

IS 103

HISTORY OF INFORMATION

PROFESSORS DUGUID & NUNBERG

Why HOFI?

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School of Information, UC Berkeley

INFO 103, COG SCI 103, HIST C192, MSC 104C
History of Information
Jan. 20, 2015



Itinerary, 1/20

The history of "information": Why now?

What historical assumptions does the "information age" usually imply?

The determinant role of "information technology"

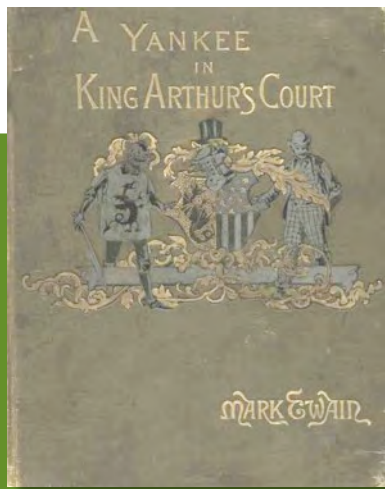
Novelty: "Never before...."

Why does it matter that we get Hofl right?

Looking forward: How does history help us to understand the present & predict the future?

Looking backward: How useful is "information" as a principle for organizing & understanding the past?

Outline of course structure, requirements, grades (Paul)



The history of "information": Why now?

Every age gets the history it needs: Gutenberg in the machine age

The monks around me besieged me so with eager questions: What is this curious thing? What is it for?...

"It is a public journal... The lines on it are not written by hand, but printed; by and by I will explain what printing is. A thousand of these sheets have been made, all exactly like this, in every minute detail—they can't be told apart."

Then they all broke out with exclamations of surprise and admiration: "A thousand! Verily a mighty work—a year's work for many men."

"No—merely a day's work for a man and a boy." They crossed themselves...

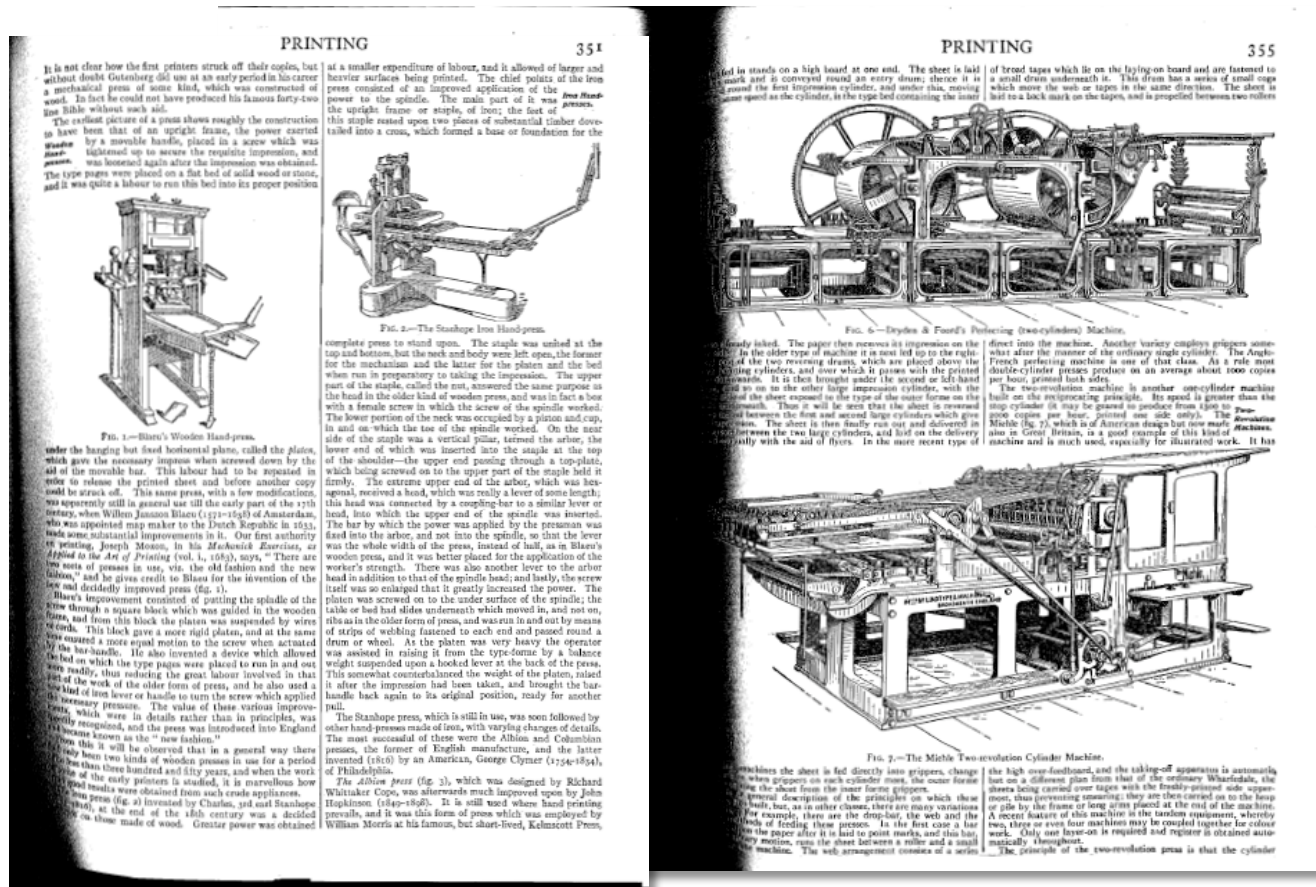
Mark Twain, *A Connecticut Yankee In King Arthur's Court*, 1889



I WAS HUNGRY ENOUGH FOR LITERATURE TO WANT TO TAKE DOWN THE WHOLE PAPER AT THIS ONE MEAL, BUT I GOT ONLY A FEW BITES, AND THEN HAD TO POSTPONE, BECAUSE THE MONKS AROUND ME BESIEGED ME SO WITH EAGER QUESTIONS



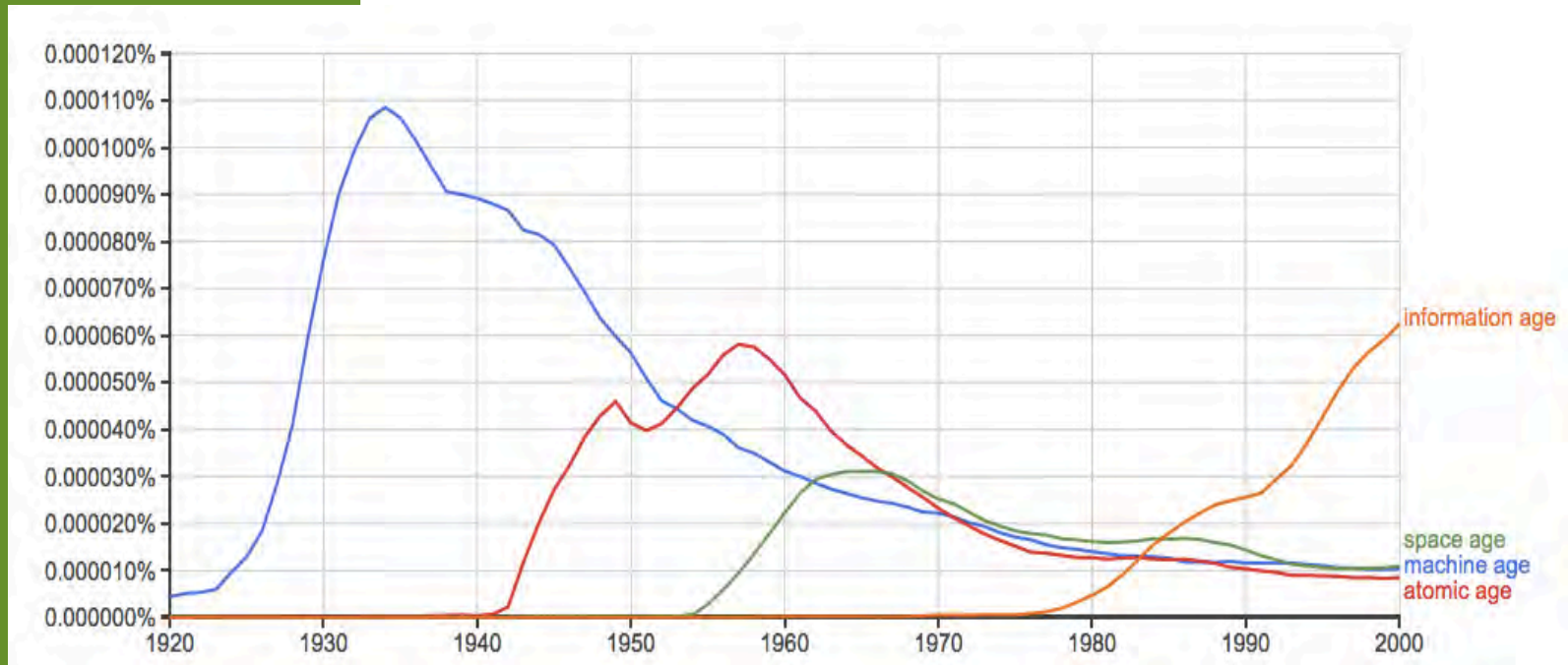
The history of "information": Why now?



Article on "printing" in the Encyclopædia Britannica 11th ed.,
1911



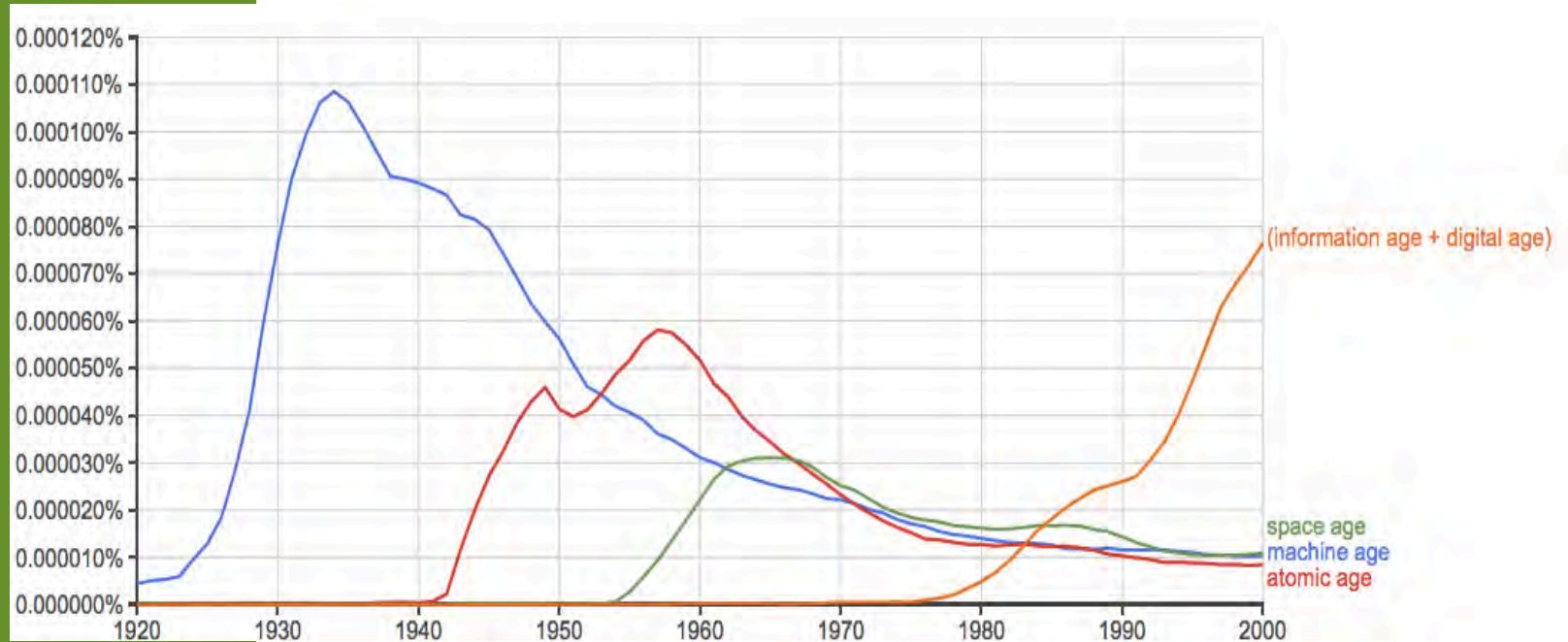
The coming of the information age



Relative frequency of *machine age*, *atomic age*, *space age* and *information age* in Google Books, 1920-2000



The coming of the information age



Relative frequency of *machine age*, *atomic age*, *space age* and *information/digital age* in Google Books, 1920-2000

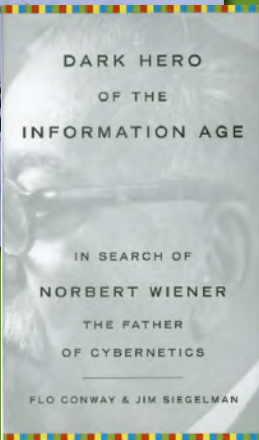


Defining the "Information Age"

1960 R. S. Leghorn: Present and anticipated spectacular informational achievements will usher in public recognition of the 'information age', probably under a more symbolic title.

information age The period beginning around 1970 and noted for the abundant publication, consumption, and manipulation of information, especially by computers and computer networks. *American Heritage Dict.*, 4th ed.

Information Age is a term that has been used to refer to the present era, generally beginning within ten years of 1990. The term alludes to the global economy's shift in focus away from the production of physical goods and towards the manipulation of information. Wikipedia





Historical assumptions implicit in “the Information Age”

The determinative role of technology

The march of progress

The unprecedented present: “Never
before...”



Implicit historical assumptions about "The Information Age"

The historical role of Technology

However you date the "dawn" of the IA, presumed to be tied to new technologies (Jacquard loom, Babbage's "difference engine," punch cards, Eniac, Internet, etc.)

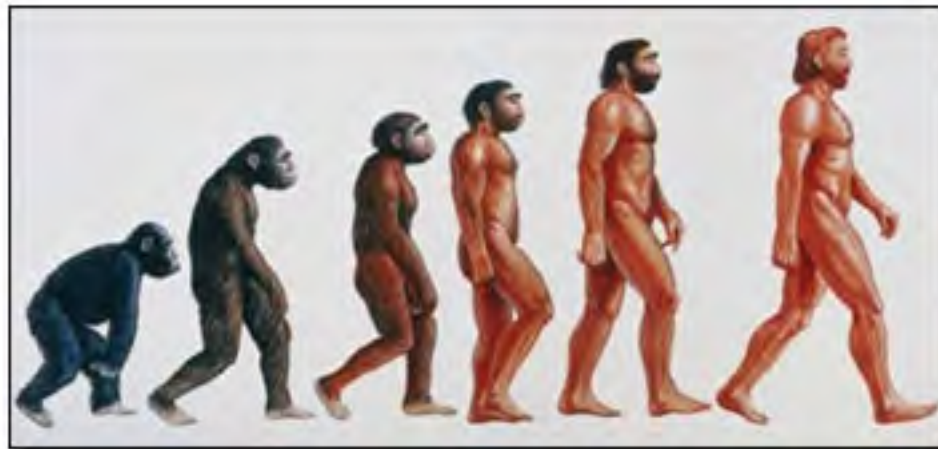


History as a Whiggish Progression leading to.... us

Whig theory of history = history is a triumphant (and, usually, inevitable) progress toward the present state...

... the history of our country during the last hundred and sixty years is eminently the history of physical, of moral, and of intellectual improvement. Thos. Babington Macaulay, 1848

That great, growling engine of change -- technology.
Alvin Toffler, 1970.



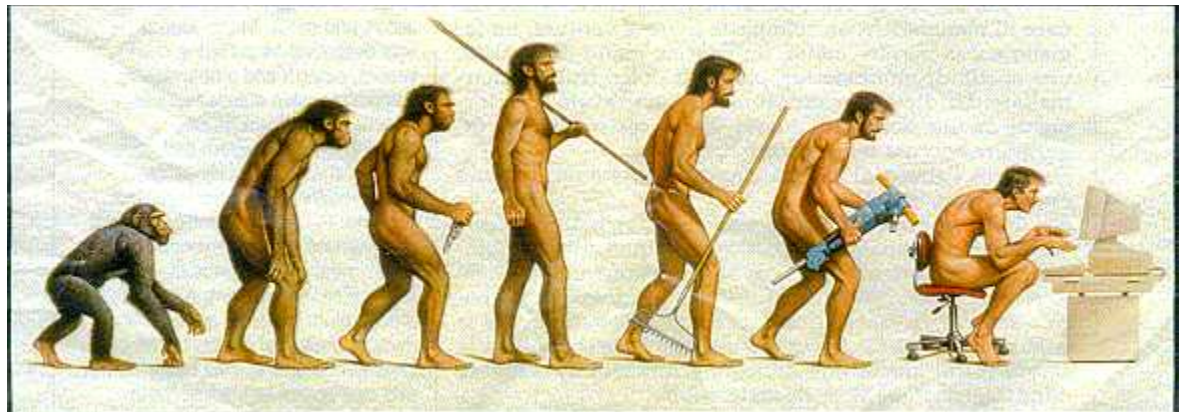


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Why HOFI is not a history of information technology

The only course of its kind!



Why HOFI is not a history of information technology

Well, almost...

The screenshot shows the Stanford University course search interface. At the top, the Stanford University logo and 'Stanford Bulletin EXPLORE COURSES' are displayed. Below this, a navigation bar shows the years 2010-2011, 2011-2012, 2012-2013 (selected), 2013-2014, and 2014-2015. A search bar contains the word 'HISTORY' with a 'go' button. To the right of the search bar are two buttons: 'Browse by subject...' and 'Schedule view...'. Below the search bar, the results are displayed: '141 - 150 of 459 results for: HISTORY'. The first result is 'HISTORY 205A: The History of Information (HISTORY 305A)'. The description for this course reads: 'Examines the history of information from multiple perspectives such as the changing conceptions of facticity and evidence cross-culturally as well as a range of information technologies, from moveable type printing and telegraphy to text messaging and Twitter. Other topics include the ways in which information is shaped by the languages in which it is recorded, stored, and transmitted, and also the ways in which information infrastructures influence what is forgotten and lost.' Below the description, the course details are listed: 'Terms: Spr | Units: 4-5 | UG Reqs: GER:DB-Hum | Grading: Letter (ABCD/NP)' and 'Instructors: Mullaney, T. (PI)'.

STANFORD UNIVERSITY | *Stanford Bulletin* EXPLORE COURSES

2010-2011 2011-2012 **2012-2013** 2013-2014 2014-2015

HISTORY go Browse by subject... Schedule view...

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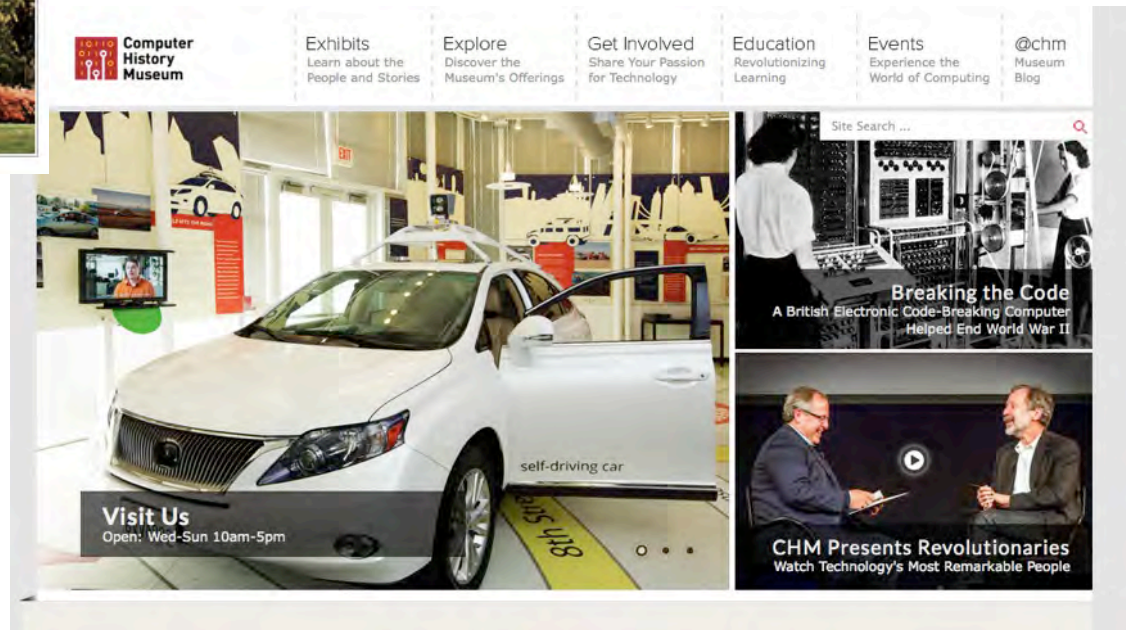
HISTORY 205A: The History of Information (HISTORY 305A)

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Problem 1: Tracing Technological "Antecedents"



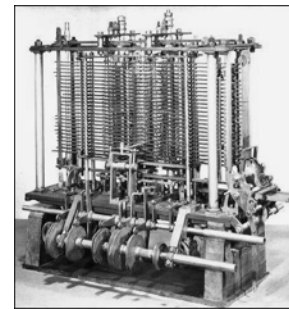


Tracing Technological "Antecedents"

Jaquard loom 1801



Babbage's difference engine 1820's



Hollerith tabulating machine 1890



Schickard's calculator 1623



Apple II 1977



DEC PDP-11 1965



Eniac I 1946



"What was the first computer"?

"Each writer creates his own antecedents"
—Jorge Luis Borges



Antikythera mechanism,
ca. 150-200 B.C.



Napier's bones 1617



Abacus 2400, B.C.



Stonehenge, 3100 B.C.



Roman Calendar, ca 60 BC



Ishango bone, 20,000 B.C.



Problem 2: What are "Information Technologies"

What makes for "Information technology"?
Prototypical instances of modern "IT"





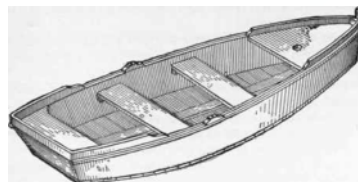
More peripheral instances of "information technologies"





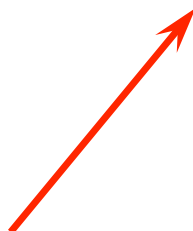
Non-IT?

What isn't IT?



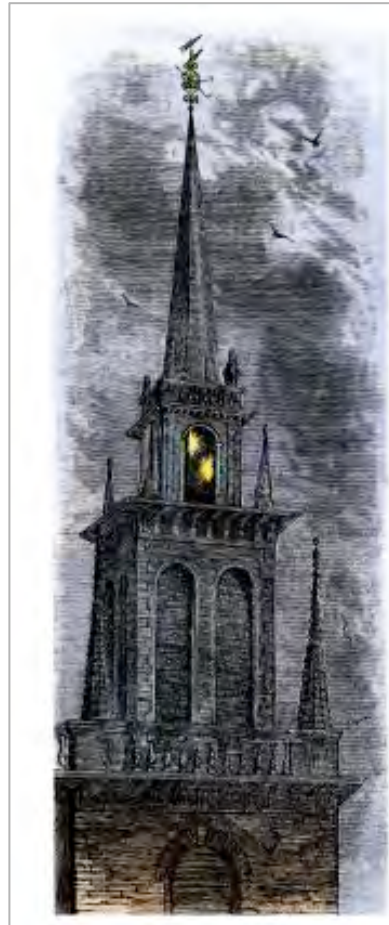


Rethinking "Information Technologies"





Rethinking "Information Technologies"





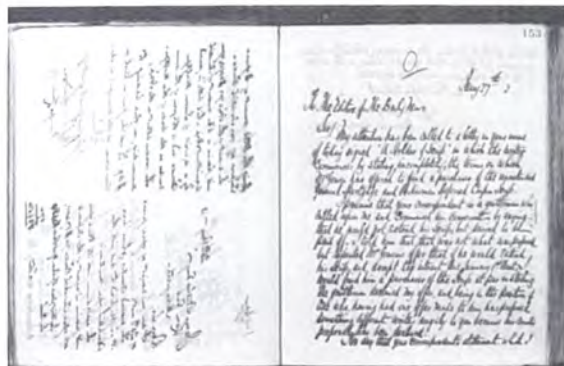
The Interconnection of Technologies: Managing correspondence

James Watt 1780



2.1 A letter press in action. (Catalogue for Yawman and Erbe, 1905 Hagley Museum and Library)

Aniline dyes (1856)



2.2 An open letter press book. (Pennsylvania Railroad Collection, Hagley Museum and Library)



Wooten desk

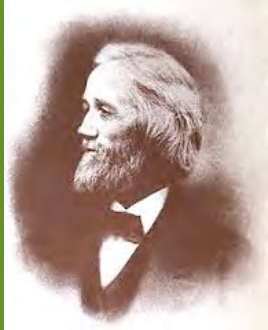
Genuine Shannon Sectional Cabinets



Mercantile Office, 1876



The Interconnection of Technologies: Managing correspondence



Christopher Latham
Sholes



Sholes & Gidden
type-writer 1873



Ralph Wedgwood (1806)

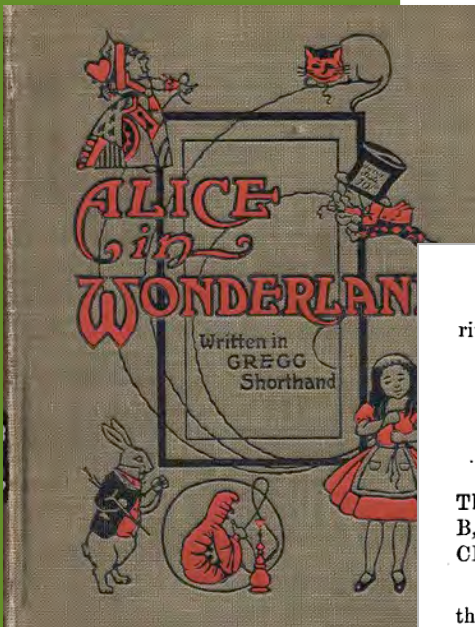


The Pacific Monthly, advertising section, March 1904 scanned by Lincoln Cushing





The Interconnection of Technologies: Managing correspondence



137. READING EXERCISE.

Handwritten text in Gregg Shorthand, likely a reading exercise.

CONSONANTS.

22. All the characters given in this lesson are derived from another elliptical figure; thus

P B F V CH J SH

The curve on the left side of the figure represents P and B, that on the right side, F and V, and the straight line, CH, J, SH. All these characters are written downwards,

23. Should you find any difficulty in memorizing these signs, the following mnemonics may be of assistance:



Fig. 4.—Graphophone, 1887, as Used in Receiving a Dictation and for Transcribing.

Graphophone 1887



The Social Setting of Technologies: Managing correspondence

The Feminization of the Office Work Force



OFFICE OF R. G. DUN & CO. MERCANTILE AGENCY.
HARVARD BUILDING, FIRST FLOOR.



Fig. 1.1. Work in one of many filing areas at Metropolitan Life Insurance Company.



The Unprecedented Present

The Shock of the New: "Never Before"

Assumption:

The advent of the Information Age entails fundamental and unprecedented changes in the nature of commerce, organizational structure, education, politics & public discourse, national identity, news and entertainment, community and personal relations – and in the nature of change itself.



Why Study Hofl?: Looking Back to Look Ahead

"Been there, done that"?: History provides antecedents for:

The digital generation gap – immigrants and "digital natives"

"The death of distance" the "annihilation of space and time"

"The end of the book"; "The death of the newspaper"; economic models for the new media

"information overload" Organizing an unprecedented mass of information?

Piracy and IP in the information age

Problems of reliability; who can you trust online?

Threats to individual privacy

What role for the government in building infrastructure, monitoring use?

But does that mean there's nothing new under the sun?



Why Study History?: Looking back to look ahead



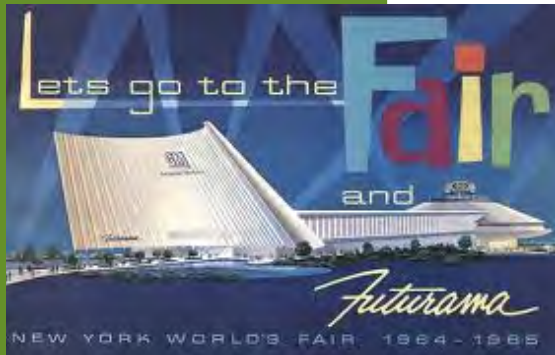
Norman Bel Geddes, General Motors
Futurama, 1939 World's Fair



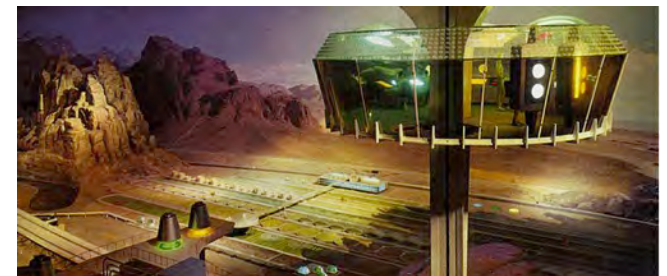
Every age writes the future in
its own image



Why Study History?: Looking back to look ahead



2007 GM Corp. Used with permission, GM Media Archive



General Motors Futurama, 1964 World's Fair



Plastics!

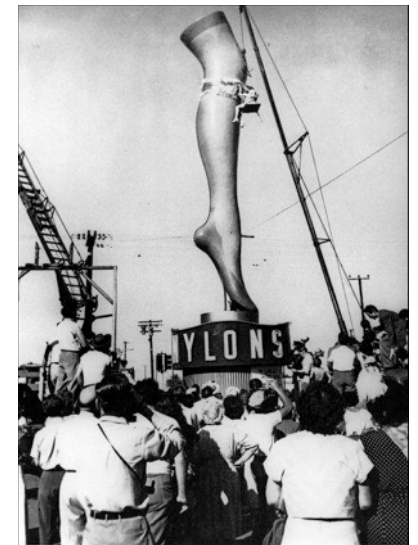


Figure 3
Industrial designer Carl W. Sundberg tantalized Americans with this vision of an all-plastic auto trailer/camper/motorboat shell. *Modern Plastics* 22 (May 1945), p. 106.

"The American of tomorrow, clothed in plastics from head to foot, will live in a plastics house, drive a plastics auto, and fly in a plastics airplane." *Popular Mechanics*, 1940



Monsanto, House of the Future, Disneyland, 1957 --
"Everything is ultra-modern and almost entirely synthetic."





Plastics!



Getting the Future Wrong



Anticipating Change

What would be most surprising to the characters of "Father Knows Best" if they could see the world of 2013?





Anticipating Technological Change





Anticipating Social Change: What would grampa have said?





Anticipating Social Change: What would grandad have said?



Welcome UC Berkeley Students



Anticipating Social Change

What will make our predictions most quaint or ridiculous to our descendants?

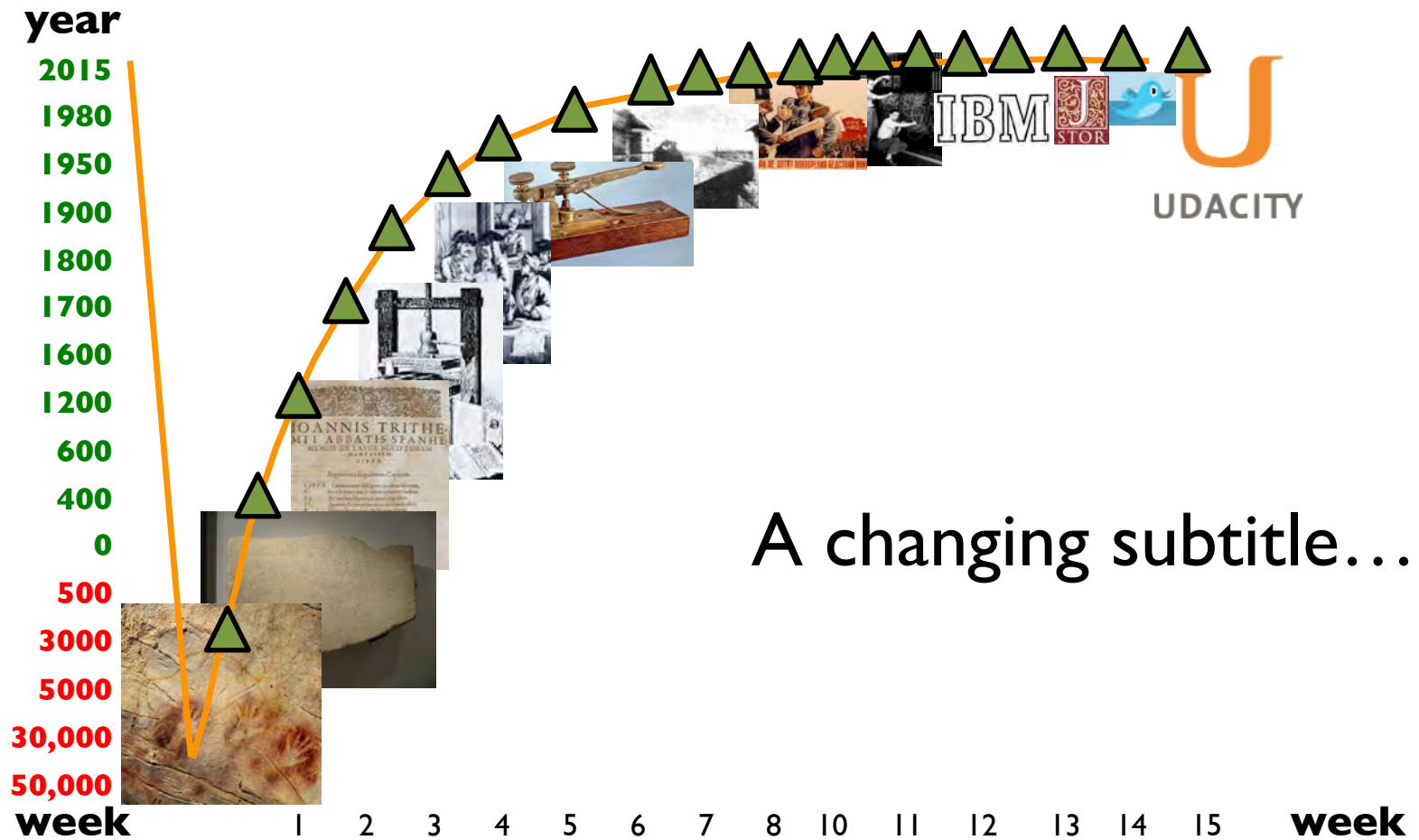
Not just getting the technology wrong...

Recognizing the historical roots of categories we take for granted—
news, information, intellectual property,
objectivity, privacy, etc.

(PD, next time)



Route Map





Exercise for 1/22



Pick one of the following and write a (very) brief story or anecdote in which it serves as an "information technology," perhaps in conjunction with other things. Try to make your stories ingenious without being completely implausible. Bring your answer to class for discussion (but no need to hand them in).

- a necktie
- a blanket
- a rubber duckie
- a can of beans
- a lemon

"Extra credit" if you manage to use two of these in your story.