



IS 103

HISTORY OF INFORMATION

PROFESSORS DUGUID & NUNBERG

Why HOFI?

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IS 103
History of Information
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Itinerary, 1/18

The history of "information": Why now?

What makes this the "Information Age"?

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

Novelty: "Never before...."

The determinant role of "information technology"

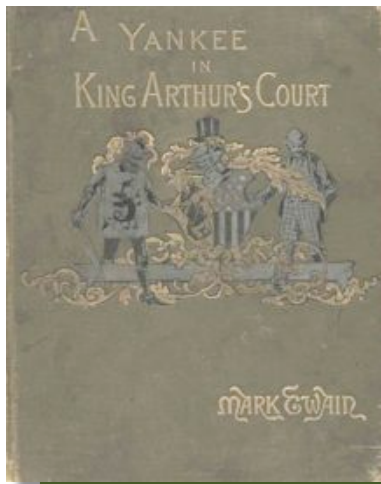
Why does it matter that we get Hofl right?

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; I will explain what that is, another time. It is not cloth, it is made of paper; some time I will explain what paper is. The lines on it are reading matter; and 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."

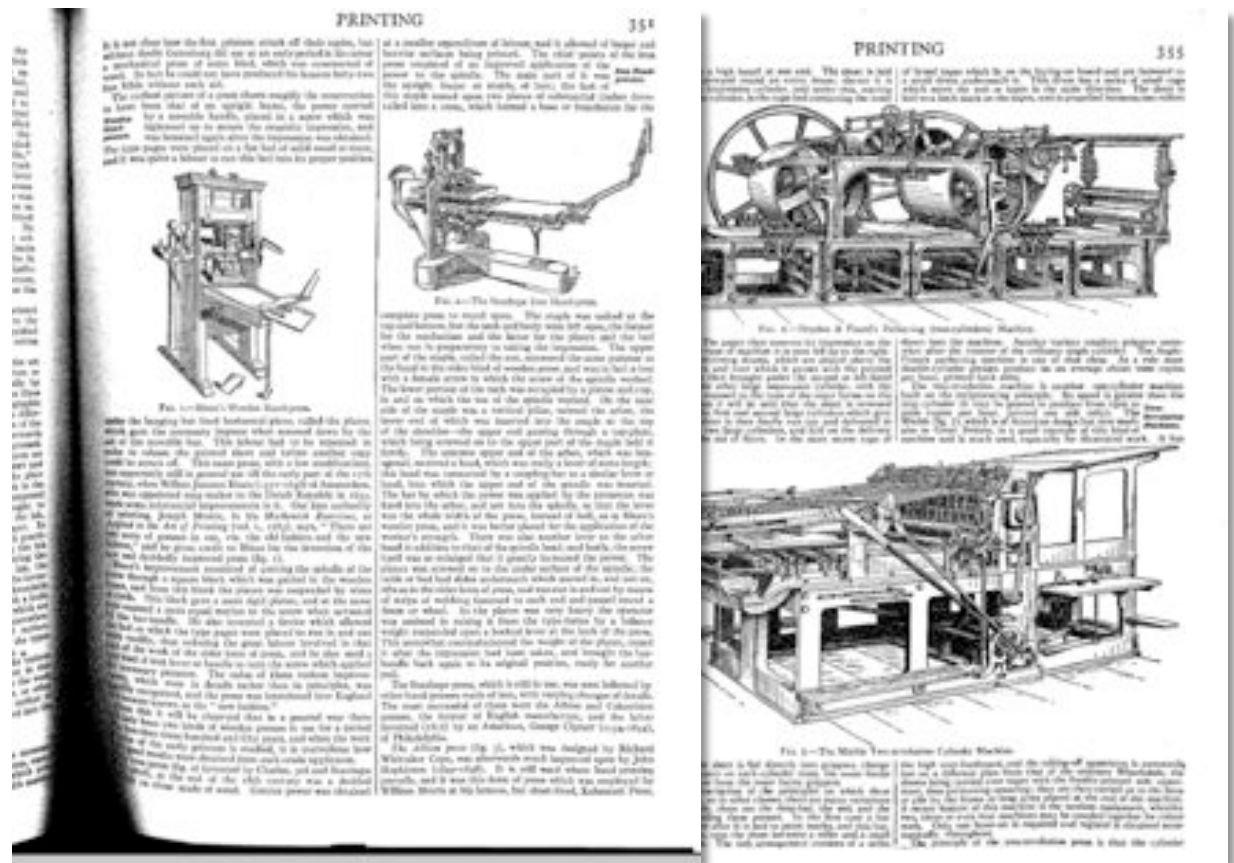
Then they all broke out with exclamations of surprise and admiration: "A thousand! Verily a mighty work--a year's work for many men." "No--merely a day's work for a man and a boy." They crossed themselves...

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



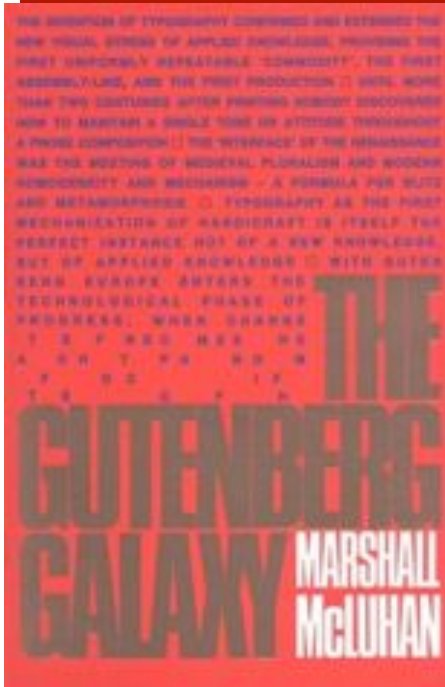
The history of "information": Why now?

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





The history of "information": Why now?



The Four Ages of Man (Marshall McLuhan, *The Gutenberg Galaxy: The Making of Typographic Man*):

Oral tribe culture

Manuscript culture

Gutenberg galaxy

Electronic age ("the Galaxy reconfigured")

"societies have been shaped more by the nature of the media by which men communicate than by the content of the communication."



The history of "information": Why now?



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"societies have been shaped more by the nature of the media by which men communicate than by the content of the communication."

"I don't pretend to understand it. After all, my stuff is very difficult." M. McLuhan





"Information"

– An age whose time has come



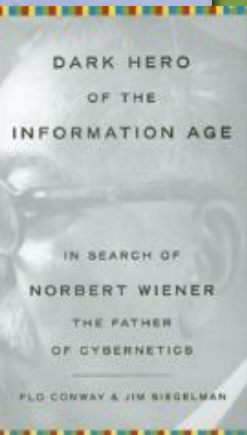
INFORMATION AGE



Culture and Politics in
the Information Age
A new politics!

Edited by
Frank Webster

Series



You, the American people, have made our passage into the global information age an era of great American renewal.

Bill Clinton, Farewell Address, Jan 19, 2001

The information age is opening up new possibilities for all of us, for our children and for the entire nation. . . ."

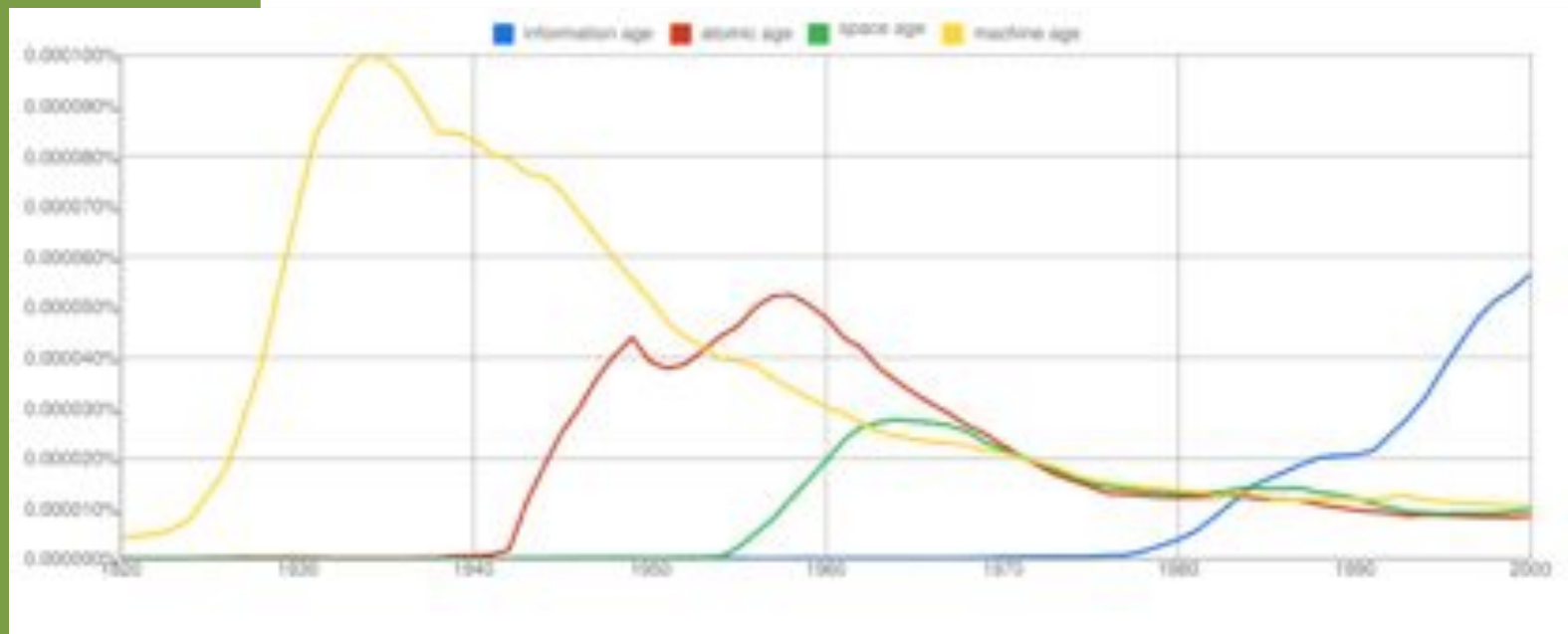
Bill Gates

Our Information Age is still in its infancy. We're only at Web 2.0. Now our virtual world is going viral. And we've only just begun to explore the next generation of technologies that will transform our lives in ways we can't even begin to imagine.

Barack Obama, May 29, 2009



The coming of the information age



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



Defining the "Information Age"

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



The First Information-Age President?



It's the result of Clinton being the first information age president. *Washington Post*, 1/22/99



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George W. Bush is the first Information Age president. *Seattle Times*, 8/27/06



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“I like the fact that we have a president who uses information technology to his benefit. It means we actually have the first information-age president,” said Bruce Schneier, a security technologist and author. —Fox Bus News, Feb. 6, 2009



Implicit historical assumptions about the "Information Age"

The unprecedented present

The determinative role of technology



The Unprecedented Present

The Shock of the New: "Never Before"

The advent of the Information Age entails fundamental 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.



The Unprecedented Present

Novelty: "Never Before"

"The Web seems to be growing at an a rate of sheer numbers that is unprecedented in world history."

"I.T. has triggered complex social, political, economic and ethical issues that need urgent action if we are to survive the coming decades of unprecedented technological change."

"The promise of the Information Age is the unleashing of unprecedented productive capacity by the power of the mind. . . . The dream of the Enlightenment, that reason and science would solve the problems of humankind, is within reach." Manuel Castells



"Been there, done that"

But many of the "unprecedented" features of the Information Age have instructive historical antecedents...



"Been there, done that"

But many of the "unprecedented" features of the Information Age have historical antecedents ...starting with the idea that the current age is unprecedented.



"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

How to organize and make accessible an unprecedented
mass of information?

Piracy and IP in the information age – "information wants to
be free"

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?



Implicit historical assumptions in "The Information Age," 2

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.)



The historical role of technology

The role of Technology

Does the history of information" = "history of information technology"?

History 3493 (Oklahoma U.) The Cultural History of Information. An introduction to the history of information technologies and communications media from the printing press to the internet. Topics will include the print revolution, the advent of electronic communications, the growth of broadcast media, the development of the digital computer, and the internet boom.



Why HOFI is not a history of information technology



Problem 1: Tracing Technological "Antecedents"





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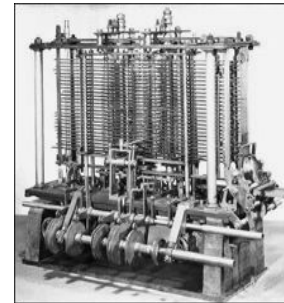


Schickard's
calculator 1623

Jaquard loom 1801



Babbage's difference
engine 1820's



Hollerith tabulating
machine 1890



Apple II 1977



DEC PDP11 1965



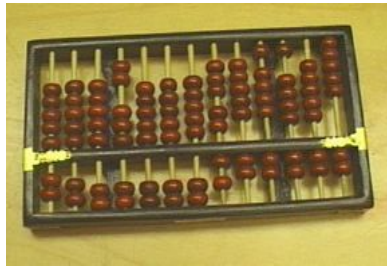
Eniac I 1946



"What was the first computer"?



Pascal's calculator, 1624



Abacus 2400, B.C.



Stonehenge, 3100 B.C.



Antikythera mechanism, ca. 150 B.C.



Ishango bone, 20,000 B.C.



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

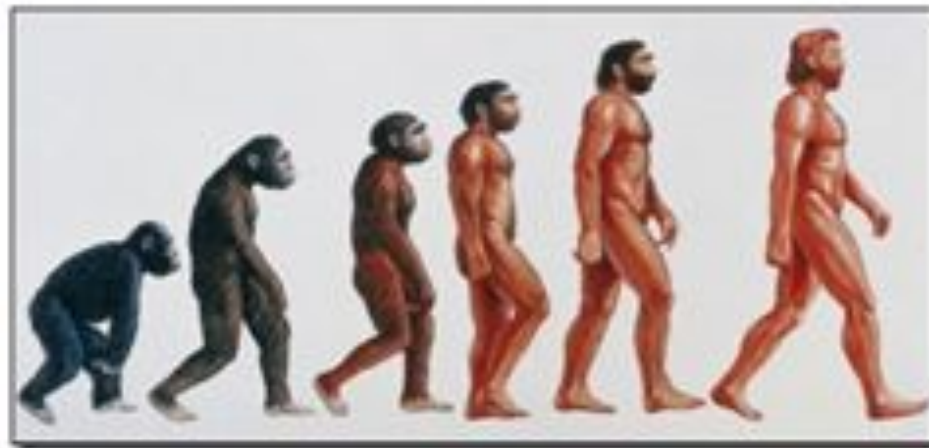
Whig theory of history = history is a triumphant (and, often, inevitable) progress toward the present state...

... 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.





Problem 2: What are "Information Technologies"

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





More marginal instances of "information technologies"





Non-IT

What isn't IT?





Rethinking "Information Technologies"





Rethinking "Information Technologies"





Complicating the Story: The Interconnection of Technologies

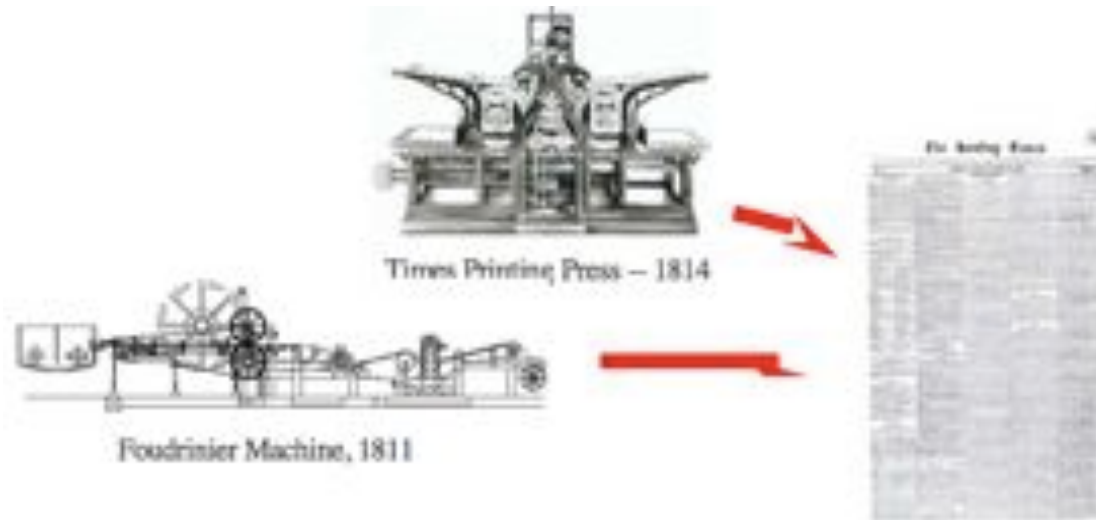


Times Printing Press -- 1814



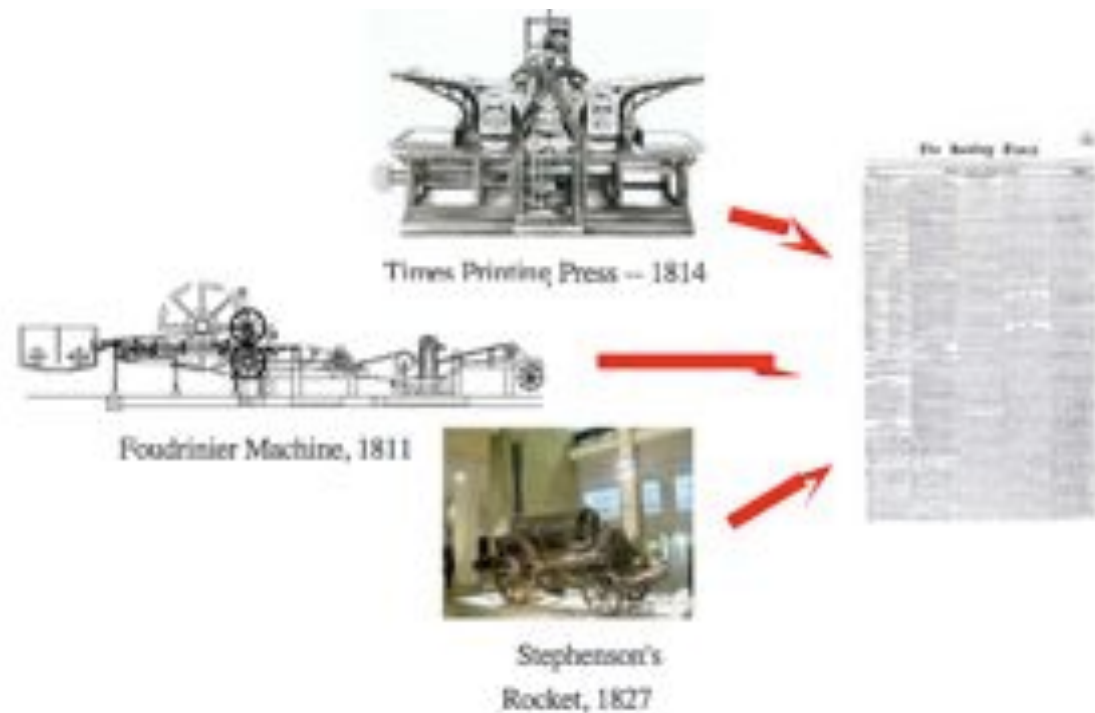


Complicating the Story: The Interconnection of Technologies



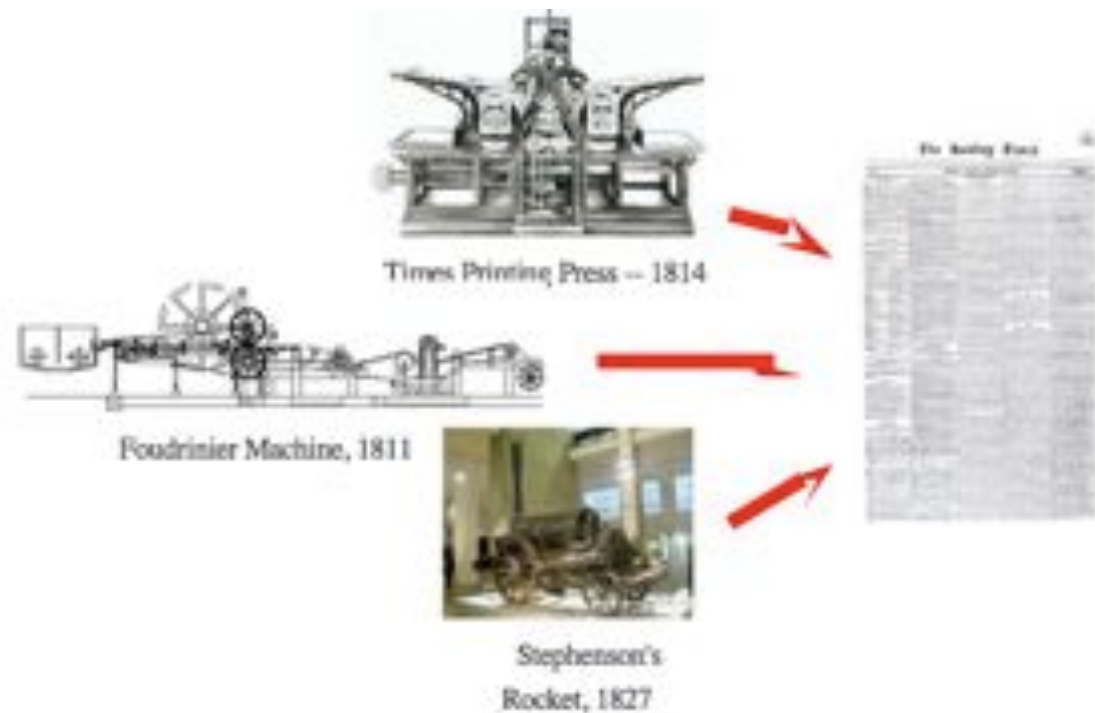


Complicating the Story, 1: The Interconnection of Technologies



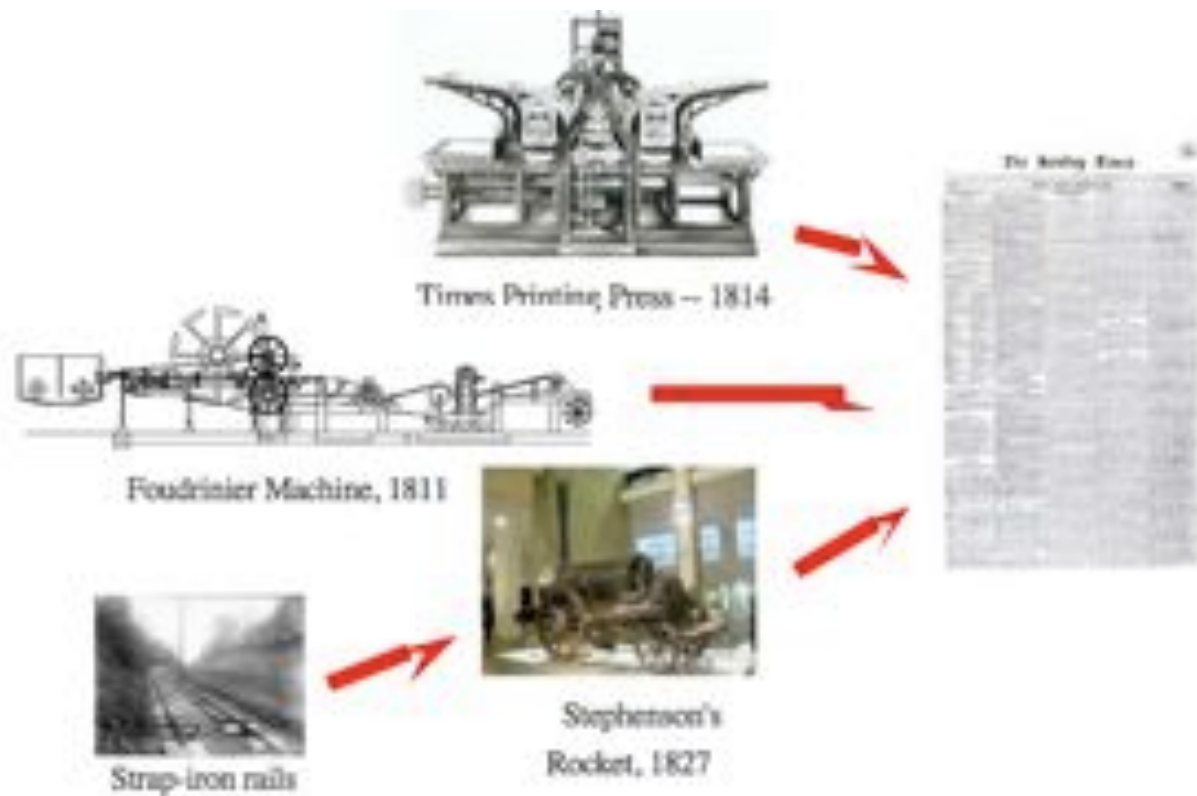


Complicating the Story, 1: The Interconnection of Technologies





Complicating the Story, 1: The Interconnection of Technologies



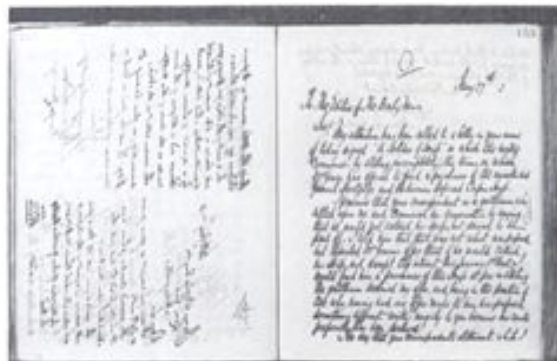


The Interconnection of Technologies: Managing correspondence

Letterpress and letterpress book,
late 19th c.



2.1 A letter press in action. (Catalogue for Youmans and Ebe, 1901, Hagley Museum and Library)



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



Wooten desk



Genuine Shannon Sectional Cabinets

THE Shannon Arch method has been for twenty years, and is today, the safest way to file letter or cap size papers.

Prices quoted include stock index (please specify in your order the type of indexes desired).

Price "with lock" means the "J and A" combination locking device described on page 6.



Compressor on cover keeps papers snugly together, pointed turn shows second of transfers for locating back correspondence.



No. 1000, 1-1/2 Dr. Letter size Section, 10-1/2" x 10-1/2" x 10-1/2" No lock, Cap size, 10-1/2" x 10-1/2" x 10-1/2"



No. 1001, 1-1/2 Dr. Letter size Section, 10-1/2" x 10-1/2" x 10-1/2" No lock, Cap size Section, 10-1/2" x 10-1/2" x 10-1/2"



No. 1002, 1-1/2 Dr. Letter size Section, 10-1/2" x 10-1/2" x 10-1/2" No lock, Cap size Section, 10-1/2" x 10-1/2" x 10-1/2"



The Interconnection of Technologies: Managing correspondence



IN
UP-
RIGHT
UNITS.

Globe-Wernicke Vertical File.

Vertical filing is simply the filing of letters, papers, bills, etc., on edge in folders, instead of flat in the ordinary letter file. If not acquainted with the system we would like to explain its advantages. If familiar with it, however, we want to show you the best Vertical Filing Cabinet fitted with the most perfect Vertical Files for the system ever made. If you can't call, write us for pamphlet containing valuable information.

THE J. K. GILL CO.
PORTLAND, OREGON

The Pacific Monthly, advertising section, March 1904 scanned by Lincoln Cushing
For more items on Library Culture, see www.docspopuli.org



Complicating the Story, 2: The Social Setting of Technologies

The 19th c. newspaper required....

Specialization of
Skills



Specialization of
Commercial Roles





Complicating the Story, 2: The Social Setting of Technologies

What made possible the modern newspaper?



Mass literacy,
Availability of capital
Emergence of professional journalism
Shifts in political partisanship, relaxation
of censorship
Rise of science & "objectivity"
Modern advertising

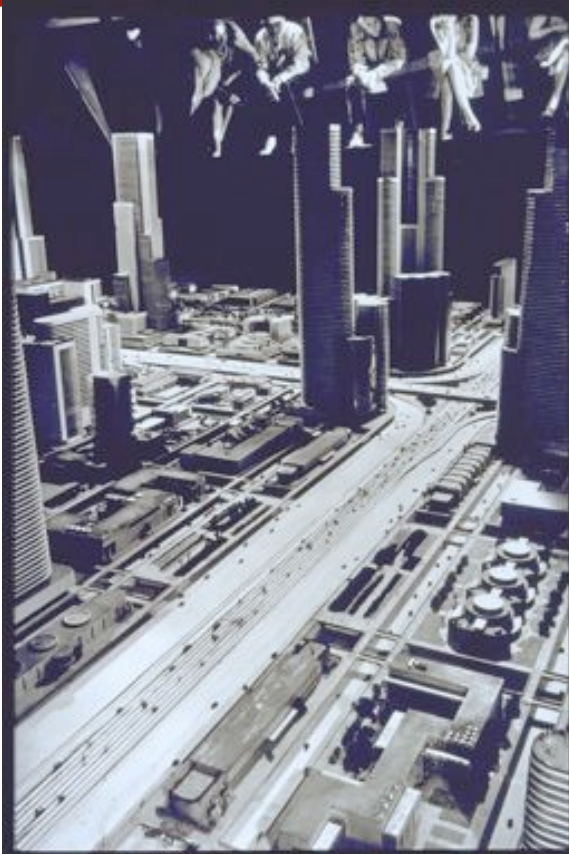




Why Study History, 1: Looking Ahead



Every Age Gets the Future it Thinks It Wants



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



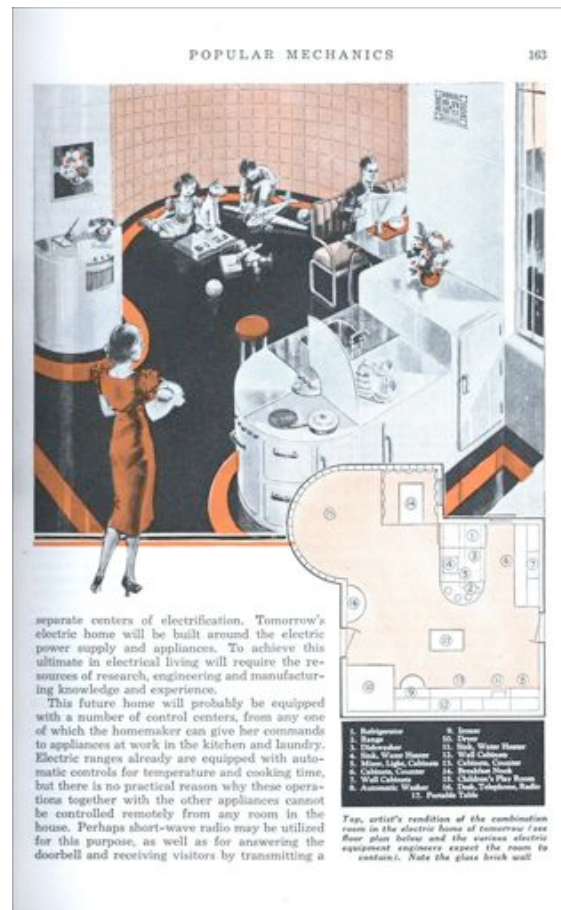
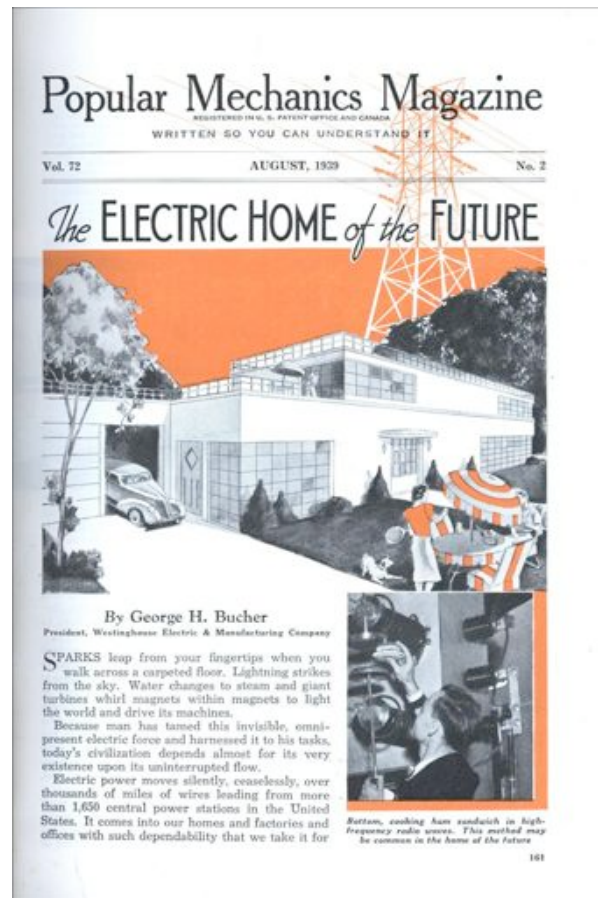


Figure 3
Sketch of the center of New Era Model city, from Charles Cary's *New Era* (1897). Cary depicts one of technological utopia's metropolitan centers, the equivalent of the modern megalopolis.

Milo Hastings, "City of Endless Night" (Berlin, 2041), 1920



Projecting technologies



Libbey-Owens-Ford, 1943

Westinghouse Electric Home of the Future, 1939



Plastics!

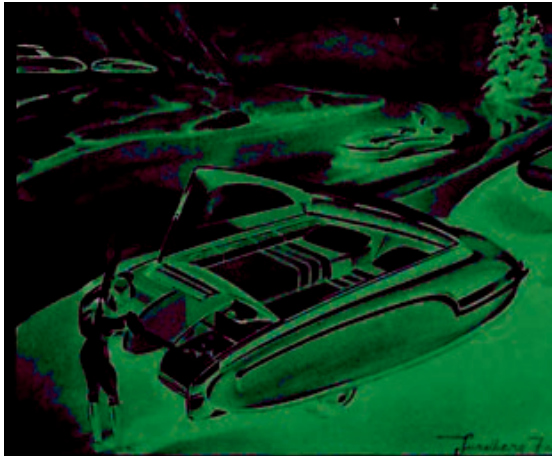


Figure 3
Industrial designer Carl W. Sundberg tantalized Americans with this vision of an all-plastic auto trailer/camper/motorboat shell. *Modern Plastics* 22 (May 1945), p. 106.

"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!



Two Ways of 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 2011?





Anticipating Change





Anticipating Social Change





Anticipating Social Change

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

Recognizing the historical roots of "news," "information," "intellectual property," "objectivity," etc.

(PD, next time)



The Uses of History, 2: Looking Back

Every age writes the history it needs.

How can "information" serve as a lens to organize historical accounts?

(PD, next time)



Assignment for 1/20

Pick one of the following and explain how it might be serve as an "information technology." Try to make your answers ingenious without being implausible. Bring your answer to class.

- a bicycle
- a necktie
- a blanket
- a piece of string
- a dishrack