

software studio

precedents of the Web

Daniel Jackson

Memex (Bush, 1945)

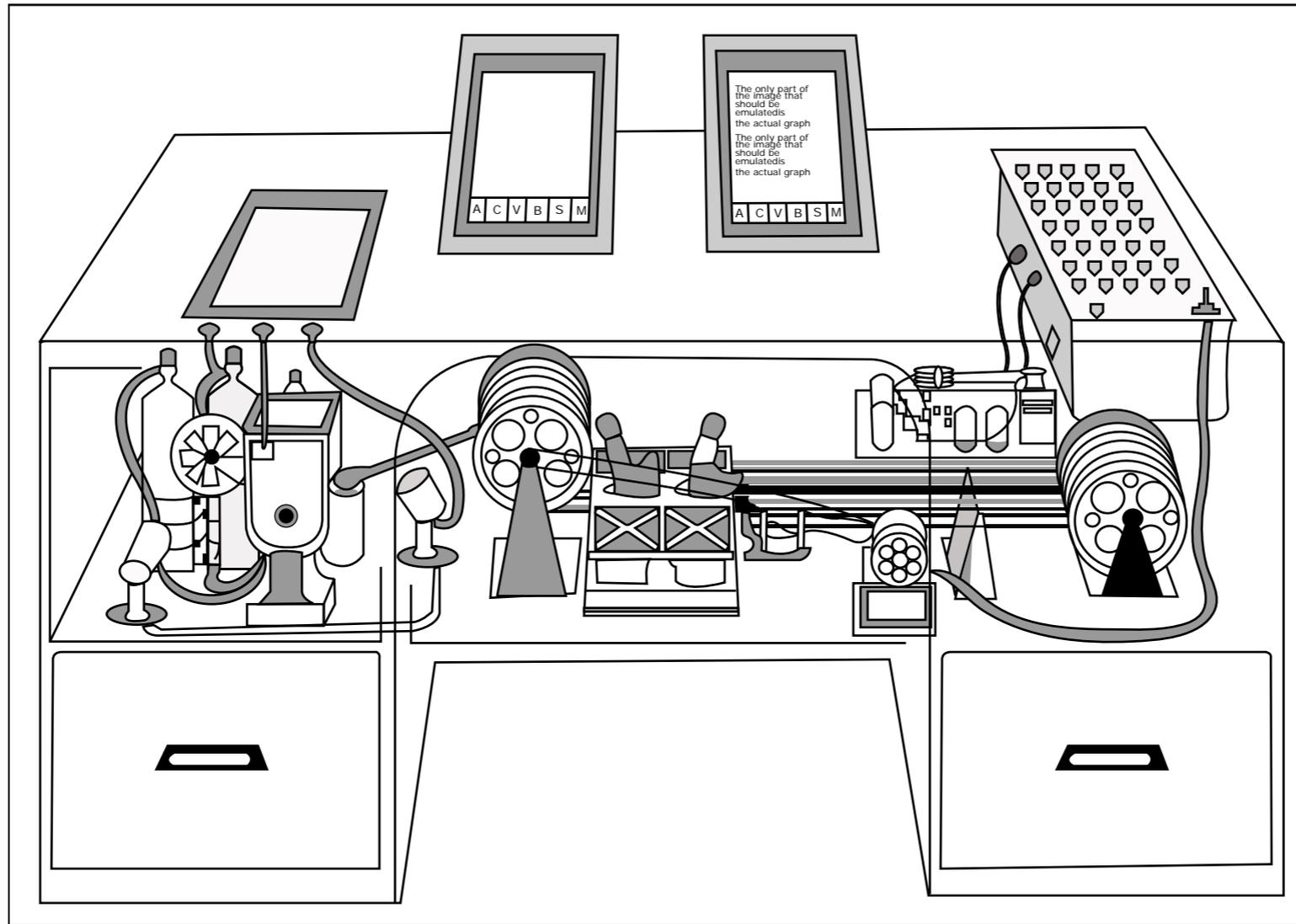


image by MIT OpenCourseWare.

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.

—Vannevar Bush, *As We May Think* (1945)

hypercard (Apple, 1987)

The screenshot displays a HyperCard stack interface. On the left is a spiral-bound notebook-style card with the following text:

Hypertext systems
Classifying hypertext systems (Frank Halasz)
Frank Halasz from MCC gave the last talk at the workshop. He and the organizing committee should be criticized for not making it the first talk AND the last talk: Part of the talk was a very good survey of what HT really is and a classification of current systems. This material could have filled a whole talk with no problems but was presented with such speed that it left the audience breathless. It would also have made a good platform for the discussions during the conference if it had been presented at the beginning instead of at the end.

Definition of HyperText
HT systems can be divided into on the one hand the "original" generation of Memex [Vanavar Bush], NLS/Augment* [Engelbart], Xanadu [Ted Nelson], etc. and on the other hand the "current" generation consisting of e.g.
• Research systems: Intermedia [Brown University], NoteCards [Xerox]
• PC Products: Guide [Owl], HyperCard [Apple]
• Workstation products: Document Examiner [Symbolics].

At the bottom of the card is a "Quit" button and a progress indicator.

On the right side of the interface, there are two overview maps and a navigation bar. At the top right, it says "Time since you were here : NEVER".

The "Current report overview map" is a hierarchical diagram with "HyperTEXT '87 Workshop" at the center, connected to "People", "Literature", "Systems", "Applications", "Research issues", and "Definition". Below it is a box for "CSCW '86 Trip Report".

The "Current chapter overview map" shows a tree structure with "Classification of HT systems" at the top, followed by "Hypertext systems", which branches into "NoteCards" and "Document Examiner". Below this is a box for "HyperCard (Apple)".

At the bottom right, there is a navigation bar with buttons for "Top", "Front cover", and "History list", along with left and right arrow icons.

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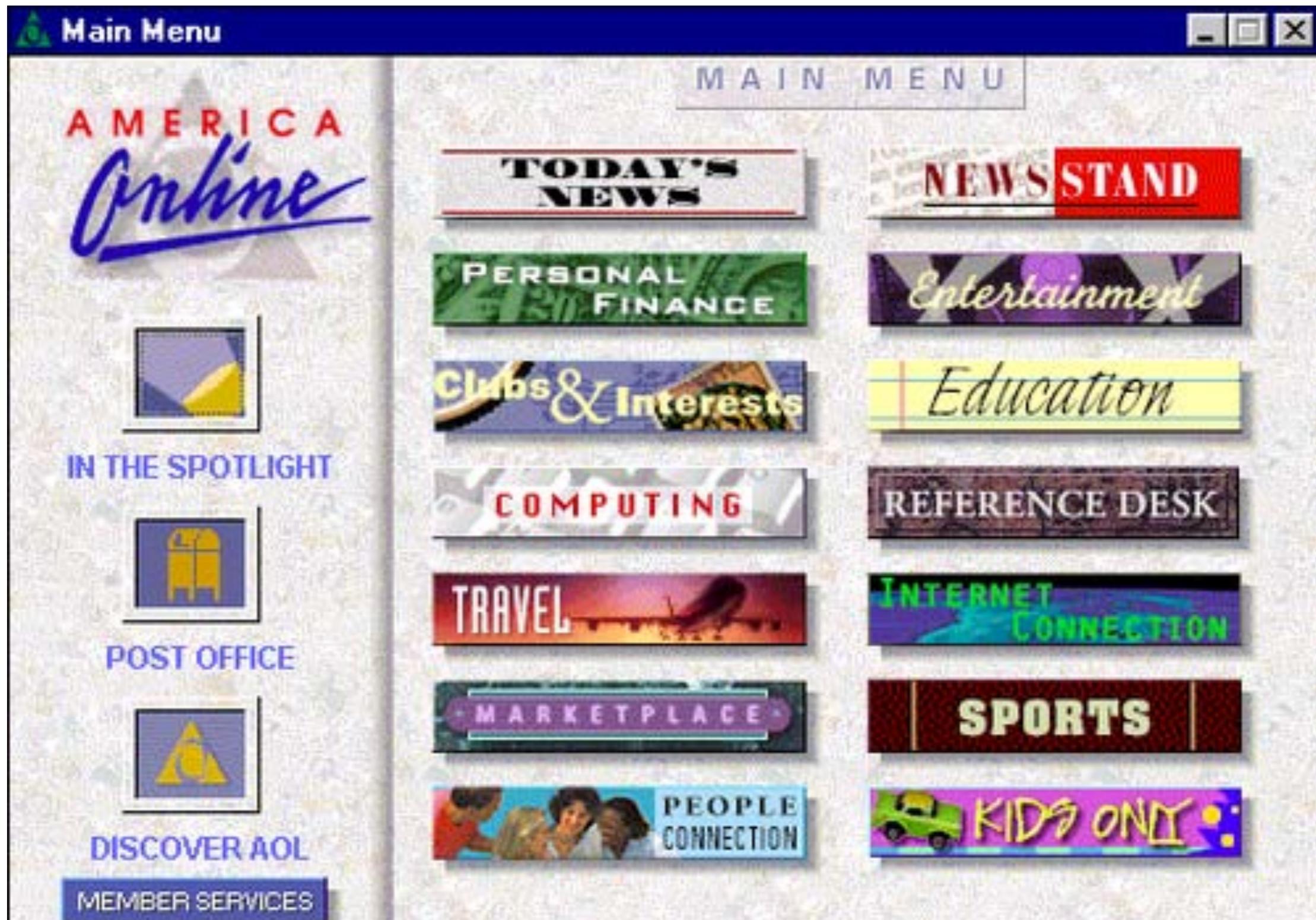
file transfer protocol (1971)

```
Command Prompt
C:\>cd download
C:\download>ftp 206.204.117.19
Connected to 206.204.117.19.
220 ipswitch2.isc.cw.net X2 WS_FTP Server 1.0.5 (3767610566)
User (206.204.117.19:(none)): anonymous
331 Password required
Password:
230 user logged in
ftp> cd pub/win32
250 CWD successful
ftp> dir
200 command successful
150 Opening ASCII data connection for directory listing
dr-x-----  2 anonymou System          0 Mar 15 15:27 .
dr-x-----  2 anonymou System          0 Mar 15 15:27 ..
-r-x-----  1 anonymou System          7088 May 22 13:28 WS_FTP32.txt
-r-x-----  1 anonymou System       2417880 May 22 13:29 WS_FTP32.zip
-r-x-----  1 anonymou System       707072 Mar 15 15:27 ws_ftple.exe
-r-x-----  1 anonymou System          6699 Mar 15 15:27 ws_ftple.txt
226 transfer complete
ftp: 399 bytes received in 0.00Seconds 399000.00Kbytes/sec.
ftp> bin
200 Type set to IMAGE.
ftp> get ws_ftple.exe
200 command successful
150 Opening BINARY data connection for ws_ftple.exe (707072 bytes)
226 transfer complete
ftp: 707072 bytes received in 10.52Seconds 67.24Kbytes/sec.
ftp> quit
221 Good-Bye
C:\download>
```

usenet (1979)

Screenshot of Usenet interface removed due to copyright restrictions.

AOL, compuserve, prodigy (early 90s)



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distributed hypertext

Quotation from Tim Berners-Lee's proposal to CERN management removed due to copyright restrictions.

Source: Overview in Berners-Lee, Tim. "[Information Management: A Proposal](#)." 1989/1990.

berners lee's browser, 1991

Screenshot of Tim Berners-Lee's [HyperMedia Browser/Editor](#) removed due to copyright restrictions.

key components of TBL's invention

URIs

- › global names for resources

HTML

- › first invented by Berners Lee in 1989
- › based on SGML (used for documents at CERN)
- › anchor element: associates link with text

HTTP

- › first version (0.9, 1991) had GET only
- › request: get file at path; response: return file

key features of the web

as an application model

- › thin or thick client
- › no need to install software on client
- › ubiquitous platform

decentralized naming

- › hierarchical control of namespace

simple protocol

- › string based
- › request/response
- › stateless, no transactions

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