



Reflections

THE WHITE PAPER SERIES FROM **NewPage**[®]

The Environmental Impact of **Print and Digital Media**

RESPONSIBLE ORGANIZATIONS MANAGE BOTH

NewPage, the largest coated paper manufacturer in North America, believes that responsible use of print and electronic communications is of utmost importance to our environment. As a company, we encourage the dialog on sustainability practices in all communications, and as such, we have developed this white paper that asks the question: How can we marketers be responsible in all forms of communications, digital or print? What measures should we take as responsible corporate citizens to be conscientious in our choice of marketing tools, to ensure we optimize our marketing channels to deliver the results we are looking for? Taking into consideration the merits of both forms of media, which choice is right for you? We hope this discussion provides a thoughtful discussion about the merits and challenges inherent in all forms of communication.

Any given day, an American household receives a financial statement or a monthly mortgage or utility bill that carries some type of environmentally inspired message: "Go Green – Switch to Electronic Statements" or "Automate Bill Payments and Save a Tree."

The collective impact or result of this messaging, coinciding with other trends, is significant. The United States Postal Service reports that its First-Class Mail volume – the class of mail that comprises personal financial information and supports payments – has declined by nearly 11.5 percent since 2001, in large part because of people, businesses and households switching to electronic banking and transactions.

However, a closer look at the environmental sustainability of various forms of communications reveals more than one might expect at first glance. It is simply not black-and-white to say "digital communication is green" and "print communication is not." In fact, both forms of communication have environmental impacts, and increasingly, businesses and organizations that seek to manage their overall environmental footprint are quickly discovering that what goes on in the information technology infrastructure to support digital media (from email to search, social networks and Web



sites) is energy intensive, with significant impacts on cost and climate change. These need to be managed proactively.

Just as huge amounts of intellect have been expended to reduce and manage the eco-footprint of print communication, so it is becoming the case for digital communication. From data centers to servers and power sourcing, those invested in e-commerce and e-communication, and the technology and power supply chain that supports such electronic dialogue with customers, are waking up to the need to manage digital communications' efficiency and eco-footprints, accordingly – just as they do for print media. Referred to as the Green IT movement, this initiative is predicted to accelerate despite the economic downturn, according to Forrester Research.

Fortunately, action is being taken to improve the environmental sustainability of both print and digital communications. Unfortunately, some stakeholders are translating the greater good of “going green” into an opportunity to position their products and services as having less of an impact than actually is true. Let’s take a closer look at the current climate for eco-claims, as well as print and digital media, clearing up some misconceptions along the way.

WARNING: All Eco-Claims and Labels Need to be Supported

No longer should brands be touting “go digital, go green” and the like without any type of investigation behind what indeed is the environmental impact of such claims. The Federal Trade Commission is watching closely the explosion of environmental labeling and messaging, to gauge whether “green” claims are truthful. New guidance is expected in 2010 — an update of the FTC’s existing Green Guides — to support brands and marketers in their environmentally focused labeling. In the meantime, brands should resist the numerous “sins of greenwashing,” by not making environmental claims without the support of due diligence

and research. A helpful resource for communicators is a report titled “The Seven Sins of Greenwashing,” recently released by TerraChoice, a Canadian-based consultancy that advises the Canadian government on environmental claims.

These sins concern a variety of eco-mishaps: hidden tradeoffs, where an environmental attribute of a good or service is touted without attention to the overall environmental issues involved in the product’s life cycle; making an environmental claim without any third-party proof; vagueness, making a claim that is so broad or loosely defined that it is confusing to consumers; irrelevance, where claims are outdated or made obsolete by changing regulations; the lesser of two evils, where one claim of a product’s green trait is negated by the product category’s overall less-than-stellar attributes; or falsehoods, claims that are demonstrably not true. Recently TerraChoice added a “new” sin – that of “false label worshipping” – where environmentally focused seals, certifications and logos are in play, yet these regimens themselves lack validity and verification. Says TerraChoice:

“Greenwashing is still rampant, with more than 98% of ‘green’ products committing at least one of the Sins. Compared to the [previous] 2007 study, there appears to be a small decline in the frequency of greenwashing, but it is not statistically significant. Of 2,219 products making green claims in the United States and Canada, only 25 products were found to be Sin-free.”

Environmental Leadership in Print Media Marks its Third Decade

In the world of print communication, the entire supply chain – from forest companies to recycling collection and solid waste management -- has been focused for at least two decades on continuous improvement where environmental performance is considered. During the 1970s and 80s, concern about deforestation, dioxin in papermaking, toxic metals in printing, acid rain and other environmentally harmful practices led to height-



ened regulation of papermaking and printing, among other industrial concerns, in a bid to curb pollution and reverse environmental degradation. In the world of paper and print, legal compliance moved environmental best practices in the 1990s and early 2000s.

Forest Certification Organizations

Today, a variety of regimes have emerged to support and document the sustainability of forestry and wood products, including pulp and paper. For example, the American Tree Farm System®, Canadian Standards Association®, Forest Stewardship Council, Programme for the Endorsement of Forestry Certification Schemes, and the Sustainable Forestry Initiative® all have advanced programs for implementation, reporting and third-party verification that seek to demonstrate to consumers that any particular forest product that carries their respective label has met a rigorous checklist for the wood and/or fiber in that product.

These programs, all of which have emerged since the mid-1990s, are intended to encourage the protection of the world's forests by instilling forestry practices that are sustainable. In most of these regimes, special attention is provided to particular ecosystems – the boreal, temperate, and tropical regions – which perform important functions in reducing climate change and protecting habitats of rare and threatened species and cultures.

Certified Woodlands

In 2009, only 10 percent of the world's total forests are certified for sustainability – with the large majority of these certified woodlands in Canada, the United States and Northern Europe. In effect, these programs provide a blueprint for forestry practices in all countries that supply the world's paper markets – as paper markets effectively have become global through free trade.

Legally Harvested Wood

Another concern for paper buyers is avoiding illegally

harvested wood. As of May 2008, U.S. purchasers of imported paper and pulp need to ensure that the fiber included in these products originated from legal sources or face possible criminal charges. While illegal harvesting is rarely a concern in North America and most of Europe, the same cannot be said for forests in other parts of the world. The Lacey Act (which protects plants and wildlife) was amended in 2008 to require buyers and sellers to verify legality, no matter where the fiber originated.

Recycling Movement

The [U.S.] Direct Marketing Association, the Magazine Publishers Association and the National Recycling Coalition have advanced labeling programs that encourage consumers to “please recycle” catalogs, magazines and discarded mail – helping to increase recovery rates for mixed paper by more than 700 percent since 1990. Even the USPS has joined the recycling push, with 8,500 local postal facilities exhorting mail recipients to “read, respond and recycle” while collecting mixed paper for recycling in its lobbies. Today, two-thirds of U.S. communities now have municipal recycling options for mixed paper – enabling such recycling collection messaging upon all printed material.

Green 15 Association

The Direct Marketing Association, which includes 3,000 corporate and nonprofit member organizations, has adopted a set of environmental principles – the Green 15 – which calls on its members to adopt responsible environmental practices in list and data management, paper procurement, printing and production, fulfillment and pollution prevention. The association offers an online Environmental Planning Tool that features more than 115 suggested practices to help members attain the Green 15. While much of these DMA resources focus on mail and printed media, they also wisely encourage responsible practices in data centers and digital media – recognizing their respective environmental impact.



Being Digital:

Stepping Up to Our Environmental Responsibility Here, Too

Email Communications

Often enough, the footer of an email in the mailbox may have an environmentally inspired message, “please consider the environment before printing this message.” As if the mere act of printing such messages – with its inherent use of paper – makes such an act environmentally questionable. As noted, this really depends upon where the paper originates and how it was produced, and if recycling collection exists to capture and reuse the fiber.

However, those who truly advocate “being green” with accuracy might modify this message today, or take it in a new direction: “please consider the environment when forwarding, responding to, or printing this message. Electronic communications have an environmental footprint as well due to the energy intensity of the required infrastructure.”

Green IT Movement

While this statement may seem outlandish, there are many information technology leaders and companies who recognize its honesty — hence, the Green IT movement. They are motivated to increase the efficiencies of digital media, as well as the equipment and infrastructure that support them. They are being joined by the U.S. Department of Energy and the U.S. Environmental Protection Agency, both of which are concerned about the electric power required to operate and cool data centers, as well as run computers, servers, routers and other computer equipment. Additionally, the materials used to create such equipment also present environmental challenges – both in manufacture and in end-of-life disposal and recycling.

In an EPA report issued in July 2007, “Report to Congress on Server and Data Center Energy Efficiency (Public Law 109-431),” in conjunction with its ENERGY STAR program for conservation and efficiency,

the EPA reported:

“Under current efficiency trends, national energy consumption by servers and data centers could nearly double again in another five years (i.e., by 2011) to more than 100 billion kWh (Figure ES-1), representing a \$7.4 billion annual electricity cost. The peak load on the power grid from these servers and data centers is currently estimated to be approximately 7 gigawatts (GW), equivalent to the output of about 15 baseload power plants.”

The report further stated that total electricity consumed by servers in U.S. data centers (including cooling and auxiliary infrastructure) represented about 1.5 percent of the nation’s entire electricity use in 2006. This is a primary reason why a current effort is underway to create an ENERGY STAR certification for the entire data center, with the certification process expected to be implemented in as early as 2010.

Data Center Dilemma

Clearly, policymakers and industry leaders are concerned about the impact data centers have on the nation’s power grid. As data centers explode in number (and support far more than simply communications), government and industry will have to attain greater efficiencies in IT to conserve energy, while finding more sustainable power sources to meet the nation’s total electricity demand.

Additionally, McKinsey & Co. reports that data centers worldwide generate roughly half of that of the airline industry – with CO2 emissions from data centers expected to grow from 80 megatons in 2007 to 340 megatons in 2020.

Email Spam & Climate Change Effects

In another study, commissioned by McAfee and conducted by ICF, the climate-change effects of email spam were considered – which helps to shed light on legitimate email messaging. The average email spam causes emissions equivalent to 0.3 grams of carbon di-



oxide per message – and in 2008, there were 62 trillion such messages. Taken together, all these email messages caused the carbon dioxide equivalent of driving a car around the Earth 1.6 million times. Nearly 80 percent of energy consumed associated with spam comes from end users and their computers and mobile devices – all of them busy deleting spam and searching for legitimate email (false positives) in the spam mailbox. Spam filtering accounts for 16 percent of spam-related energy use – and if everyone and every organization employed spam filtering, the total energy used to deal with spam would be reduced by 75 percent per year.

Toxicity of Computer Hardware

Reducing the toxicity of computer equipment, in their production and end of life, is another environmental concern of government and business. Heavy metals and chemicals which once plagued the printing industry – copper, chromium, cadmium, nickel, mercury, and lead, among others -- are included in many types of today's computer equipment, presenting challenges for recovery, as well as increasing the potential for hazardous contamination in landfills and recycling.

Power Sources of Print and Digital Manufacturing Processes

And both print and digital media producers and users need to consider their power choices. Paper companies largely power their manufacturing operations using biomass, a residual product from harvested wood and paper production that is readily accessible and greenhouse gas-neutral. Data centers that require constant temperature control for optimal efficiency, as well as electricity to run equipment, also may be powered by a renewable resource – hydroelectric, solar or wind, among others – or may be dependent on a local utility that produces electricity using fossil fuels (oil, coal or gas) that are greenhouse gas emission-intensive. In print or digital, where your facility is located and how it is powered matters, and purchasing carbon offsets to account for greenhouse gas emissions should be the environmental management practice of last resort.

Fact-Based Choices for a Sustainable Planet

The choice between digital and print media (or any other form for communication) is not about environmental advantage of one medium or another. Brands need to be where their customers are – and, today, that means all media categories where consumers, businesses and organizations interact and transact. Because all media choices carry environmental trade-offs and costs in energy, materials and resources, companies and organizations seeking to improve their environmental footprint need to manage all of them in a fact-based, proactive manner.

What's more, the dire consequences of not reducing the environmental impacts of any manner of commercial enterprises have necessitated widespread government involvement. According to Institute for Sustainable Communication Senior Research Fellow Don Carli's April 11, 2009 article, "Which Medium is More Sustainable? Paper or Digital?"

"Over the next few years it can be expected that life-cycle data and the carbon labeling of all products will move from the margins to the mainstream. In part this will be due to the high priority that the current administration in Washington has placed on carbon cap and trade legislation, and regulation of greenhouse gas emissions. In addition, there is already broad support for voluntary initiatives such as the Carbon Disclosure Project and Carbon Trust labeling initiative."

Whether the goal is to increase operating efficiencies, reduce carbon equivalents, protect brands or ideally a combination of all three, the right course of action is to investigate, educate, inform and measure – and then, only then, communicate what indeed it means to "go green."



To learn more about how NewPage is the leading supplier of certified and recycled papers, or to request a copy of our Sustainable Development Report, please contact NewPage ExSamples at 800-638-8813.



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