

# Printing for Free

*This article introduces print innovations as one of the 100 innovations that shape "The Blue Economy". This article is part of a broad effort to stimulate entrepreneurship, competitiveness and employment.*

## The Market for Print

The global market for printing is forecast to reach \$724 billion by 2014. By then Asia is expected to become the world market leader surpassing North America which is still good for 31 percent. The emerging continent is expected to hold just under 35 percent of the market in three year's time. Whereas the US market in value is declining from \$198 to \$186 billion in sales over the next five years, so do the Japanese, British, German and French markets. On the other hand, the print market in China will leap from \$59 to \$98 billion from today by 2014, representing the only bright spot tipping the world's print business on an continued path of expansion. The only other major exception to the global trend from print to electronic is India, that will advance from \$16 to \$23 billion while Brazil is scheduled to expand from \$15.5 to \$20.5 billion.

The global print market is dominated by commercial materials, mainly for advertising and sales. This market commands nearly half of the world's value, however it is in decline spurred by the strong shift towards digital media. Package printing on the other hand represents nearly 30 percent of the turnover, and is growing across the board even in North America and Europe. Newspapers only represent 5.5 percent of the print business suffering a fast drop in sales just like copy shops and quick printers that once marked entrepreneurial initiatives at a local level in the 80s and the 90s. Whereas the recycling of newsprint is popular and has reached a record high 63 percent, the most important shortfall in the recovery of fiber print is in packaging. For example, only 20 percent of the 150 billion Tetra Pak liquid packaging recycles the cardboard fibers today. The rest, including low density polyethylene and prime quality aluminum is wasted along with its inks and coatings.

The global market for print inks is forecast to reach 3.7 million tons worth \$16.4 billion by the year 2015. The major factor propelling growth includes an increased demand for print inks from packaging where marketing experts are commanding ever brighter images. Whereas Europe is only the third region for printed paper, it is the largest market in terms of volume for inks, whereas the US still constitutes the dominant market in terms of value. By 2015, it is expected that Europe will emerge as the largest ink market on all counts. This is amongst others a reflection of the stringent environmental rules that the European authorities impose on the use, distinguishing it from the cheap inks used in the emerging economies. Europe is also requiring industry to improve the environmental impact caused by the disposal of inks. This has spurred amongst others the interest in vegetable oils rather than petroleum based

products, even at a higher cost. However, many genetically manipulated soy inks are still permitted (and likely) to contain petroleum, whatever the impression given on the label.

## **The Innovation**

Paper and ink still contain heavy metals such as zinc and copper, even though the overall amounts of heavy metals have been reduced so that the toxins are in quite small amounts. Newsprint, including colored newsprint and cardboard boxes are considered safe, even for mulching in the vegetable garden. It are the glossy inserts, shiny paper advertisements, magazines, colored adverts and flashy packaging that contains metal oxides. Worse this type of print material is often laced with plastic coatings to avoid “de-inking” before or during use. This does complicate recycling afterwards since the removal of ink from fibers is more time consuming, requiring additional chemicals. Whereas recycling has been quite successful, and has saved millions of trees, the industry has had great difficulty to find higher value uses for either the recycled fibers or the recovered ink. The cascading of fibers into new markets has not reached beyond the niche applications like the one of sound insulation commanding a lower price than recycled cellulose in spite of its shorter fibers.

Pamela Salazar Ocampo graduated as an industrial designer in 1999 from the Autonomous University of Manizales, Colombia. She developed a gift for architectural designs in bamboo and documented with her sister Carolina the detailed construction techniques Simon Velez used for the building of the ZERI Pavilion, first at the Recinto de Pensamiento of the Caldas Committee of the Coffee Federation of Colombia, and then at the World Expo in Hannover. The designs of Pamela and Carolina secured a building permit for the first time ever in Germany for a structure made out of bamboo. While working at the ZERI bamboo Pavilion at the World Expo as a graphic designer coordinating all visual communications, Pamela was challenged by the need to produce short stories about the philosophy of zero emissions in print at low cost. She went on to study the printing, paper and ink production process and realized that large printing presses always have a control strip of paper reserved checking the quality of the print and the combination of colors. She redesigned the graphics in order to make full use of all paper including the cut-offs, while giving value to the control strip and the spent ink, creating folded booklets. A minute rearrangement of the graphics on the sheet permits the production of children stories at the cost of folding only. A booklet could be made available for every child at a cost under one cent per copy.

## **The First Cash Flow**

The fable “The Strongest Tree” written by the author of The Blue Economy was translated into 27 languages and printed in over one million copies, free of charge using available paper and ink from the presses that were turning out information and documentation for the visitors of the world expo. The paper strips which were traditionally cut off and recycled were now upcycled into gifts for children that could be distributed for free. It was used as a token to create awareness, and even as a fundraising tool since parents and friends receiving this for free were enticed to give back. Use what you have, generate more value from something that is considered waste and provide social benefits are key characteristics of The Blue

Economy. The graphic design of the fables is probably one of the first hands-on experiences and concrete initiatives implemented in the spirit of innovations that create new business models.

### **The Opportunity**

The use of control strips for print has puzzled graphic designers for years. As long as one sticks to the traditional formats for annual reports, the control strip would be considered too small. When on the other hand the graphic design incorporates the strips, and even enlarges the space available to them by reducing the annual report of the bank or the maintenance manual for the machinery supplier with a few millimeters on each side, then a comfortable space is created for a tiny booklet. Recently, the Government of the Balearic Islands (comprising of Mallorca, Menorca, Ibiza and Formentera) has agreed with the local industrial printer to secure the distribution of 36 fables to 92,000 children between 3 and 10 years using the technique imagined by Pamela, good for 3.3 million free copies.

Governments are suffering from major cutbacks. Budgets are under stress everywhere and the department of education is not spared. However, this basic approach to “printing stories for free” overcomes the typical drawback of reductions in public funding, especially in a cash strapped country like Spain. It is expected that the case of the Balearic will spread to other nations where demand for innovation in education is high, internet and iPads are not available to all, and thus this traditional form of communication could well open avenues for millions of children around the world to be inspired. Whereas the number of copies printed and distributed may have topped the 100 million mark over the past decade, it is only a minute droplet compared to the world’s potential. If the big communicators delivering print to consumers were to evolve from recycling to upcycling their waste paper at the point of print using a smart graphics design, then a billion of children could be exposed to these simple one on one tool of communication each day. Of course, to achieve that we need a new generation of entrepreneurs and graphic engineers.

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... Further information on the 100 innovations at [www.theblueeconomy.org](http://www.theblueeconomy.org).

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