02	Language barriers	2.38
Increased production volumes	3.67	Communication problems (other than language)	2.33
Increased product quality	4.03	Technology incompatibility	2.06
Increased product variety	3.15	Shipping delays	2.8
Learned about new technologies	4.03	Quality problems	2.49
Increased operational efficiency	3.67	Substrate availability	2.42
		Loss of intellectual property	2.22
		Increased travel budget	2.32
		Increased employee	2.34

* Respondents were asked to rate their levels of agreement with a number of statements, with "1" representing no agreement and "5" representing full agreement.

Analysis

The data analysis contained in the full report is extensive, and should be read for further understanding. However, overall findings of the regression analysis were as follows:

The following hypotheses were supported:

- **Hypothesis 1:** Printers that offer "quick printing" will be less likely to experience loss of print jobs offshore printers.

- **Hypothesis 2:** Book printers will be more likely to experience loss of print jobs to offshore printing.

- **Hypothesis 3:** Packaging printers will be more likely to experience loss of print jobs to offshore printing.

- **Hypothesis 4:** Printers that offer variable data printing will be less likely to experience job loss to offshore printers.

- **Hypothesis 6:** Printers that rely on standard digital services such as digital proofing to attract and retain customers will be more likely to experience job loss to offshore printers.

The following hypotheses were not supported:

- **Hypothesis 5:** Printers that produce advertising materials will be less likely to experience job loss to offshore printers.

- **Hypothesis 7:** Printers that offer data management services will be less likely to experience job loss to offshore printers.

- **Hypothesis 8:** Printers that offer non-standard IT services will be less likely to experience job loss to offshore printers.*

However, there was a strong negative relationship with job loss. This was the hypothesized direction of the relationship, but was only close to being significant.

Conclusions

The more U.S. printing firms focus specifically on books,

packaging, data-related services, and/or press-related services, the more likely they will be to lose jobs to overseas competitors. On the other hand, quick printing, variable printing, and non-standard IT services (with the exception of data management) are areas that are less likely to suffer from job loss due to offshoring.

To deal with the threat of offshore outsourcing, printers are trying to either focus on "safe" products, introduce new services, or offshore themselves. Regarding the first two strategies and comparing the results of interviews with the survey data, it is not clear that printers have a good understanding of what "safe" products and services are. Regarding the third strategy, very few printers are taking advantage of lower offshore costs. This appears to be due to fears about offshoring implications for customers and employees, a lack of knowledge about how to explore this option, and overall feelings of patriotism. Those printers that have offshored have enjoyed benefits above and beyond the reduced costs, including increased product quality.

Complicating this picture is the fact that the costs and benefits of offshoring are likely to change. India and China, for example, are both working on improving transportation, particularly air freight. Customers themselves are becoming increasingly global and even changing their business models to adjust to the downsides of offshoring.

Overall, the data suggest that while printers are aware of offshoring trends, and are being impacted by it, they are nevertheless reluctant to take advantage of the benefits that offshoring practices can offer. Because of the high number of small firms in the printing industry and thus the lack of public data, and because of the complex nature of the industry itself, much remains to be understood about the dynamics of offshoring in the printing industry. Clearly, this paper represents just the beginning of understanding the dynamics of offshoring in the printing industry.

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(▶ BACK TO TOP)

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