

It's Time to Start a Digital Conservation Movement

by Chris, March 2009

Since the [Amazon Kindle 2](#) was announced, I've continually been wondering whether a device like it is a good idea. At a price of \$359.99 (no monthly fees, 60 second book delivery), it would take a long time of buying digital books at a substantially lower cost than the printed versions for it to "pay for itself." So, my first question was whether buying Kindle version books was even a good deal at all. I decided to look at some of the books I've read in the past year, comparing the prices for a Kindle version, a printed version, and a used version.

Title	Kindle Price	Print Price	Used Price
The Divine Comedy	\$0.99	\$16.50	\$10.53
Year Million: Science at the Far Edge of Knowledge	n/a	\$10.88	\$5.00
Mapping Time: The Calendar and its History	\$19.25	\$81.68	\$3.83
Infotopia: How Many Minds Produce Knowledge	n/a	\$10.85	\$9.11
The Future of the Internet -- And How to Stop It	\$10.40	\$11.56	\$10.84
Rollback	\$6.29	\$6.99	\$0.98
The Shock of the Old: Technology and Global History since 1900	n/a	\$17.16	\$11.72
Exploring Reality: The Intertwining of Science and Religion	\$9.99	\$10.20	\$8.80
Do What You Are: Discover the Perfect Career for You	\$7.99	\$12.34	\$9.89
Strategic Thinking for the Next Economy	n/a	\$22.45	\$0.94
First Among Equals: how to Manage a Group of Professionals	n/a	\$11.70	\$2.02
The Way We'll Be	\$9.99	\$17.16	\$8.32
Blown to Bits: How the New Economics of Information Transforms Strategy	n/a	n/a	\$5.95
Group Genius: The Creative Power of Collaboration	\$10.38	\$11.53	\$5.09
Father Ernetti's Chronovisor	n/a	\$11.53	\$0.16
Contemporary Futurist Thought	n/a	\$22.50	\$15.65
The Numerati	\$14.30	\$16.38	\$6.94
What Are You Optimistic About?	\$9.56	\$11.66	\$2.90
The Canon: A Whirligig Tour of the Beautiful Basics of Science	\$9.99	\$10.85	\$0.01
Seen/Unseen: Art, Science and Intuition from Leonardo to the Hubble Telescope	n/a	\$44.00	\$27.28

A few things are immediately clear from the table. First, not every book is available on the Kindle. Granted, some of these titles are a bit obscure, and the Kindle is a new format, so I'd expect this to change quickly. Second, in general, buying used is the cheaper way to go (**Update (04/07/09):** here's a recent post describing a [Kindle book price boycott movement](#)). Even factoring in shipping fees for ordering a used book through Amazon.com, going that route is still cheaper than the Kindle version for most texts, and it's probably a better environmental choice (no expensive plastic electronic device needed, and the book you're buying has already been printed and sold at least once). Of course, I could have added a fifth column indicating which of these titles I checked out of my local library (just about all of them). If you don't need to own the book, the library beats the Kindle, Amazon, or any used dealer for that matter, on price and "greenness" for sure. That said, I'm betting that electronic devices like the Kindle will become more and more common.

But, the more books are sold for devices like the Kindle, the more data centers will need to be constructed. As an example, Microsoft recently announced a new 75 acre data center opening in Washington state (another one just like it is being built in Texas for \$550 million). [This facility will consume 48 megawatts of power. To put that figure in perspective, 48 megawatts could power 40,000 homes!](#)

I had a hard time tracking down a total count for data centers maintained by Microsoft. However, Rob Bernard, Microsoft's Chief Environmental Strategist, has said that [the entire data center industry is responsible for 880 million tons of CO2 emissions every year!](#) Yikes! Google, on the other hand, [currently has 36 datacenters](#) and more planned. Because energy costs are skyrocketing for the tech industry, Microsoft, Google and Yahoo have all entertained the possibility of moving their data centers to Iceland, where [the invest in Iceland campaign is planning for low cost, geothermal energy supplied data centers.](#)

This made me think of why our need for data centers would be increasing so rapidly. Of course, it's pretty obvious: Google offers over 7GB of free email storage. Its other applications don't seem to have a published official storage limit, though [one user on this forum estimates that your potential Google Docs limit would be 50GB.](#) Facebook does not seem to have a stated total limit for storage of anything (text data, photos or videos). In any case, all of your email, calendar, document, photo, and video data across all of these services will quickly amount to a lot of storage! Now consider that amount (whatever it is) multiplied by the over 100 million Gmail users, or the over 200 million Facebook users!

Do we really need to save every email? Every digital photo? Every video clip? Perhaps the concept of conservation will have to adjust further to include the conservation of data, too. This might not be a bad thing, in fact, it may help us to appreciate things more. Back when our cameras had exposure limits to a roll of film, we considered each shot more carefully, before we even clicked the shutter. Now, with digital cameras, there's no need for that kind of thinking. But we could probably stand to save a few less pictures here and there! I've seen Facebook accounts with over 800 pictures attached to them!

What do you think? Should we chill out with our excessive data retention?

Update (04/02/2009): Nicholas Carr just posted some [more details about Google's data centers](#) at his blog, Rough Type. Here's a clip:

I was particularly surprised to learn that Google rented all its data center space until 2005, when it built its first center. That implies that The Dalles, Oregon, plant (shown in the photo above) was the company's first official data smelter. Each of Google's containers holds 1,160 servers, and the facility's original server building had 45 containers, which means that it probably was running a total of around 52,000 servers. Since The Dalles plant has three server buildings, that means - and here I'm drawing a speculative conclusion - that it might be running around 150,000 servers altogether.

Read the [full post](#), which includes way more specifics, as well as images and video from inside the data centers.