It’s Not Easy Being Green

BY JOHN PARSONS

In 2002, THE SEYBOLD REPORT examined the issue of environmental sustainability in the printing and publishing markets. Since then, printers have been characteristically slow to change on these issues. However, advertisers and packaged goods companies are seriously rethinking the print aspect of their environmental balance sheet.

In February 2002, the article “Printing in the Green” marked something of a departure from THE SEYBOLD REPORT’s usual emphasis on publishing business and workflow technology issues. Revisiting this issue four years later, we found that the core issues raised are more relevant than ever. Even so, only a relatively small number of printers have formally embraced the challenges of environmental sustainability.

Chain-of-custody certifications are early indicators that print customers are beginning to ask for more than ink on paper.

That’s not to say that all printers are indifferent. In the United States, more than 80 printing companies have received Forestry Stewardship Council (www.fsc-info.org) certification, an internationally recognized chain-of-custody verification of their use of fiber from managed forests. FSC certification is a relatively straightforward and inexpensive (under $5,000) procedure, especially when compared with the rigors of ISO 14000 certification for environmental management systems.

Increasingly, FSC certification is becoming a qualification criterion for suppliers of paper and printing to major corporations such as Wal-Mart, Goldman Sachs, Bank of America and others. Another, somewhat differently focused chain-of-custody program, the U.S.-based Sustainable Forest Initiative (www.aboutsfri.org), is further evidence of the issue's growing importance.

Chain-of-custody certifications verify only one factor — the sourcing of fiber from sustainable sources — rather than address a broad spectrum of energy, emissions and waste issues. They are, however, early indicators that print customers are beginning to ask for more than ink on paper at the lowest possible price.

One indication of concern about climate change and energy security is the number of printers committing to the co-generation and purchase of “green” energy. Los Angeles-based printer Cenveo Anderson Lithograph is a member of the Climate Registry that generates all of its own electricity. In addition, Cenveo Anderson’s system captures and destroys all of the fugitive VOC (volatile organic compound) emissions generated by their printing operations, reduces the nitrogen and carbon oxide emissions associated with the combustion of natural gas fuel by 85% and produces lower emissions than the local electric utility. Recently, New Jersey-based printer Sandy Alexander announced a seven-year agreement to purchase 100% of its electric power from clean and renewable wind-generated sources, joining FedExKinkos and a growing number of companies in support of the Green Power Partnership.

The Perfect Storm

Pressure from the public, as well as investors, regarding environmental and energy issues has increased dramatically since 2002. The issue of climate change and our “carbon footprint” (the imbalance of our collective output of CO2 and other greenhouse gases, or GHG, with the planet's ability to process them) has found increasingly mainstream public support, as evidenced by the success of Al Gore's film, An Inconvenient Truth (www.climatecrisis.net).

Even more pressing are dramatically rising energy costs and the security of energy issue (industrial nations’ reliance on politically unstable regions of the world for a finite supply of fossil-based fuels). Whether “peak oil” happens in the next decade or in 40-50 years, public perception and official corporate policies have changed considerably. For example, Wal-Mart CEO Lee Scott recently announced that the company...
will be 100% powered by renewable energy within 10 years and General Electric’s CEO, Jeff Immelt, has committed his company to ambitious sustainability goals relative to alternative energy and GHG emission reduction. Changes by large corporations will affect packaging first (see “The Packaging Factor” page 9) but will soon spread to other print activities. This sea change in corporate, public and investor attitudes regarding climate change, petroleum and energy is likely to affect printing companies much sooner than most people imagine. This is because paper making, printing and print distribution are energy- and petroleum-intensive activities. The U.S. Department of Energy reported that the industries manufacturing aluminum, petrochemicals and forest products such as paper are among the most energy-intensive in the country. According to the AIGA, paper manufacturing alone is responsible for the third-largest consumption of fossil fuels worldwide and the single-largest industrial use of water per pound of finished product. Printing inks and toner are the second-largest industrial uses of carbon black, which is primarily manufactured by the incomplete combustion of petroleum.

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Because printing is ubiquitous and since it is likely to remain that way, the life cycle aspects and impact of printing and publishing are likely to come under increased scrutiny.

**Life Cycle Management: Seeing the Whole Picture**

Subscribers to THE SEYBOLD REPORT are accustomed to reading about workflow systems, workflow analysis and workflow management and process automation. From cross-platform publishing to JDF-enabled computer integrated print manufacturing, technology trends have been analyzed, ad nauseam. What has not been explored is the *life cycle* of printing and publishing workflows.

The term “life cycle” refers to the environmental aspects and potential impacts associated with the sourcing, production, manufacture, distribution, use and disposal steps (including intervening transportation steps) associated with a product or process. Multiple decisions are made in printing processes that determine the life cycle aspects and impacts of the primary ingredient, paper, and various other ingredients employed: ink, toner, coatings, adhesives and finishing materials.

The life cycle of print involves everything from the fiber, minerals, chemicals and energy used to make the paper, ink and other essential materials, and the energy and materials used in print manufacturing and distribution to the final disposition or fate of waste streams and the printed products at the end of their useful lives. Transportation links (from forest to paper mill, mill to printer, printer to consumer and final disposition) all add measurable impact to the overall picture. Recycling and the specification of post-consumer recycled paper content are important, but they represent only some of aspects of sustainable product life cycle management that must be considered.

To the extent that life cycle management is important to print buyers or publishers, it will become a priority for printers. Until recently, most corporate print buyers and publishers did not make sustainability and environmental life cycle management a priority, but that situation is changing. According to KPMG, more than half of the Fortune 250 now publishes sustainability reports and a growing number are rewriting supplier scorecards and RFP criteria to include sustainability criteria.

A print buyer or advertiser, especially a large global corporation with a valuable brand, has a vested interest in making its public sustainability policies a practical reality. Investors and consumers alike are sensitive to “greenwash” (unsubstantiated PR claims of corporate environmental responsibility) and are increasingly exerting pressure that cannot be ignored.

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**The New Workflow: Lifecycle Management**

Publishers and printers of all sizes have become accustomed to digital workflow patterns, whose aim has been to reduce time and labor involved in the production process. New high automation of the kind is well accepted, vendor and their customers must look further afield - to the management of their physical resource supply chain, from original raw material sources to their ultimate disposal. Once the means of measuring these factors and making intelligent environmental decisions is in place (ultimately as part of the JDF process), companies will be able to respond well to public demand for sustainability.

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Designers and ad agency creative and production professionals make the first practical decisions that influence the life cycle of print, starting with paper choices and trim sizes. Their decisions can also influence many other aspects and impacts of the life cycle. These choices can be a matter of personal conviction, but increasingly they are determined by the mandate of a client with or without a public sustainability policy that extends to their advertising, printing or marketing communications supply chain practices.

Publishers can also play a role in such decisions to the extent that they stand to gain or lose public credibility or for the environmental aspects and impacts associated with their supply-chain practices. However, these decisions are not simple ones for advertisers, agencies and many publishers. Many unrelated parties are involved in the print supply chain that often do not have direct access to key measures of energy use, materials used, GHG emissions or other key factors.

Because larger publishers and especially printers more often have direct access to relevant environmental measurements, workflow-related life cycle analysis and management will initially fall to them. Other players, such as circulation, fulfillment and delivery entities, also will be required to provide publishers with critical data, such as delivery quantities and unsold newsstand copies that are not recycled and contribute to the footprint of print.

“Sustainability is becoming the new IQ test for management,” said Don Carli, a senior research fellow with the Institute for Sustainable Communication (www.sustaincom.org). “Increasingly, well-run companies can be expected to measure, manage, report and verify the financial and extra-financial aspects and impacts associated with their business activities. Ultimately, life cycle analysis, life cycle management and workflow management are destined to become elements of a company’s overall product life cycle management and sustainability reporting.” Whether life

### Advertisers in the Lead

Recently, one high profile advertiser, the internationally acclaimed jewelry designer John Hardy, engaged the Institute for Sustainable Communication to determine the greenhouse gas (GHG) emissions associated with his ad pages in magazines such as InStyle, Vogue, Vanity Fair, Harper’s Bazaar, The New Yorker and other publications. The first step is to offset the carbon emissions that the ads produce by providing economic support for bamboo agro-forestry projects (to sequester atmospheric carbon dioxide) on the island where the jewelry is made.

According to John Hardy: “Advertising is one of the primary means that a brand can use to convey its image and communicate with consumers. While it is an effective way to impact the public at large, it also has an impact on the environment, and not a positive one: Consider the amount of trees that are cut down, the tons of paper wasted, petroleum-based ink, solvents, plastics and adhesives used, oxygen depleted, wastewater generated, fossil fuels burned and greenhouse gases emitted.

“With the help of the Institute of Sustainable Communications (ISC), we will measure both the key environmental impacts associated with our own advertising in 2006, and evaluate practical solutions for how to offset them. Although we are a small advertiser, we hope to serve as an example to larger advertisers and even the publishing community at large.”

Ultimately, John Hardy and ISC hope to work with others to look beyond offsets and develop strategies for reduction of the lifecycle footprint of print advertising. GHG reduction strategies would include paper choices by both advertisers and publishers, which would, in turn, mandate more detailed reporting of environmental impacts by paper manufacturers and, ultimately, changes in the manufacturing process itself.
cycle management and sustainability reporting will become yet another facet of JDF or something not yet conceived remains to be seen.

**Green Advertising**

Newspaper and magazine advertising in particular will be at the forefront of sustainability and life cycle issues. Because ads are all about public image, their environmental impact will rapidly become a visible indicator of brand integrity and public commitment to "walking the talk" of sustainability.

Thus far, advertisers and their agencies have been preoccupied with advertising about sustainability. The result has been thousands of "do-gooder" public service ads. Similarly, publishers have primarily focused on running public service announcements and are devoting more covers and editorial coverage to sustainability and green topics. While these efforts have raised awareness, their effectiveness is limited by their "do as we say (not as we do)" nature. Little has been done to measure or reduce the negative environmental impacts associated with their advertising-related supply chain, production, distribution and waste-recovery practices.

More recently, efforts by some advertisers (see "Advertisers in the Lead," Page 6) have gone beyond just discussing the issue. These have recently been augmented by publishers' efforts, including a recent supplement in The Economist detailing the offset measures taken to balance the GHG emissions related to advertising in the supplement. What is innovative about these efforts is that they are not limited to advertising about sustainability. They extend the dialogue among advertisers and publishers to increasing sustainability in and of the life cycle of advertising, publishing and print. It brings a much needed "do as we do" element to the topic of sustainable advertising and publishing.

As more advertisers take similar action, publishers, printers, paper manufacturers and other supply chain stakeholders will be called upon to do their part. Ultimately, environmental management systems will assume a greater importance in this process, especially as it becomes clear that sustainability management can mitigate risks and deliver business benefits that cannot be achieved with token gestures or unfulfilled commitments.

**Measure, Learn, Lead**

As with any business process, intelligent sustainability decisions cannot be made without adequate data. Before any real action can occur, companies must measure the effects of their print activity. Outside the U.S. and within the U.S. building products sector, voluntary ISO 14000-based environmental product declarations (EPDs) make this process easier, since they provide standardized reports of product life cycle energy and resource use and emissions. The use of EPDs by U.S. paper manufacturers will eventually increase — probably to comply with demands by advertisers and other print buyers.

Some have argued that the complex supply chain, distribution and post-consumer disposal aspects of publications would make life cycle management difficult or impossible. For example, if a job printed at a certain location must be distributed to a specified number of separate retail locations, one must calculate the energy cost of transportation (not just the fuel dollars, but the greenhouse emissions from driving the trucks and from making the fuel!) However, the growing market for environmental product declarations, life cycle analysis and environmental management tools associated with LEED (leadership in energy and environmental design)-certified "green building" suggests that the life cycle management of print might be less of a problem than some might think.

Despite the daunting prospect of measuring so many variables, many companies are seriously considering such an approach. Technology itself will play an essential role. The vast amount of measured data will only lead to informed decisions if it is viewed systematically. Companies that succeed in this measuring and learning process will be among the first to act — and ultimately benefit their stakeholders.

**Implications for the Industry**

A comprehensive solution to the print sustainability issue begins with print buyers, but it does not end with printers. Equipment manufacturers, for example, will come under increased scrutiny to document the energy efficiency of their products as the pressure increases to stabilize energy demand. Makers of computer displays and other devices have already implemented changes under the EnergyStar program, which will affect a wider range of equipment as the printing industry migrates to new technology. Manufacturers should not view this as a burden, however. As new workflow features become harder to identify, effective marketing programs will undoubtedly promote energy efficiency as a key selling point.

As investors and consumers increasingly demand sustainable business practices and environmentally responsible products, the paper and ink industries also will have increased incentives to adopt sustainable supply chain and manufacturing practices. Sustainable forest management practices, as well as the use of recycled content and non-tree fibers, will become increasingly important. It is likely that paper specification choices will increasingly also take the energy, greenhouse gas emissions and waste water impacts associated with the life cycle of paper into account.

While some companies might view these new sustainability considerations as a burden, a growing number will see them as an opportunity and the key to
Historically, the environmental movement has relied upon the coercive power of activist campaigns on public opinion (as well as lawsuits) to compel large corporations and governmental bodies to "do the right thing" for the environment. Unfortunately, this tends to foster more defensive reaction — in the form of massive PR and counter-litigation — than it does positive action.

The Institute for Sustainable Communication (ISC, www.sustaincom.org) has developed what it considers a more constructive approach. Its Responsible Enterprise Print (REP) program provides corporations with a solutions-oriented framework — as well as practical standards-based tools and resources — to achieve significant cost savings, reduce environmental impact from their print-related activities and address supply chain diversity challenges.

Through a series of fellowship and mentoring programs, the ISC supports the development of young professionals from diverse backgrounds who will have the knowledge, skills, networks and values to implement fiscally, environmentally and socially responsible print media and publishing business practices. These leaders create enterprise and shareholder value by cutting total costs, reducing the environmental impact and increasing the social responsibility of enterprise communication.

Under the REP program, teams of qualified personnel are deployed within a company to quantitatively measure resource consumption, energy use, carbon emissions, waste stream and sourcing issues related to print advertising, collateral, packaging and other print-related activities. These measurements include potential cost-saving factors, as well as environmental ones.

### Responsible Enterprise Print

#### Total Energy (1000 BTUs)

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Energy (1000 BTUS)</th>
<th>Greenhouse Gas Emissions (CO2 = Lbs.)</th>
<th>Solid Waste (Lbs.)</th>
<th>BOD and COD Combined Oxygen Demand (Lbs.)</th>
<th>Waste Water Effluent Flow (Gal.)</th>
<th>Trees to Fell</th>
</tr>
</thead>
<tbody>
<tr>
<td>365 Year</td>
<td>Actual: 266,272.8</td>
<td>39,254.1</td>
<td>15,449.4</td>
<td>680.2</td>
<td>142,130.2</td>
<td>166.4</td>
</tr>
<tr>
<td>Book Abatement: Model: 211,225.2</td>
<td>32,383.6</td>
<td>11,906.7</td>
<td>469.3</td>
<td>108,738.6</td>
<td>87.8</td>
<td></td>
</tr>
<tr>
<td>Improved: 20.7%</td>
<td>17.5%</td>
<td>22.9%</td>
<td>31.0%</td>
<td>23.5%</td>
<td>47.2%</td>
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</tr>
<tr>
<td>Salary</td>
<td>Actual: 219,211.1</td>
<td>32,259.2</td>
<td>12,447.8</td>
<td>550.0</td>
<td>115,775.1</td>
<td>130.5</td>
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<tr>
<td>Booklet Abatement: Model: 189,362.3</td>
<td>28,533.8</td>
<td>10,526.8</td>
<td>435.6</td>
<td>97,669.0</td>
<td>87.9</td>
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</tr>
<tr>
<td>Improved: 13.6%</td>
<td>11.5%</td>
<td>15.4%</td>
<td>20.8%</td>
<td>15.6%</td>
<td>32.7%</td>
<td></td>
</tr>
<tr>
<td>Gala Program: Model: 206,748.6</td>
<td>31,084.4</td>
<td>11,552.2</td>
<td>484.1</td>
<td>105,789.2</td>
<td>106.0</td>
<td></td>
</tr>
<tr>
<td>Book Abatement: Model: 197,874.6</td>
<td>29,976.8</td>
<td>10,981.1</td>
<td>450.1</td>
<td>100,405.3</td>
<td>93.3</td>
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</tr>
<tr>
<td>Improved: 8.837.9</td>
<td>1,107.6</td>
<td>571.1</td>
<td>34.0</td>
<td>5,382.9</td>
<td>12.7</td>
<td></td>
</tr>
<tr>
<td>Boston Call: Model: 106,640.4</td>
<td>15,659.4</td>
<td>6,157.1</td>
<td>273.5</td>
<td>56,997.8</td>
<td>66.9</td>
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<tr>
<td>Registration: Model: 86,024.2</td>
<td>13,086.3</td>
<td>4,830.3</td>
<td>194.5</td>
<td>44,492.2</td>
<td>37.4</td>
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<tr>
<td>Poster Abatement: Model: 20,616.2</td>
<td>2,573.1</td>
<td>1,326.8</td>
<td>79.0</td>
<td>12,505.7</td>
<td>29.4</td>
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</tr>
<tr>
<td>Improved: 4.3%</td>
<td>3.6%</td>
<td>4.9%</td>
<td>7.0%</td>
<td>5.1%</td>
<td>12.0%</td>
<td></td>
</tr>
<tr>
<td>Total Actual Top 5 Items</td>
<td>865,718.3</td>
<td>128,358.2</td>
<td>49,403.0</td>
<td>2,145.4</td>
<td>455,614.6</td>
<td>503.4</td>
</tr>
<tr>
<td>Overall Actual Total (all 37 items)</td>
<td>1,257,772.5</td>
<td>187,449.4</td>
<td>70,530.6</td>
<td>3,036.6</td>
<td>647,532.0</td>
<td>701.6</td>
</tr>
<tr>
<td>Actual % FROM TOP 5</td>
<td>68.8%</td>
<td>68.5%</td>
<td>70.1%</td>
<td>70.7%</td>
<td>70.4%</td>
<td>71.3%</td>
</tr>
<tr>
<td>Total Modeled Top 5</td>
<td>744,601.2</td>
<td>113,242.5</td>
<td>41,636.1</td>
<td>1,681.3</td>
<td>382,150.5</td>
<td>330.4</td>
</tr>
<tr>
<td>Abatement Total</td>
<td>121,109.2</td>
<td>15,115.7</td>
<td>7,794.2</td>
<td>461.4</td>
<td>73,464.1</td>
<td>172.9</td>
</tr>
<tr>
<td>% OVERALL IMPROVED</td>
<td>14.0%</td>
<td>11.8%</td>
<td>15.8%</td>
<td>21.6%</td>
<td>16.1%</td>
<td>34.4%</td>
</tr>
</tbody>
</table>

In the REP analysis of five AIGA print projects, making environmentally sustainable decisions during the design phase resulted in significant abatement of environmental impact.

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During the process of creating the overall findings, the team also develops company-specific tools for ongoing environmental measurement and decision making. Once the project is concluded and the assessment recommendations and business case analysis are presented, ISC encourages the client to consider hiring REP team members as full-time employees to implement the recommendations.

Successful pilot REP projects have already been implemented at the investment firm Piper Jaffray & Co. and the AIGA (www.aiga.org). The institute's goal for the REP program is to place 100 such teams in Fortune 500 companies over the next five years. In doing so, ISC and its supporters hope to create a community of practice among young professionals in business, environmental science and publishing technologies that will ensure the sustainable growth of print and other communication media.

### Education and Training

The ISC supports education and training programs for current and emerging leaders in the media and publishing industry. These programs include workshops, seminars, webinars and conferences that focus on the latest tools and techniques for creating sustainable and responsible content.

### Sustainability Reports

The ISC provides sustainability reports for companies of all sizes. These reports analyze a company's environmental impact and provide recommendations for how to reduce that impact.

### Certification

The ISC offers certification programs for businesses that meet certain environmental and social standards. This certification helps businesses demonstrate their commitment to sustainability to customers and clients.

### Conclusion

The REP program is a powerful tool for creating positive change in the way businesses communicate. By focusing on sustainability and responsible practices, companies can not only reduce their environmental impact, but also improve their bottom line.

TSR