

The print technology that tackles wasteful printing habits

With demand for paper rising, so too are deforestation and waste. Israeli company ePaper's innovative technology encourages minimizing paper use.

By [Neta Nissim and Max Kaplan-Zantopp](#) FEBRUARY 16, 2021, 8:27 AM

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Have you ever considered how many kinds of paper we use and handle every day?

Newspaper, office-printed paper, tickets, bills, banknotes, receipts, books, napkins, bags, food packaging, toilet paper, and health certificates (especially during the Covid-19 pandemic) are some of the common paper-based products we hardly give a second thought to.

As of 2018, the total global production of paper and cardboard was about [420 million tons per year](#), but this amount is expected to rise.

In fact, researchers speculated this number would reach [490 million tons](#) by 2020. For a world so entrenched in the digital age, this amount feels excessive and unnecessary.

To make matters worse, [45%](#) of all paper printed in offices ends up trashed the same day, according to [The Paperless Project](#), a coalition of companies changing the way organizations and businesses use paper and e-content.

“The paper production process requires very large amounts of energy and water,” says [Prof. Ofira Ayalon](#) of the Department of Natural Resources and Environment at the University of Haifa and Director of the Environment at the [Samuel Neaman Institute](#).

Although most of the wood used to make paper is planted and cultivated for this purpose, the cost to maintain growth and reach desirable quality outweighs the benefits.

“Ultimately, you invest more resources into wood than you get from it, whether it's water, fertilizers or pesticides. In a net calculation, forests need a lot of resources,” she says.

Monitoring the whole printing process

Fortunately, Israeli company [ePaper](#) has developed technology that can reduce the environmental footprint of office work, including paper consumption.

ePaper's solution to excessive paper consumption focuses on reducing consumption at the source by developing solutions for tighter security and control printing systems in large businesses and organizations.

"Our technology is unique in that it handles the entire array of prints, printers, document management and distribution methods," says Belal Lehwany, founder and CEO of ePaper, who has established three different printing companies in the last 15 years.

"First, it turns the printing operation into a generic operation. In other words, the document is not sent to a particular printer, but to a virtual printer from which it can be pulled to any printer within the particular organization."

"The approach to reducing paper use not only addresses paper consumption in offices, but it also has an impact in other areas," says Shiri Hefer, environmental economist at [DHVMED Environmental Consulting and Engineering](#).

"For example, printers have significant energy consumption costs. Therefore, choosing a quality machine with good energy efficiency can save about 43% of office power consumption."

"We made the whole printing process monitored," says Lehwany. "The organization has the ability to know who printed, what was printed, when, and how much. Thus, people develop awareness, thought, and personal responsibility for the printed content and the amount of paper they consume at work.

"The system can generate reports that quantify the amount of paper and energy consumed in the company in a given period and even calculate the corresponding amount of wood that was cut, the amount of energy consumed and saved, and how much toner is consumed and saved," he explains.

According to company data, customers using this technology saved an average of 35% in paper pages.

“For example, a company in Phoenix that uses our technology sent about 40 million pages for printing in about four years. Following the transition to our technology, they saved about 8 million unprinted pages,” says Natalie Searle, ePaper’s vice president of operations.

“Based on our calculations, the company saved 800 trees. In addition, it also reduced carbon dioxide emissions and saved energy and money.”

Plight of the paper industry

Many products and services we freely use today—for instance plastics, electricity and transportation all have environmental costs that get overlooked because of demand. Paper is no different.

The paper industry is considered one of the [most polluting industries](#) as it is responsible for creating large amounts of solid and liquid waste during production and throughout [paper’s entire lifecycle](#).

The production process also causes the release of many environmentally hazardous substances, such as chlorine compounds, effluents, inks and bleach, which often pollute nearby land and water supplies.

Producing paper also takes [twice the amount of energy](#) used to produce a plastic bag.

It’s also no surprise that paper demand encourages deforestation and rising concentrations of atmospheric carbon dioxide as a result.

In the United States, for example, the paper industry is the [fourth largest source](#) of greenhouse gas emissions among manufacturing industries and contributes [9%](#) of total manufacturing carbon dioxide emissions.

About [93%](#) of the raw material for paper production comes from trees, and about 42% of all the trees felled in the world are used to make paper.

Research also shows that one average-sized tree yields roughly 8,000 white pages after production. Improvements in pulp processing technology have enabled nearly all types of trees, softwood and hardwood species, to be harvestable for paper production.

Paper production is also water intensive. Producing just one standard sheet of A4 paper requires a minimum of 1.5 cups of water. To produce one standard ream of 500 sheets takes more than 177 liters (750 cups) of water at least.

Less printing, more awareness

According to The Paperless Project, the amount of paper an average business uses grows by [22%](#) per year as of 2017, which means office paper consumption doubles within 3.3 years.

To get paper use under control, entrepreneurs and companies are trying to reduce paper waste and change printing habits. In addition, many companies and factories are engaged in paper recycling—turning used paper into pulp and turning that into the highest quality paper as possible.

However, according to Ayalon, even recycled paper is not free of environmental damage.

“It’s true we save paper from being wasted in a landfill, but the recycling process requires the use of lots of energy to collect the paper and transport it to the recycling plant. And very large amounts of water are used in this process as well, which creates paper sludge, a waste that needs to be disposed of. This too must be taken into account,” she says.

Hefer says eco-friendly companies should not settle for just one technical solution. Rather, they should adjust other areas within their offices that promote wasteful tendencies.

“For example, companies can set to switch to two-sided printing only, use large computer screens in meetings instead of printing whole documents, choose toners that can be filled several times, use smart office management systems, and more,” Hefer adds.

“What is particularly successful with a paperless office approach is that the transition and change in corporate culture doesn’t add to the company’s expenses. In fact, it saves money in the long run because these technologies are not particularly expensive today,” concludes Hefer.

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