search, storage, & beyond

History of Information

May 5, 2009

order of business

1. search & storage to web 2.0

2. distance
search, storage, & beyond

History of Information

May 5, 2009

THE WHITE HOUSE BLOG

Friday, May 1, 2009 at 2:03 pm

WhiteHouse 2.0

In the President’s last Weekly Address, he called on government to “recognize that we cannot meet the challenges of today with old habits and stale thinking.” He added that “we need to reform our government so that it is more efficient, more transparent, and more creative,” and pledged to “reach beyond the halls of government” to engage the public. Today the White House is taking steps to expand how the Administration is communicating with the public, including the latest information and guidance about the H1N1 virus. In addition to WhiteHouse.gov, you can now find us in a number of other spots on the web:

- Facebook.com/WhiteHouse
- MySpace.com/WhiteHouse
- Twitter.com/WhiteHouse

The WhiteHouse blog (RSS) will power a lot of the content in these networks, but we’re looking forward to hearing from our fans, friends and followers. Don’t forget these sites as well:

- Flickr.com/WhiteHouse

May 5, 2009
storage & search

changing ideas of organization?

"to organize the world's information"

"the web is a global library produced by millions of people"
    -- Yochai Benkler

"the Internet ... is a library"
    -- Frances Cairncross
organizing

the world before google
ordering:
Dewey Decimal

Library of Congress:
Thomas Jefferson -- Denis Diderot -- Francis Bacon

Melvil Dewey
1851-1931

Thomas Jefferson
1743-1826
searching the store

the world before google

Edward Gibbon
1737–1794

cataloguing

card catalogues
Library of Congress Cataloging-in-Publication Data
Battelle, John, 1965—
The Search : how Google and its rivals rewrote the rules of business and transformed our culture / John Battelle
p. cm.
Includes index.
Contents: The database of intentions—Who, what, where, why, when, and how (much)—Search before Google—Google is born—A billion dollars, one nickel at a time—Google 2000–2004: zero to $3 billion in five years—The search economy—Search, privacy, government, and evil—Google goes public—Google today, Google tomorrow—Perfect search.
ISBN 1-59184-088-0
1. Google (Firm) 2. Internet industry—United States. 3. Web search engines. 4. Google. 5. Internet searching. 6. Information society—United States. I. Title: Google and its rivals rewrote the rules of business and transformed our culture. II. Title.

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break with the past

WAIS
Veronica
Archie
deep storage

Ebla (Syria) c. 2250 BCE

Babylon (Iraq) 15,000 tablets

Nineveh (Iraq) c. 650 BCE

what was stored?

Ebla: accounts, lists, etc.

Nineveh: *Gilgamesh*
"You would imagine that they had intelligence, but if you want to know anything and put a question to one of them, the speaker always gives one unvarying answer. And when they have been once written down they are tumbled about anywhere among those who may or may not understand them."

Lyceum [Greece] (Aristotle)

Pergamum [Turkey] (c 197 BCE) 200,000 scrolls parchment
progress & pillage

libraries
royal library, Mouseion, "daughter", Serapion Caesarion

Ptolomies
I (367/6-283/2 bce)
II (308-246 bce)

holdings
490,000 "main"
42,000 "daughter"
Zenodotus
alphabetical ordering

Callimachus
subject categories

Aristophanes & Aristarchus
scholarly versions
editorial commentary

Dionysius the Thracian
Greek grammar
all progress?

lost and found

"immutable mobiles"
Bruno Latour
mutability & bit rot

magna carta
religious libraries

monastic libraries

"[F]rom the fourth hour until about the sixth let them apply themselves to reading. After the sixth hour, having left the table, let them rest on their beds in perfect silence; or if anyone may perhaps want to read, let him read to himself in such a way as not to disturb anyone else."

Rule of St Benedict, Chapter 48.

Islamic libraries
Jerusalem, Damascus, Cairo, Cordoba
running a library

Humbert de Romanis
(c1194-1277)

dry, well ventilated, ample shelving, subject categories, catalogue, titles on spines; up to date, selling old and duplicates to buy new; regular hours; 'reference' book chained, others portable; loans recorded
state libraries

**Paris** (Charles V, 1338-1380): 1368

**Florence** (Cosimo Medici, 1389-1464): 1436

**Vatican** (15th century)

**Escorial** (1584)

**British Museum** (1754)
public libraries

Florence, 1444
Chetham, 1653

"These Libraries in a few years, will be full and compleat, being furnished, not only with all the valuable and usefull Old Books in any Art of Science, but also with all the valuable New Books, so soon as every they are heard of or seen in the World"

An Overture for Founding and Maintaining of Bibliotecks in Every Paroch Throughout this Kingdom, James Kirkwood, 1699
and private libraries

19th century private libraries
- Beijing libraries and bun shops
- Mudie's Select Library
- Mechanics subscription libraries
- Tabard Inn 5¢ Booklover's Library

the public beats the private?
- libraries act (1850)
- Carnegie libraries
- W.H. Smith

bibliothekswesens
- 1953 rental libraries: 600 million circulations
  (20 times the circulation of public libraries)
"the British Museum ... adding to each at the public expense, those articles that are wanting .... by purchasing all the books of character that are not to be found already in the collection. They might be classed in centuries, according to the dates of their publication, and catalogues printed of them and the manuscripts .... a complete apparatus of a course of mathematics, mechanics, and experimental philosophy."

Tobias Smollett, *Humphrey Clinker*, 1771
Photograph applied to Catalogues of Books.—May not photography be usefully applied to the making of catalogues of large libraries? It would seem no difficult matter to obtain any number of photographs, of any required size, of the title-page of any book. Suppose the plan adopted, that five photographs of each were taken; they may be arranged in five catalogues, as follows:—Era, subject, country, author, title. These being arranged alphabetically, would form five catalogues of a library probably sufficient to meet the wants of all. Any number of additional divisions may be added. By adopting a fixed breadth—say three inches—for the photographs, to be pasted in double columns in folio, interchanges may take place of those unerring slips, and thus librarians aid each other. I throw out this crude idea, in the hope that photographers and librarians may combine to carry it out. Albert Blov, LL.D.

Photographic Copies of Ancient Manuscripts.—Might not photography be well employed in making fac-similes of valuable, rare, and especially of unique ancient manuscripts? If copies of such manuscripts could be multiplied at a moderate price, there are many proprietors of libraries would be glad to enrich them by what, for all purposes of reference, would answer equally well with the originals.

[A. This subject, which has already been touched upon in our columns, has not yet received the attention it deserves. We have now before us a photographic copy of a folio page of a MS. of the fourteenth or fifteenth century, on which are inscribed a number of charters; and, although the copy is reduced so as to be but about 2 inches high and 1½ broad, it is perfectly
escaping the library

"an America where every child can stretch a hand across a keyboard and reach every book ever written, every painting ever painted, every symphony ever composed". Bill Clinton, 1966

"A young generation of entrepreneurs asked what if we could take all the information in a library and put it on a little chip the size of a fingernail? We did that and changed the world forever". John Kerry, 2004

"universal access to all knowledge". Brewster Kahle
There is a growing mountain of research. But there is increased evidence that we are being bogged down today as specialization extends. ... A record if it is to be useful to science, must be continuously extended, it must be stored, and above all it must be consulted

--As we may think, 1945
Two centuries ago Leibnitz invented a calculating machine which embodied most of the essential features of recent keyboard devices... Babbage, even with remarkably generous support for his time, could not produce his great arithmetical machine... progress in photography is not going to stop.... dry photography ... is already here... a scheme for facsimile transmission... microphotography ... compression ... advanced arithmetical machines .... will select their own data and manipulate it.
A memex is a device in which an individual stores all his books, records and communications ... mechanized ... associative indexing ... his trails do not fade.
open source beyond software

"Linux has broader implications ... Peer production is a phenomenon of much wider implication"

-- Yochai Benkler
Hello everybody out there using minix -

I'm doing a (free) operating system (just a hobby, won't be big and professional like gnu) for 386(486) AT clones. This has been brewing since april, and is starting to get ready. I'd like any feedback on things people like/dislike in minix, as my OS resembles it somewhat ... I'd like to know what features most people would want. Any suggestions are welcome, but I won't promise I'll implement them :-)

Linus (torvalds@kruuna.helsinki.fi)
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Linus (torvalds@kruuna.helsinki.fi)
going open

project gutenberg

Michael Hart, 1971
*Declaration of Independence*

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... We do not write for the reader who cares
whether a certain phrase in Shakespeare has a ":" or a ";" between its clauses. We put our sights on
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the eyes of the general reader"
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2. Manners, Customs, and Dress During the Middle Ages and During the Renaissance Period by P. L. Jacob (2795)
3. Illustrated History of Furniture by Frederick Litchfield (1788)

List of Illustrations.

Frontispiece--Dwelling Room of a French Chateau

Chapter I.

Vignette of Bas-relief--Egyptian Seated, as Ornament to Initial Letter.
Assyrian Bronze Throne and Footstool

Assyrian Furniture.

[Illustration: Part of Assyrian Bronze Throne and Footstool, about B.C. 880, Reign of Asshurnazirpat. (_From a photo by Mansell & Co. of the original in the British Museum._)]

Chapter 19

On the Division of Labour

Chapter 20

On the Division of Labour

The table on the following page will then express the series of movements and their results.

If now only those divisions struck or pointed at by the clock A be attended to and written down, it will be found that they produce the series of the squares of the natural numbers. Such a series could, of course, be carried by this mechanism only so far as the numbers which can be expressed by three figures; but this may be sufficient to give some idea of the construction—and was, in fact, the point to which the first model of the calculating engine, now in progress, extended.
Table on the following pages of movements and their effects

If now only those divisions produced by the series of numbers which could, of course, be sufficient to give the result was, in fact, the point of the calculating engine, now

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<tr>
<th>Movement</th>
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<th>Clock C</th>
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If you see an error in the data for a favorite CD, or the data is incomplete, or the service does not recognize the CD at all, you can submit changes or additions to the database maintained by the service. In turn, you benefit from the processed submissions from the millions of other fans who have ever used the service. In addition, Gracenote staff are constantly entering and correcting disc entries by hand and working with artists and labels.
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web 2.0 the wiki way

WikiWikiWeb, 1994
Ward Cunningham

Nupedia, 2000
Wikipedia, 2001
Jimmy Wales & Larry Sanger
Daniel Defoe (1660 – April 24, 1731) was an English writer and journalist, who first gained fame for his novel Robinson Crusoe.

Defoe is also notable for being arguably the earliest constant practitioner of the novel form.

Contents [hide]
1 Biography
2 Defoe and the Anglo-Scottish Union of 1707
3 Quotations
4 See also
5 Electronic books

Biography

Born Daniel Foe, the son of James Foe, a butcher in Stoke Newington, London. He later added the aristocratic sounding “De” to his name as a nom de plume. His gravestone gives his name as DANIEL DE-FOE. He became a famous pamphleteer, journalist and novelist at a time of the birth...

(re-added gravestone info, it demonstrates that he accepted a name, varied from his birthname.)
Daniel Defoe (1660-April 24, 1731) was an English writer and journalist, who first gained fame for his novel Robinson Crusoe.

entropy in action

"He is most famous for his novel [RC]"– 9/02

"He became a famous pamphleteer, journalist and novelist"–1/04

"He became famous for [RC]"–10/04

"He first became famous for [RC]"–11/04

"I strongly suspect that most English speakers would only recognize Defoe through RC; the Esperanto article mentions two or three translations of Robinson Crusoe, but no other works of Defoe, and a quasi-random sampling of the Library of Congress catalog turned up a number of translations of RC into French, German and Japanese, but no obvious translations of any of Defoe's other works"
Daniel Defoe died on April 26, 1731, probably whilst in hiding from his creditors. He was interred in Bunhill Fields, London, where his grave can still be visited.
limits to openness?

"the rise of effective, large-scale cooperative efforts .. beyond ...

encyclopedias, to news and commentary, to immersive entertainment ...

"What, then, are the limitations of peer production?"
--Yochai Benkler
the promise of using technology to bring more culture to the masses had been drowned out by FOO Campers' collective cry for a democratized media

... Everybody was simultaneously broadcasting themselves but nobody was listening.

... democratization ... is undermining truth, souring civic discourse, and belittling expertise, experience, and talent ... threatening the very nature of our cultural institutions

... today ... there is an even more threatening Big Brother lurking in the shadows: the search engine

Andrew Keen, *Cult of the Amateur*
to the rescue?

from amateur to professional?

"I'm a professor, dude!"

the university in the digital age