ROLE OF BLACK GOOGLE TOWARDS ENERGY CONSERVATION

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Abstract

Today it is observed that there are lots of reasons which effects environment. One of them is Computer or Laptop or media we are using for communication over internet. It is observed that using these there is energy consumption which in turn responsible in climate change. To reduce energy consumption GOOGLE provide an innovative solution "BLACKLE". Although it is not related to Google the site does use our custom search engine.

Keywords

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Paper Identification

1. Introduction

Black Google Mobile search saves battery power, loads faster, uses less bandwidth which saves money, reduces eye strain and looks awesome! Give your battery a break by searching with Black Google Mobile at bGoog.com, the first battery saving search for mobile phones powered by a lightweight Google Custom Search engine. Black is green with our energy saving search that delivers normal organic web search results and image search results directly from Google with a black background that draws less power than the traditional white background. Any smartphone or desktop computer can benefit while searching. AMOLED display based phones have the greatest known savings with some displays using seven times less power!

Searching in black is another easy way to conserve at a time when most people are frustrated with their mobile battery life because devices are using more power than ever before. For the best results, set bGoog.com (pronounced "bee-goog") as your default mobile home page. Doing this will ensure every time your browser loads you will be saving energy and bandwidth, one search at a time! Every little bit helps and it adds up to a massive energy savings with lots of people using it.

2. Concept

The concept behind Blackle is that computer monitors can be made to use less energy by displaying much darker colors. Blackle is based on a study which tested a variety of CRT and LCD monitors. There is dispute over whether there really are any energy saving effects, especially for users of LCD screens, where there is a constant backlight. This concept was first brought to the attention of Heap Media by a blog post, which estimated that Google could save 750 megawatt hours a year by utilizing it for CRT screens. The homepage of Blackle provides a count of the number of watt hours claimed to have been saved by enabling this concept.

3. Is Black the New green

Reducing climate change by saving energy is an important effort we should all join, and that's why we're very glad to see the innovative thinking going

into a variety of solutions. One idea, suggested by the site called "Blackle" (which is not related to Google, by the way, though the site does use our custom search engine), is to reduce energy used by monitors by providing search with a black background. We applaud the spirit of the idea, but our own analysis as well as that of others shows that making the Google homepage black will not reduce energy consumption. To the contrary, on flat-panel monitors (already estimated to be 75% of the market), displaying black may actually increase energy usage. Detailed results from a new study confirm this.

As computers become a bigger part of more people's lives, they will consume an increasing amount of energy, which is why we've invested so much in making our data centers efficient and we've joined with others to launch Climate Savers Computing, which has a goal of reducing total power consumption by more than 50% for all computers by 2010.

There are some things you can do now to reduce the energy used by your computer, such as:

- turn on the power management features. Virtually all computers today have the ability to switch into low-power modes automatically when they're idle; very few computers have this capability enabled! Here's how to do it on computers running Windows XP.
- turn off your monitor and computer when you're not using them
- turn down the brightness on your monitor
- make sure your next computer meets the efficiency standards of Climate Savers Computing (an efficient computer uses up to 50% less energy than a conventional one)
- to find the most efficient PCs available today, look for the words "EnergyStar 4.0 compliant."

Take at look at Google, who gets about 200 million queries a day. Let's assume each query is displayed for about 10 seconds; that means Google is running for about 550,000 hours every day on some desktop. Assuming that users run Google in full screen mode, the shift to a black background [on a CRT monitor! mjo] will save a total of 15 (74-59) watts. That turns into a global savings of 8.3 Megawatt-hours per day, or about 3000 Megawatt-hours a year. Now take into account that about 25 percent of the monitors in the world are CRTs, and at 10 cents a kilowatt-hour, that's $75,000, a goodly amount of energy and dollars for changing a few color codes.

4. Black is Better

Most display technologies consume more power displaying the color white than the color black. For most screen types the brightness is proportional to battery use and displaying all white backgrounds draws more power as it is an energy intensive color.

An organic light-emitting diode (OLED) is any light-emitting diode (LED) whose emissive electroluminescent layer comprises a film of organic compounds. The layer usually contains a polymerpixels can emit light of different colors. substance that allows suitable organic compounds to be deposited. They are deposited in rows and columns onto a flat carrier by a simple "printing" process. The resulting matrix of OLEDs are used in television screens and computer displays; a great benefitof OLED displays over traditional liquid crystal displays (LCDs) is that OLEDs do not require a backlight to function. Thus they draw far less power and, when powered from a battery, can operate longer on the same charge. No comprehensive studies have been conducted of a comparison a white vs. black screens, but due to the nature of their construction, it is probable that displaying white consumes more energy than black on a OLED device.

OLED (eg: AMOLED), CRT and Plasma type displays almost always have significant power savings displaying black instead of white. For any given screen technology the power savings can vary depending on the exact technology used and how it's made.

AMOLED displays are often the leading choice for thin screen technology in mobile phones and look very similar to the more traditional LCD displays. OLED's have become very popular for both cell phones and computer monitors over the past few years over the older LCD technology. An inactive OLED display

element produces no light and consumes no power when displaying black as it has no backlight [AMOLED]. When showing white however, OLED screens must consume much more power. "An OLED will consume around 40% of the power of an LCD displaying an image which is primarily black… AMOLED can use over three times as much power to display an image with a white background such as a document or website."

There are some LCD screens that have no difference and some that save power, such as LED backlit LCD's. In general though, screens typically save power or are neutral in consumption. It is extremely rare for any display to consume significantly more power displaying black.

A leading expert in green computing, Mark Ontkush, calculated that a "Black Google Would Save 750 Megawatt-hours a Year". The expert claims that a black version of the Google search engine would save an enormous amount of energy due to the popularity of Google. Another study about "Energy Use and Power Levels in New Monitors and Personal Computers", carried out by the Environmental Energy Technologies division of the University of California (Berkley), concluded that it requires more power to display a white screen than a black screen [GOV]. When comparing CRT and LCD monitors, measured energy savings are higher on CRT monitors. Still, both types of screens benefit from the usage of a darker screen, including using our mobile black Google search engine.

Less Is More
Reduce your data plan costs and see your pages load faster! Bandwidth is saved by delivering small compressed pages with only what you need to perform your search and only the classic Google text or image based results to reduce your network data usage. Our home page does not contain heavy JavaScript or large graphic images so your bandwidth and power usage stays very low. It's no contest when comparing data transfer sizes per page of bGoog.com and Google. When comparing the size of the intro page plus the results of a basic query for the word 'energy', Google's default mobile page is 3 times larger and Google's classic page is 5 times larger!

Reduce Eye Strain
Setting Black Google Mobile as your startup home page minimizes computer eye strain and looks cooler! Eye strain is often caused by excessively bright light. By minimizing the exposure to bright lights our black Google search engine will help you reduce eye fatigue. Information and facts about the screen influence can be found by reading the U.S. National Library of Medicine study.

Governmental/Corporate Policy
One approach is to modify a color scheme of incoming web traffic at a high level, such as the corporate or country level. In this case, an entity with a large number of CRT monitors might intervene on their users' behalf to convert the color codes as they travel through the network, thereby producing a uniform color scheme for the entity as a whole. To date, there have been no reported implementations of this strategy. However, countries such as China or Brazil, who demonstrably have a large number of CRT monitors could save significant energy.

Firefox
Users of the Firefox web browser can install a GreaseMonkey script called Google Dark which will automatically reverse their color scheme when visiting the authentic Google site. For a more generic approach, one can go to 'Tools > Options > Content > Fonts & Colours > Colours' in Firefox and change the default color background and text to any desired color; users who implement this option should uncheck the box that says "Allow pages to choose their own colors, instead of my selections above".

Internet Explorer
In Internet Explorer, go to 'Tools > Internet Options > General > Appearance > Colors' to alter your personal color scheme. You will also need to go to 'Tools > Internet Options > General > Appearance > Accessibility' to override the default color options on the pages that you visit.

Criticisms
There has been both praise and criticism for this initiative, with its supporters citing it as a great example of environmental thinking, and its detractors pointing out usability and aesthetic problems, as well as questions about the scientific validity of the claims. Some of the issues are listed below.

- Since the technique is most effective on CRT monitors, some proxy sites have been criticized for not mentioning this fact. In particular, the Blackle site has been heavily criticized, as it is probable that they are

generating an substantial Adsense revenue stream from implementing the concept.

- CRT monitors are being phased out; about 75% of monitors in active use worldwide are LCDs. Additionally, countries with a high percentage of CRT are replacing them rapidly; for example, Display Search projects that only 18% of the monitors in China will be CRTs by the end of 2007. Therefore, although the technique would be effective for a limited period, it is questionable whether the disruption would be beneficial.

- CRTs are generally darker than LCDs, and the text on many of the proxy sites is barely readable on monitors of this type. For example, Blackle uses a small grey font on an all black background. It is possible that these 'all black' proxy sites are only usable on LCD screens, and this would negate the energy savings.

- Proxy sites cannot handle the heavy load that high volume sites are accustomed to. For example, on August 1st, 2007 and several prior occasions, the Blackle web server was producing intermittent error messages for extended periods of time.

Alternative Sites

- Darkoogle, uses a black background with green text.
- Earthle
- GreenerGle
- Greygle, uses a grey background.
- Google Black, is a website hosted by the Google-owned blogspot, however the search results are not in black.
- Jabago, uses a black background and allows for searching in many languages.
- Ninja
- Power Google
- Searchincolor.com, an older site that supports Google colored searches since its onset. The default color is black.
- Trek Black

5. Conclusion

Blackle is a website powered by Google Custom Search and created by Heap Media, which aims to save energy by displaying a black background and using grayish-white font color for search results. Blackle claims having saved over 4 MWh of electrical energy up to November 2013, a claim currently under dispute. For comparison, the average USA household consumes 11 MWh of electrical energy per year.

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