De La Salle University – Dasmariñas

E INK TECHNOLOGY:

AN ALTERNATIVE FOR NEWSPAPERS, MAGAZINES AND BOOKS

An Undergraduate Thesis

Presented to

the Faculty of the College of Technology

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In Partial Fulfillment

of the Requirements for the Degree

Bachelor of Science in Industrial Technology

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ABSTRACT

Name of Institution: **De La Salle University – Dasmariñas**

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TITLE: **E Ink Technology: An Alternative For Newspapers, Magazines and Books**

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OBJECTIVES OF THE STUDY:

A. GENERAL

This study aimed to give information regarding the latest breakthrough in technology regarding information dissemination.

B. SPECIFIC

To introduce E Ink Technology as possible reducer of paper and printing cost. It will not actually replace paper but co-exist with it and other materials used for displays and mediums of delivering news and information.

SCOPE AND LIMITATION:

The study was conducted to introduce the future use of electrophoretic ink that can radically change the way we read. At present, news were printed on newspapers, fashion updates on magazines and novels are read from books. E ink is the technology of the future, today. The study may not have the detailed data regarding how e ink is made but only how it works. The only information presented here that can be related to e ink is about liquid crystal display (LCD) and how it works.

METHODOLOGY:

The method used in this research is descriptive method. It is concerned with conditions of relationships that exist; practices that prevail; beliefs, processes that are going on; effects that are being felt, or trends that are developing. E ink is the latest in technology that will have a big use now and in the future.

Data was gathered mostly by surfing the Net and downloading information from different web sites. Some books from the school library were also used as reference for this study.

MAJOR FINDINGS:

E Ink is made from the basic materials like the ordinary ink and paper. Reading in a paper coated with e ink looks like reading the regular paper. It has a wide viewing angle and bright paper-white background. It is very versatile because it can be printed on almost any surface, be it on plastic, on metal and specially on paper. It can also be coated over large areas but having cheaper cost.

E ink can be compared to the existing liquid crystal display, also known as LCD. LCDs are thinner, lighter and are commonly used in laptop computers, digital clocks, watches and calculators.

We learned in school that there are three common states of matter: solid, liquid or gaseous. Solids act the way they do because their molecules always point the same way and stay in the same position with respect to one another. The molecules in liquids are just the opposite: They can point in any direction and move anywhere in the liquid. But there are some substances that can exist in an odd state that is sort of like a

liquid and sort of like a solid. When they are in this state, their molecules tend to point the same way, like the molecules in a solid, but also move around to different positions, like the molecules in a liquid. This means that liquid crystals are neither a solid nor a liquid. That's how they ended up with their seemingly contradictory name.

So, do liquid crystals act like solids or liquids or something else? It turns out that liquid crystals are closer to a liquid state than a solid. It takes a fair amount of heat to change a suitable substance from a solid into a liquid crystal, and it only takes a little more heat to turn that same liquid crystal into a real liquid. This explains why liquid crystals are very sensitive to temperature and why they are used to make thermometers and mood rings. It also explains why a laptop computer's display may act funny in cold weather or during a hot day at the beach!

E ink reacts to positive or negative charge while liquid crystal display (LCD) is affected by electric current. They can both act predictively but E ink is thinner and lighter than an LCD. E ink-based displays are more convenient to use because surfaces coated with E ink can be updated continually with new information.

E ink can be compared to pagers and cellular phones. E ink displays are like messages received in pagers and text messages from cellular phones that can be changed or updated regularly and continually.

Estimated cost of an e ink paper

Its cost may also be compared to a regular cell phone maybe around **Php 7000** plus the expense for subscribing daily and monthly for newspapers and magazines respectively.

CONCLUSION AND RECOMMENDATION:

The thesis writers conducted this study to introduce the future use of electrophoretic ink that can radically change the way we read. At present, news were printed on newspapers, fashion updates on magazines and novels are read from books. E ink is the technology of the future, today.

E ink moves information display to a higher and dynamic level with more benefits and advantages over traditional media. Moreover, e ink – based displays will offer unlimited design freedom low cost, clarity and readability.

E ink has superior look because it's made from the same basic materials as regular ink and paper. It retains the superior viewing characteristics of paper, including high contrast, wide viewing angle, and bright paper - white background. E ink is versatile because it can be printed on almost any surface, from plastic to metal to paper. It can also be coated over large areas cheaply. E ink is a real power miser. It displays an image even when the power is turned off and it's even legible in low light reducing the need for a backlight. This can significantly extend battery life for portable devices. Lastly, e ink process is highly scaleable, which makes it competitive against today's older technology.

E ink may be a little far-fetched but not impossible. Introducing this to the market may actually reduce paper cost and printing cost. It will also be very convenient to those people who loves to read and acquire additional information. It will not actually replace paper but co-exist with it and other materials used for displays and mediums for information dissemination.

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