



Executive Synopsis

Sustainable Print in a Dynamic Global Market: What Going Green Means

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For your copy of "Sustainable Print in a Dynamic Global Market: What Going Green Means," contact PRIMIR at (703) 264-7200.

Environmental issues have hovered in the background of the graphic communications industry for a number of years. After having taken a back seat to other industry concerns, from emerging technologies to industry consolidation, the issue of sustainability is now taking on its own sense of urgency. Printers report that more print buyers are asking about recycled papers and whether printers are pursuing any "green" procedures in their operations.

But what does it mean to be a "green" graphic communications company? For firms interested in sustainability, where should they start? And does implementing environmentally conscious strategies even make business sense these days, given the poor economy and tight industry margins?

To determine what sustainability means in graphic communications and how green policies can be achieved, PRIMIR (Print Industries Market Information and Research Organization) commissioned the February 2009 report, "Sustainable Print in a Dynamic Global Market: What Going Green Means." NPES The Association for Suppliers of Printing, Publishing and Converting Technologies provided funding support for this research.

Sustainability defined

Sustainability can be defined as business strategies that balance the needs of society, the environment and the organization, without compromising the ability of future generations to meet their needs. Sustainability promotes the triple bottom line: environmental, social and economic.

Pursuing eco-friendly policies need not be a losing proposition for a company. Today's green printers, in fact, are not just saving resources, but also saving money. Of 209 printers surveyed in this report, 66% reported achieving cost savings from their green programs. UK printer Buxton Press reportedly enjoys an annual energy savings of \$32,000 since implementing its Power Perfector, for example, while Hayward, CA-based Alonzo Printing saves 30% annually on its solvents, thanks to a new solvent-recovery system. Other green strategies can even make money for the printer: Printing Control, a Tukwila, WA, division of Consolidated Graphics, generates \$5,000 to \$7,000 a year by recycling printing plates. Carlstadt, NJ-based Pictorial Offset reported \$5 million in new "green" business in 2007.

Conversely, a study on UK printers underscores the potential for companies to lose money by not being green. UK businesses reportedly lose up to £3 billion a year from their bottom line by failing to be more resource-efficient. Waste typically costs a company 4.5% of sales.

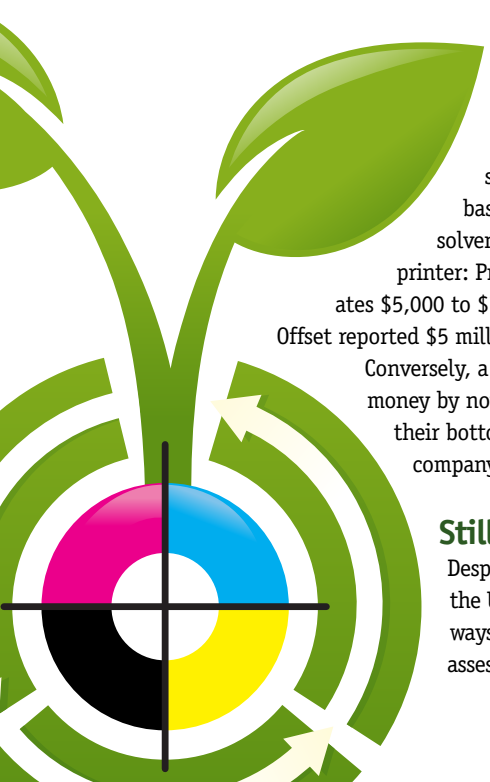
Still a ways to go

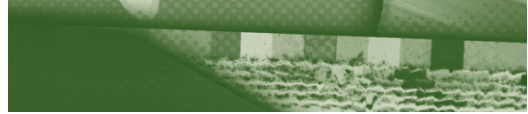
Despite increasing societal emphasis on the environment, research shows that the U.S.—and the graphic communications industry within it—still has a ways to go. According to the 2008 Environmental Performance Index (EPI), an assessment of countries' performance in the areas of environmental health and

ABOUT THIS STUDY

This report identifies the key drivers for the adoption of "green" practices in the North American print market, and how they measure within a global framework. Data came from a number of sources, including a quantitative survey with 209 North American printers, across 38 states and six Canadian provinces. Survey respondents were composed of those in sheetfed, web, digital, flexographic and screen printing, across a variety of end-use segments.

The surveys were supplemented with qualitative interviews with 100 North American print buyers, designers, publishers and *Fortune* 1000 companies. An additional series of expert interviews were conducted with environmental organizations, and secondary research was conducted on a global scale. To round out the study, best practice case studies were conducted with eight printers in the U.S., Canada, Europe and Japan.





ecosystem vitality, the U.S. ranked a paltry 39th, behind such less-developed countries as Panama, the Dominican Republic and Georgia. (For more details on the 2008 EPI rankings, see Ch. IV.2 in the report.)

Measuring by industry, the pulp and paper industry reportedly figures as the fourth largest emitter of greenhouse gases among U.S. manufacturing industries, accounting for 9% of all carbon dioxide emissions that come from manufacturing. Paper makes up 26% of landfills, according to the U.S. Environmental Protection Agency; its degradation produces methane, a greenhouse gas bearing 23 times the heat-trapping capacity of carbon dioxide.

The printing industry fares little better. Print, after all, requires the use of energy, water and chemicals, and releases volatile organic compounds (VOCs) and toxic substances in air and water. International risk-management company Det Norske Veritas puts print in the same category of environmental damage as mining and nuclear power.

Then, there's the waste that can be linked to graphic communications. According to the study, unsold U.S. magazines, if placed end to end, would circle the earth 20 times, and the estimated 90 billion pieces of unrequested direct mail sent in the U.S. each year would stack up to 20,000 times the height of Mt. Everest.

For a more in-depth discussion on print's impact on the environment, see Ch. IV of the report.

Greener than you think

On the plus side, printers are already taking action to become more environmentally friendly. Of those surveyed for this report, 71% use vegetable inks on press, 55% are alcohol-free and 25% use renewable energy or purchase renewable energy credits. A large majority recycle, with 95% of respondents recycling plates, 95% recycling paper, 70% recycling ink cans and 50% recycling shrink wrap. Indeed, the study states that printers are greener than many realize (see Table 7), though some of this is due to economic or regulatory reasons, rather than a printer's emphasis on sustainability.

Table 7
Printers' "green" practices

Percent of printers...	Average
...with documented environmental mgt plan in place	41%
...that measure carbon footprint	13%
...that measure energy use	68%
...that measure VOC	46%
...that are FSC certified	67%
...that said certification was worth it	60%

Table 3
Efficiency in printing technologies

1990	2007
Graphic arts film	Silverless imaging
UV plate exposure	CTP, chemistry-free
Mineral oil-based inks	Vegetable-based inks
1 hour press makeready	15 minute press makeready
Chlorine bleaching (dioxin)	TFC or EFC (no dioxin)
Hand washing	Press auto washing
Petrochemical solvents	Water-based solvent systems
Chemical-based proofing systems	Remote soft proofing systems

The printing process in general has actually progressed considerably in environmental terms, be it the evolution from film to chemical-free platemaking or the availability of remote soft proofing (see Table 3).

The report adds that not all environmental data is as clear-cut as it may appear. Electronic media is often promoted as a more eco-friendly alternative to ink-on-paper marketing, but the report notes that it, too, has the potential for damaging the environment. Consider that the disposal of electronic goods is the fastest growing cause of toxic waste. And while the paper industry is said to be the second-largest consumer of electricity in the U.S., at 75 billion kilowatt hours, TreeHugger claims the Internet uses 3% (109 billion kwh) of all the electricity in the U.S. Another study found that global electricity use by data centers doubled from 2000 to 2005. U.S. data center electricity usage is growing at about 17% per year.

Environmental legislation

For graphic communications firms, one of the first steps to sustainability is to meet the environmental regulations. The main ones of concern to the industry are air, water and hazardous materials. A primary air issue for printers is the release of VOCs, from fountain solutions, inks, blanket wash solvents, coatings, adhesives and more. With water, issues typically revolve around the pH level of chemicals in CTP systems; organics in waste water; metals in discharge fountain solutions, inks or recirculation systems; and blanket wash.

New environmental legislation on the horizon may pose additional challenges going forward. First, California's South Coast Air Quality Management District (SCAQMD) has established a lower limit on VOCs in blanket wash that will take effect in 2009 and 2010 for central and northern California, respectively. Second, the

EPA's National Ambient Air Quality standards for ground-level ozone and other pollutants were lowered from .080 to .075 in May 2008. The study reports that more than 300 counties do not meet these lower standards, up from 85 counties at non-attainment at the .080 level. For a more nuanced discussion of the various environmental regulations on the industry, see Ch. VII and VIII in the report.

Such environmental regulations are a cost of doing business. The savviest companies will, however, use this as an opportunity to market their green initiatives to new and existing customers. The earliest adopters tend to derive a marketing benefit from going green—late adopters may only get the costs (see "Cost vs. Benefit" table).

The report states that ultimately, the cost of compliance runs far smaller than the cost of non-compliance. Data does suggest that environmental spending is relatively small for the industry. In the survey of 209 printers, of the printers in the \$10 million to \$100 million range (57% of those surveyed), 70% reported spending less than \$50,000 in the past year to become greener. And, according to a report by the U.S. Census Bureau, pollution abatement expenses in 2005 for “printing and related” industries figured at 0.25% of sales. Capital expenditures for pollution-abatement equipment, meanwhile, were 0.07% of sales, representing less than 5% of all capital expenditures by printers.

Characteristics of green organizations

So what constitutes a “green” company? While different graphic communications organizations approach the issue of sustainability in different ways, the report found that the greenest of them share certain common characteristics. (For a full discussion on best environmental practices, see Ch. X and XI in the report.) In particular:

They pursue sustainability of their own initiative. Green companies are proactive in pursuing sustainability goals. According to the survey of the 209 printers, respondents said their own strategies were the primary driver of their green practices, with customer urging a close second.

They have an environmental management system (EMS) in place. An EMS gives a company a systematic method for establishing clear environmental targets and tracking their progress. All of the eight printers profiled in case studies in the report have an EMS; five are even ISO 14001 certified. (ISO 14001 is an international standard that offers a framework for establishing an effective EMS.)

They understand the importance of accreditations. Accreditations play a significant role in overall business strategy for environmentally progressive firms. In the printer survey, a majority had environmental paper certification, such as through the Forest Stewardship Council (FSC), the Programme for Endorsement of Forest Certification schemes (PEFC) and the Sustainable Forestry Initiative (SFI). Most of the printers featured in the report’s case studies boasted these relatively standard certifications and more. (For more on environmental certification programs, see Ch. VI.)

They enjoy management commitment on sustainability issues. Whether certified or not, graphic communications firms are most successful in their environmental pursuits when they enjoy management commitment and a culture of sustainability. At Sandy Alexander, a \$142 million printer based in New Jersey, top management discusses environmental issues as part of its quarterly management meetings.

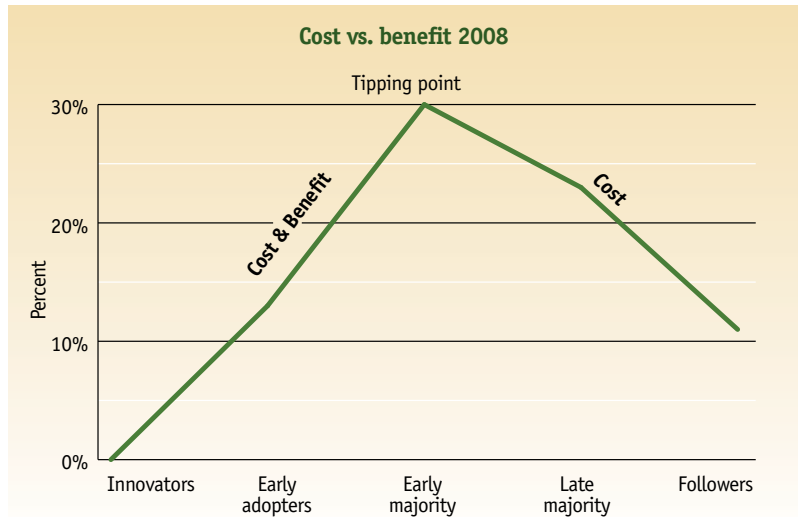
They actively promote their green practices. Education is among the most effective strategies companies can employ in their pursuit of sustainability. Not surprisingly, the case study printers advertise their sustainability initiatives on their websites, via newsletters and more. Alonzo Printing, a 50-employee sheetfed, web and digital printer in Hayward, CA, actually publishes its carbon footprint in regular newsletters.

Completely sustainable process

If done correctly, printing can be a completely sustainable process, and the greenest printers are already achieving this. Sandy Alexander, which operates two plants in New Jersey and one in Florida, obtains 100% of its electricity from wind power, through Community Energy in Pennsylvania. Printing Control buys renewable energy credits from its energy supplier, which costs the company roughly \$500 per month. And Pictorial Offset—which offset its carbon footprint by planting 5,000 trees, audited by the U.S. Fish and Wildlife Service—is pursuing a goal of “zero landfill” by 2011.

Even in these times of economic difficulty, small efforts can be made to accomplish waste reductions and reach some sustainability goals. A number of the case study printers have replaced light switches with motion-activated lights and installed low-wattage LEDs for their exit signs. One printer reduced the number of trash cans in its plant, thereby forcing employees to recycle their paper, aluminum drink cans and bottles.

Achieving sustainability can be through steps both big and small. The process isn’t necessarily easy, but the time to act is now. ■



TIPS FOR SUSTAINABILITY SUCCESS

- **Comply** with environmental legislation.
- **Secure** management commitment.
- **Establish** an environmental management system.
- **Recycle** to generate income.
- **Reduce** to minimize cost.
- **Communicate** with customers about your green initiatives.
- **Educate** employees, suppliers and your local community.

Sustainable Print At-a-glance

66% Respondents (of 209 printers surveyed) that have achieved cost savings from green programs

£3 billion Money lost annually by UK printers due to inefficient resource use

4.5% Percent of sales lost due to waste

39 U.S.'s 2008 Environmental Performance Index rank

.075 New EPA National Ambient Air Quality standards

300 Number of counties that fail to meet the new limit

.25% Percent of industry sales spent on pollution abatement in 2005

.07% Percent of industry sales spent on pollution-abatement equipment

Implications for members

Vendors can do much to promote sustainability, not least by working across the supply chain to help establish and employ best green practices. The industry should promote the attainment of ISO 14001 certification, standardize environmental management systems processes and develop carbon calculations for each step of the print production process. Most importantly, promote your own sustainability, and educate customers about what it means to be green.

Prepress vendors

Not surprisingly, chemical-free CTP is one easy way for prepress vendors to promote sustainability. Also, suppliers should educate customers on the benefits of soft proofing, while encouraging adoption of ISO 12647 or GRACOL for color management consistency, to help printers reduce hard-proofing and press-makeready waste.

Press equipment manufacturers

Press vendors should take a second look at press design and technology. Focus on creating more energy-efficient presses, such as by incorporating larger, more efficient centralized compressors and built-in Power Perfectors; reducing overall equipment footprint; and developing systems to minimize press waste. Also, explore waterless printing technology as well as the possibility of combining conventional and inkjet into a new generation of hybrid presses.

Also helpful are training programs focused on green practices. These could cover such topics as preventive maintenance, eliminating press waste, and best practices on presses.

Postpress and mailroom equipment vendors

A finishing standard with quality metrics would create a new level of efficiency and waste reduction from the bindery. Customers also want tools that more accurately calculate waste, improve planning on the back end and minimize the environmental impact of print distribution.

Consumables manufacturers

If they haven't already, vendors across all consumables should begin promoting their most environmentally friendly products, be it recycled or certified papers, gapless blankets that minimize waste for web printing or vegetable inks. For the future, focus on developing new lower-volatile organic compound (VOC) solutions for washes, solvents and ink.

Software vendors

Sustainability offers yet one more reason for printers to invest in a management information system (MIS). In addition to just selling the product, software vendors can offer training: on integrating the MIS with the rest of the operation; on how best to use database management tools, which would result in more accurately targeted print campaigns; and on what kind of data tracking can be performed to minimize waste and reduce a company's environmental impact. ■

For more on sustainability and how best to pursue environmentally friendly strategies in the graphic communications industry, see "Sustainable Print in a Dynamic Global Market: What Going Green Means."

