News advisory

# HP Advances Initiatives and Solutions Supporting Sustainability in Print Communications

PALO ALTO, Calif., Sept. 14, 2009 – HP today announced comprehensive progress in its initiative to advance the ways the global graphic arts industry can lessen its environmental impact through the adoption of digital print technologies.

HP, which recently became the first-ever platinum sponsor of the graphic arts industry's Sustainable Green Printing Partnership, offers new information and solutions that can help its print service provider (PSP) customers and the graphic arts industry drive productivity, reduce expenses and reduce waste, including:

- A newly available, technical HP white paper outlining the significant carbon-emissions reduction opportunities possible by combining digital print adoption with progressive media sourcing strategies
- New, higher-volume production printing solutions – the HP T300 Color Inkjet Web Press and HP Indigo W7200 Digital Press – that are designed to cost-effectively transition a greater portion of commercial printing work done on less efficient analog devices
- For signage and graphics printing, water-based HP Latex Inks, which provide key benefits of low-solvent ink technology without the typical environmental, health and safety considerations
- An HP Carbon Footprint Calculator for printing utility that has been updated to support HP Designjet large-format printers used in technical, design professional photography and fine-art output applications
- A range of recycled and recyclable media for HP digital presses, large-format design printers, and signage and graphics printing solutions, in addition to more than 800 media for HP Indigo presses that have a third-party sustainability-related certification.

In addition, there are emerging, third-party research developments that substantiate and broaden the industry's technical understanding and implementation of de-inking of digital printing, a key step in the paper recycling process.

"Digital on-demand printing reduces make-ready waste, and its ability to print exactly what is needed when it is required can reduce the volumes of printed materials that are destroyed before they are ever used," said Michael Hoffmann, senior vice president, Graphics Solutions Business, HP. "HP offers solutions designed with the environment in mind so everyone may continue to enjoy the advantages of paper-based communications, albeit with a much smaller footprint."

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**Potential for a substantial reduction in print's carbon footprint**
The analog-to-digital printing transition presents an opportunity for significant reductions in waste and inventory that can help the printing industry minimize its environmental impact. HP estimates that 90 percent of the world's current analog printing carbon footprint can be addressed by digital printing solutions.

"Reducing the Greenhouse Gas Emissions of Commercial Print with Digital Technologies," a technical white paper on digital printing's carbon-emission reduction potential, is now available in the "energy tips" section of the HP Eco Solutions website Tips & Tools page. Written by Scott Canonico of HP, and Royston Sellman and Chris Preist of HP Labs, the white paper quantifies greenhouse gas emissions caused by inefficiencies in current commercial and office print applications and describes improved business models built on digital print and distribution technologies to conserve paper and enable emissions reductions.

According to HP analysts, the widespread adoption of digital printing by 2020, when combined with optimal paper supply sourcing strategies outlined in The Climate Group's landmark *SMART 2020* report,[1] could result in a reduction of 30 percent or more in the world's carbon-dioxide emissions, which is comparable to the estimated benefit achieved through a global transition to efficient vehicles.

**Bringing digital's environmental advantages to longer-run environments**
Using advanced, next-generation imaging platforms, new digital presses from HP have raised the run-length breakeven point where digital production is more productive than analog.

Available this year, the new, 30-inch-wide HP T300 Inkjet Web Press pairs proven Scalable Printing Technology thermal inkjet imaging with a writing system designed for reliable pixel printing, giving PSPs the ability to drive profitable growth by offering addressable 1,200 x 600 dots-per-inch imaging in a speed and size combination that can produce 2,600 letter-size pages per minute (ppm). The press, which completed its first customer-site commercial installation in December 2008, is designed for publishing applications, as well as transactional/transpromotional and direct-mail printing.

**Re-writing the book on waste in publishing applications**
Two of the world's leading book manufacturers, CPI in France and Courier Corp. in the United States, are scheduled to install the press by the end of 2009 to produce medium-run-length titles.

Without the HP T300 Inkjet Web Press platform and partner finishing solutions, titles in this run-length range would typically be printed in excess quantities with a high percentage of waste to meet offset printing's economies of scale. In fact, in the analog print-dominated book manufacturing industry, waste is often very significant: at present, up to 30 percent of book stock in the industry remains unsold and is eventually repulped.[2]

Thanks to their water-based design, HP pigment inks for the HP Inkjet Web Press platform are non-flammable and non-combustible.[3] HP's experience in high-performance water-based ink design has enabled the company to avoid Hazardous Air Pollutants (HAPs) in the ink.[4]

The new HP Indigo W7200 Digital Press – a roll-fed liquid electrophotographic printing (LEP) dual-engine solution available this month – combines proven HP Indigo offset quality with the productivity required to excel in a variety of applications, including on-demand and short-run book printing, photo specialty printing,[5] high-volume personalized color direct-mail campaigns, and high-value transpromotional statement printing.

The HP Indigo W7200 press's 12.5- x 38.6-inch (317-mm x 980-mm) image area and its ability to print on virtually any standard, off-the-shelf paper also enable the printing of products such as folders, folding mailers, folding albums and book jackets previously manufactured using analog processes.

HP Indigo presses have been progressively engineered for reduction in waste and energy consumption. The HP Indigo 5500, 7000 and W7200 presses include an on-press oil recycling system that reduces the overall use of imaging oil by approximately 50 percent.[6] And, because of significant productivity enhancements, the HP Indigo 7000 and W7200 digital presses require approximately 25 and 40 percent less electricity per printed page, respectively.[7]

**In a greener world, print-on-demand is in demand**

Digital presses and on-demand printing have a number of intrinsic environmental benefits. With digital, PSPs avoid the waste associated with make-ready and change over between jobs.

In addition, the ability to print exact quantities of jobs – as opposed to overruns needed to meet analog printing economies of scale – reduce the number of printed pages that are never used. In direct mail and other marketing collateral applications, the higher response rates of digital-enabled personalization lets marketers achieve effective results while printing fewer pieces.

For publishing applications and other uses, decentralized distribute-and-print models allow digitally printed materials to be produced in multiple locations that are close to the point of end use, reducing the level of emissions associated with fuel used in transportation.

After studying digital printing's benefits, leading publishing companies that PSPs serve are making serious considerations about the potential to transition some of the printed materials they purchase to digital printing.

"Based upon our initial analysis, we believe that we could cut the amount of paper used to print our books by around 15-20 percent a year by leveraging the efficiency and flexibility of digital on-demand printing," said Marianne Fairclough, vice president of corporate paper operations at publishing company Pearson plc.

**Recycling: A reality that's happening today with digital**

De-inking and recyclability are important aspects of environmentally responsible printing, and HP is aware of the importance of having de-inking processes that provide quality fiber in high yields. To ensure this, HP has committed resources to work with experts in the industry, including the Centre Technique du Papier (CTP) in France, Paper Technology Specialist in Germany, and Western Michigan University in the United States. HP is also a member of the Digital Print Deinking Alliance, an organization

founded in 2008 to assess the de-inkability of inkjet-printed papers.

Current research findings support the fact that many paper recyclers are successfully using digitally printed papers in their process today. For HP ElectroInk version 4.0, the liquid ink used in HP Indigo presses, lab results from CTP research conducted in the spring of 2009 show de-inkability performance that exceeds established goals on five out of six papers tested.[8]

For inkjet-printed papers, HP research and early-stage external studies offer preliminary evidence about aggregation-enhancing materials and their potential to further enhance de-inkability. These types of materials – which include the bonding agent used in the HP T300 Inkjet Web Press platform – could potentially be used to aggregate the sub-micron particles of inkjet ink into larger-mass units, simplifying their removal from pulp in the de-inking process.

**Reducing signage and graphics printing's environmental impact**

HP has the world's broadest portfolio in large-format printers, including innovative technologies for sign and graphics printing. HP Latex Inks, used with the HP Designjet L65500 Printer, provide the features and benefits that help create an improved environment for high-speed, production-volume large-format printing. The HP Designjet L65500 Printer and HP Latex Inks offer PSPs a compelling alternative, reducing the environmental impact of printing while delivering quality and durability at breakthrough print speeds.[9]

The 104-inch-wide printer offers signage and graphics firms a versatile system that can produce a broad range of indoor and outdoor applications with water-based HP Latex Inks. Prints produced with HP Latex Inks are odorless[10] and emit extremely low levels of VOCs. No special ventilation is required.[11] These non-flammable, non-combustible inks[12] contain no HAPs[4] and do not have hazard warning labels.

**New carbon footprinting tools for large-format technical and design printers**

HP Designjet large-format printers for technical printing, design, professional photography and fine art output applications print with water-based inks and can now be used with the HP Carbon Footprint Calculator for printing.

The calculator, which has been available for users of HP inkjet and LaserJet office printers since 2008, evaluates the energy consumption, paper use, carbon output and the associated monetary costs of customers' printing environment to help them understand how they can reduce their environmental impact through responsible printing.[13]

**A variety of media choices to support graphic arts sustainability**

To further support customers' sustainability efforts through the industry's broadest large-format printer portfolio, HP recyclable[14] large-format media can be returned through the HP Large Format Media take-back program.[15] In addition, HP Photo-realistic Poster Paper can be recycled with cardboard.

Another HP large-format media, HP Recycled Bond Paper, reduces the impact of printing on the environment and is designed for the everyday printing needs of technical applications. Produced with 100 percent recycled base paper from post-consumer waste papers, chlorine-free HP Recycled Bond Paper can help HP Designjet users comply with

environmental policies set by their organizations and clients and offers high-quality, trouble-free performance at a competitive price.

The HP Inkjet Web Press supports a range of recycled uncoated media, and the HP Indigo W7200 and w3250 digital presses support virtually any standard uncoated recycled media.

In addition, HP Indigo digital presses such as the 7000, 5500, WS6000 and ws4500 models print on more than 800 media that have a third-party sustainability-related certification, such as Sustainable Forestry Initiative, Forest Stewardship Council and Chain of Custody. Approximately 55 percent of these media containing these types of third-party certifications are recycled-content papers. Overall, the number of HP Indigo-qualified media that have recycled content and/or a third-party sustainability certification grew by 30 percent between Q3 2008 and Q3 2009.

**Helping customers enjoy a Sustainable Green Printing Partnership**

Through its Graphics Solutions Business, HP has engaged with the Sustainable Green Printing (SGP) Partnership sustainable printer certification organization to become the first SGP Platinum Partner.

The SGP Partnership is an independent, non-profit certification organization devoted to encouraging and promoting participation in the worldwide movement to reduce the environmental impact and increase the social responsibility of the print and graphic communications industry. HP's sponsorship will help keep membership costs low for PSPs that want to participate in the program.

"The SGP Partnership is pleased to have a major corporation such as HP become a platinum level SGP Patron," said Marcia Kinter, board chair, SGP Partnership. "It clearly indicates HP's strong support to promote sustainability within the graphic communications industry."

**HP and the environment**

For decades, HP has been an environmental leader, driving company stewardship through its HP Eco Solutions program. HP influences industry action by setting high environmental standards in its operations and supply chain by providing practical solutions to make it easier for customers to reduce their climate impact and through its research on sustainability solutions that support a low-carbon economy. More information on HP's Eco Solutions program is available at www.hp.com/ecosolutions.

**About HP**

HP, the world's largest technology company, simplifies the technology experience for consumers and businesses with a portfolio that spans printing, personal computing, software, services and IT infrastructure. More information about HP (NYSE: HPQ) is available at http://www.hp.com/.

(1) SMART 2020: Enabling the low-carbon economy in the information age. The Climate Group Global e-Sustainability Initiative. London, 2008. Available at http://www.smart2020.org.

(2) "Developments in book production," by Sean Smyth, Pira, 2007.

(3) HP water-based pigment inks and the bonding agent for the web press are not classified as flammable or combustible liquids under the USDOT or international transportation regulations. These materials have been tested per U.S. Environmental Protection Agency Method 1020 and the flash point is greater than 110 degrees Celsius.

[4] The inks were tested for Hazardous Air Pollutants per U.S. Environmental Protection Agency Method 311 (testing conducted in 2008) and none were detected. HAPs are air pollutants that are not covered by ambient air quality standards but that, as defined in the Clean Air Act, may present a threat of adverse human health or environmental effects.

[5] Upgrade kit for photo specialty applications available in 2010.

[6] Compared to the HP Indigo press 5000.

[7] Comparisons between the HP Indigo 7000 and the HP Indigo presses 5000 and 5500, and between the HP Indigo W7200 and the HP Indigo press w3250.

[8] "Sustainable Digital Print Solutions: Deinkable Inks, Papers, and Optimized Deinking Processes," Nils Miller, HP. Centre Technique du Papier research, presented at TAPPI PaperCon '09. Measurement is for speck contamination of pulp with a goal of 500 parts per million square meters or lower.

[9] In the price/performance category for which printers based on HP Latex Printing Technologies are intended.

[10] Printers using HP Latex Inks use internal heaters to dry and cure the latex polymer film. Some substrates may have inherent odor.

[11] Special ventilation is not required to meet US OSHA requirements on occupational exposure to VOCs from HP Latex Inks. Special ventilation equipment installation is at the discretion of the customer – no specific HP recommendation is intended. Typically no air discharge permitting required with HP Latex Inks. Customers should consult state and local requirements and regulations.

[12] HP water-based Latex Inks are not classified as flammable or combustible liquids under the USDOT or international transportation regulations. These materials have been tested per the Pensky-Martins Closed Cup method and the flash point is greater than 110 degrees Celsius.

[13] The HP Carbon Footprint Calculator for printing generates estimates of energy consumption during use of a printer, emissions of carbon dioxide from production of that electricity, and carbon dioxide emissions from production of estimated volumes of paper consumed during printing (i.e., estimated CO2 from electricity production and CO2 from paper production). It is based on certain key assumptions and makes use of data and models generated by third parties. For more information visit: www.hp.com/go/carbonfootprint.

[14] Recycling opportunities for this product are currently available only in limited areas. Customers should consult local recycling resources.

[15] Program availability varies.

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