# Networks, Hierarchies and The Web That Wasn't

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#### **Thomas Aquinas**



# • Two pillars of memory:

- Association
- Order







# 600 years later...

### **Charles Cutter**



- "The desks had ... a little key-board at each, connected by a wire. The reader had only to find the mark of his book in the catalog, touch a few lettered or numbered keys, and [the book] appeared after an astonishingly short interval.
- Charles Cutter, "The Buffalo Public Library of 1983" (Library Journal, 1883)

# H.G. Wells



- The whole human memory can be, and probably in a short time will be, made accessible to every individual. [T]his new all-human cerebrum ... can have at once, the concentration of a craniate animal and the diffused vitality of an amoeba..."
- H.G. Wells, World Brain, 1938

# Teilhard de Chardin



 "A sort of 'etherised' human consciousness... a single, organized, unbroken membrane over the earth" that will "pave the way for a revolution."

#### Paul Otlet



- Creator of Universal Decimal Classification
- Founder of Mundaneum
- Author of Monde, Traité de documentation



















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# Vannevar Bush



- Science advisor to FDR
- President of Carnegie Institution
- Author of "As We May Think"



# As We May Think



"Thus [the user] goes, building a trail of many items. Occasionally he inserts a comment of his own, either linking it to the main trail or joining it by a side trail to a particular item... Thus he builds a trail of his interest through the maze of materials available to him."

#### As We May Think



"Wholly new forms of encyclopedias will appear, ready-made with a mesh of associative trails running through them, ready to be dropped into the Memex and there amplified."

# What would Bush's Web have looked like?

- Two-way links
- Visible trails
- User-generated content

6 Tr	ackbacks/Pingbacks
1.	By Perfect Blogger on 18 Sep 2006 at 7:32 am Challenges of Your Blog Comments
	I just have to share this link with you. Lorelle VanFossen from the Lorelle on WordPress blog has just posted a great article on editing your blog
2.	By Perfect Blogger on 21 Sep 2006 at 4:16 pm
	How To Improve Your Blog Usability And Why You Want To Do It
	Usability of your blog is one of the most important factors of how successful and popular it is. Yet, it is often neglected.
3.	By I'm Winning the Battle Against Comment Spam « Lorelle on WordPress on 10 Nov 2006 at 2:22 am
	[] I respect those who comment even more. []
4.	By Akismet: All Our Comment Spam Fighting Eggs in One Basket « Lorelle on WordPress on 26 Mar 2007 at 10:53 a
	[] Editing Your Blog Comments []
5.	By Comments « Instance Variable on 10 Jul 2007 at 5:00 pm
	[] Editing Your Blog Comments: I believe that everyone has a right to their opinion. I also believe that not every opinion is appropriate for this carefully reexamine my post content to see if I invited the comment. Even if the comment opposes my beliefs and values, but is related directly I'll leave it. If it makes a good point, I might edit out the nasty parts, leaving the value. It depends, but I think about it and weigh my options, the intent of the commenter. []
6.	By Weekly Digest: Celebrating Two Years of Lorelle on WordPress.com With Guest Bloggers and Memories « Lorelle on 27 Aug 2007 at 9:41 pm
	[] however, spent a lot of time ranting and otherwise on comment spam and how to comment, including Editing Your Blog Comments and Mean

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Finally got around to skimming this article on the apparent reasons people use Twitter. Also in here is a rough taxonomy of Twitter user types and some suggestions for improvement, such as allowing for groups or groupings and facilitating conversations. kaeru	research microblogging by L15Amilier to twitter microblogging community soc socialmedia by biabito to system.unfiled
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# **Eugene Garfield**



Founder of Science Citation Index Inventor of citation ranking Forefather of PageRank



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# Doug Engelbart



Former SRI Researcher Creator of oNLine System (NLS)

Author of "Augmenting Human Intelligence"





# Doug Engelbart



#### • <u>1968 NLS Demo</u>





# What would Engelbart's Web have looked like?

- Tools for group collaboration
- Process hierarchies
- Multi-level nesting of organizational knowledge

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# **Ted Nelson**



Coined the term "hypertext" (1965)

Author of *Literary Machines, Dream Machines, Computer Lib* 

Creator of Xanadu















# On Hypertext



"I mean non-sequential writing – text that branches and allows choices to the reader... a series of text chunks connected by links which offer the reader different pathways."

#### **Nelson-isms**

- Transclusion
- Docuverse
- Stretchtext
- Zippered lists
- Window sandwiches
- Indexing vortexes
- Part-pounces
- Tumblers

- Collateral hypertext
- Humbers
- Thinkertoys
- Fresh hyperbooks
- Anthological hyperbooks
- Grand systems

# On Hypertext



"So, the point was to be able to have a medium that would record all the connections and all the structures and all the thoughts that paper could not. Since the computer could hold any structure in any form, this was the way to go."

# What would Nelson's Web have looked like?

- Transclusion
- Two-way linking
- Addressable bits





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I Don't Buy In
The Web isn't hypertext, it's DECORATED DIRECTORIES!
What we have instead is the vacuous victory of typesetters over authors, and the most trivial form of hypertext that could have been imagined
There is an alternative.
Markup must not be embedded. Hierarchies and files must not be part of the mental structure of documents. Links must go both ways. All these fundamental errors of the Web must be repaired. But the geeks have tried to lock the door behind them to make nothing else possible.
We fight on. More later.
- Ted Nelson

# Andries Van Dam



- Early collaborator with Nelson
- Created the first working hypertext systems:
- Hypertext Editing System (HES)
- File Retrieval and Editing System (FRESS)
- Intermedia

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## Berners-Lee and Caillau



- Former researchers at CERN
- Berners-Lee built first version of Enquire in 1980
- Released WorldWideWeb in 1989



# In Search of the Web That Wasn't

- Marrying top-down taxonomies with bottom-up "social space"
- Two-way linking
- Visible pathways
- Typed associations
- Abstraction of concepts from the presentation layer



- H.G. Wells, "World Brain"
- Teilhard de Chardin, Phenomenon of Man
- Boyd Rayward, "Visions of Xanadu"
- Vannevar Bush, "As We May Think"
- Ted Nelson, Literary Machines
- Doug Engelbart, "Augmenting Human Intelligence"
- Tim Berners-Lee, Weaving the Web



# Thank you

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