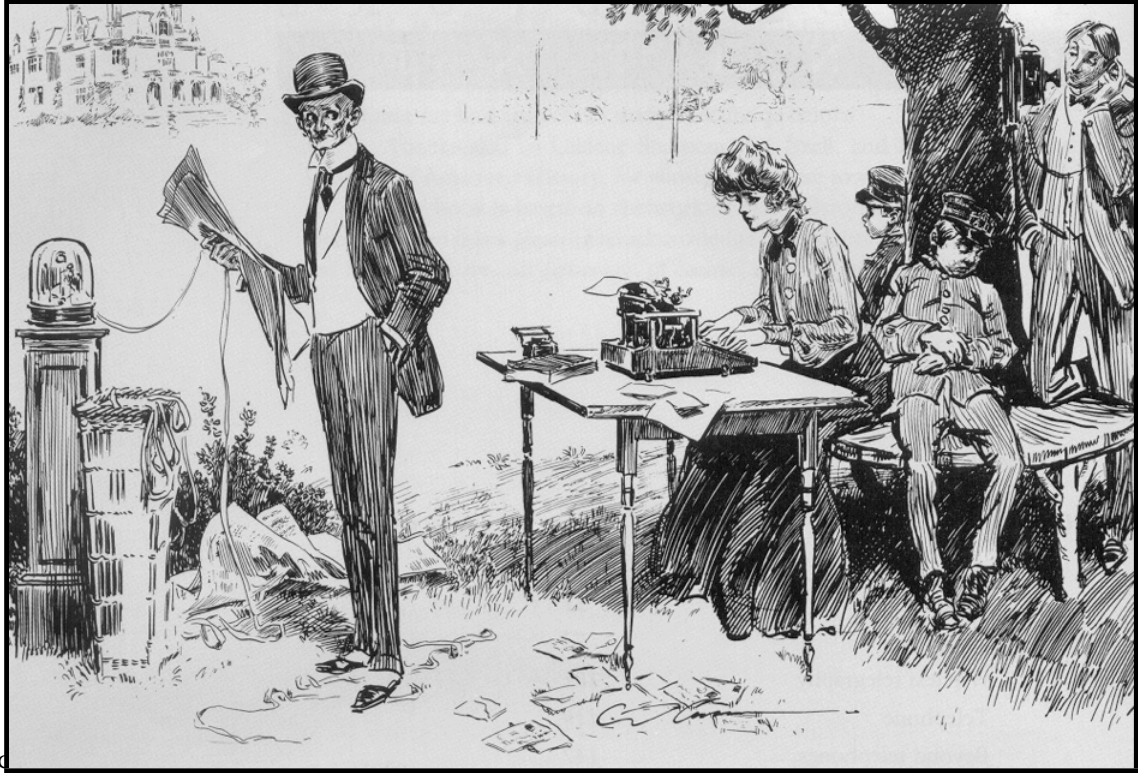


Historical Perspectives on Communications and Computing

INF 385T • Fall 2011



The history of the information age is about more than just the electronic digital computer. It is the story of a wide range of human activities, scientific practices, and technological developments. The story begins in the early 19th century with the emergence of new demands for communications and information management — from scientific researchers, expanding government bureaucracies, and increasingly national and international corporations. It includes not only “computers” (itself a large and diverse category) but data processing, communications, and visualization technologies, as well as people, practices, and organizational structures.

In this course we will explore the history of computing and communications in all of its forms and varieties. We will situate the computer in the broader history of technology, but also consider it from the perspectives of the history of science, labor history, and social history.

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Course Schedule:

In addition to doing the required readings and preparing for discussions, each participant will select two supplementary readings to review and present to the class.

I You say you want a revolution ...

August 29: intro to the information age; bad historiography; planning for the future.

Required Reading(s):

Daniel Headrick. *When Information Came of Age: Technologies of Knowledge in the Age of Reason and Revolution, 1700-1850*. Oxford University Press, 2000. Chapter 1, "Information and its History."

James R. Beniger. *The Control Revolution: Technological and Economic Origins of the Information Society*. Harvard University Press Cambridge, 1986. Chapter 1, "The Evolution of Control."

II The Origins of the Information Age

September 12: historicizing information "revolutions"; statistics & quantification; print culture; the emergence of modern science

Required Reading(s):

Mario Biagioli. "From Book Censorship to Academic Peer Review". In: *Emergences: Journal for the Study of Media & Composite Cultures* 12.1 (2002), pp. 11–45

Robert Darnton. "An Early Information Society: News and the Media in Eighteenth-Century Paris". In: *The American Historical Review* 105.1 (2000), pp. 1–35

Notes on Elizabeth Eisenstein. *The Printing Revolution in Early Modern Europe*. Cambridge University Press Cambridge, 1983.

Supplementary Readings/Reports:

Johns, *The nature of the book: print and knowledge in the making*; Porter, *Trust in Numbers: the pursuit of objectivity in science and public life*

III The Annihilation of Space & Time

September 19: communications & transportation; geography & information tech

Required Reading(s):

David M. Jenkins. *The Postal Age: The Emergence of Modern Communications in Nineteenth-Century America*. University of Chicago Press, 2006. Excerpts.

Richard John. "Recasting the Information Infrastructure for the Industrial Age". In: *A Nation Transformed By Information: How Information Has Shaped the United States from Colonial Times to the Present*. Ed. by Alfred Chandler and James Cortada. Oxford University Press, 2000. Excerpts.

Supplementary Readings/Reports:

Gabler, *The American telegrapher: a social history, 1860-1900*; Downey, *Telegraph messenger boys: labor, technology, and geography, 1850-1950*; Standage, *The Victorian Internet: the remarkable story of the telegraph and the nineteenth century's on-line pioneers*

IV Networked Society?

September 26: social history of the telephone; gender and communications

Required Reading(s):

Claude Fischer. "'Touch Someone': The Telephone Industry Discovers Sociability". In: *Technology and Culture* 29.1 (1988), pp. 32–61

Michèle Martin. "Feminisation of the Labour Process in the Communication Industry: The Case of the Telephone Operators, 1876-1904". In: *Labour / Le Travail* 22 (1988), pp. 139–162

Kenneth Lipartito. "System Building at the Margin: The Problem of Public Choice in the Telephone Industry". In: *The Journal of Economic History* 49.2 (1989), pp. 323–336

Supplementary Readings/Reports:

Pool, *The Social Impact of the Telephone*; Green, *Race on the Line: Gender, Labor, and Technology in the Bell System, 1880-1980*; Fischer, *America Calling: A Social History of the Telephone to 1940*

V Mass Culture/Mass Media

October 3: advertising; radio; information vs. misinformation

Required Reading(s):

Roland Marchand. *Advertising the American Dream: Making Way for Modernity, 1920-1940*. Berkeley: University of California Press, 1985. Excerpts.

Susan Douglas. "Popular Culture and Populist Technology: The Amateur Operators". In: *Inventing American Broadcasting, 1899-1922*. Baltimore, MD: Johns Hopkins University Press, 1987

Malcolm Gladwell. "The Science of Shopping". In: *New Yorker* (1996)

Supplementary Readings/Reports:

Lears, *Fables of Abundance: A Cultural History of Advertising in America*; Tichi, *Electronic Hearth: Creating an American Television Culture*; McLuhan and Fiore, *The Medium is the Massage*

VI Computing Before the Computer ...

October 10: the office machines industry of the 19th century; corporate control and communications; "industrializing" information

Required Reading(s):

Martin Campbell-Kelly and William Aspray. *Computer: A History of the Information Machine*. Basic Books, 1996. Read the first half.

Supplementary Readings/Reports:

JoAnne Yates. *Structuring the Information Age: Life Insurance and Technology in the Twentieth Century*. Johns Hopkins University Press, 2005; James Cortada. *Before the Computer: IBM, Burroughs and Remington Rand and the Industry They Created, 1865-1956*. Princeton: Princeton University Press, 1993; David Alan Grier. *When Computers Were Human*. Princeton University Press, 2005; Jon Agar. *The Government Machine: A Revolutionary History of the Computer*. MIT Press, 2003; Lars Heide. *Punched-card Systems and the Early Information Explosion, 1880-1945*. Johns Hopkins University Press, 2009

VII Cybernetics

October 17: information theory; systems sciences; computing as metaphor

Required Reading(s):

Peter Louis Galison. "The Ontology of the Enemy: Norbert Wiener and the Cybernetic Vision". In: *Critical Inquiry* 21.1 (1994), pp. 228–266

Geoffrey Bowker. "How to be Universal: Some Cybernetic Strategies, 1943-1970". In: *Social Studies of Science* 23.1 (1993), pp. 107–127

Lily Kay. "Cybernetics, Information, Life: The Emergence of Scriptural Representations of Heredity". In: *Configurations* 5.1 (1997), pp. 23–91

Supplementary Readings/Reports:

Mirowski, *Machine Dreams: Economics Becomes a Cyborg Science*; Haraway, "Cyborg Manifesto: Science, Technology, and Socialist-Feminism in the Late Twentieth Century"; Gibson, *Neuromancer*

VIII Giant Brains

October 24: computing and war; electronics and computing; computers as control systems

Required Reading(s):

Paul Edwards. *The Closed World: Computers and the Politics of Discourse in Cold War America*. The MIT Press Cambridge MA, 1996. Excerpts.

Supplementary Readings/Reports:

Flamm, *Creating the computer government, industry, and high technology A History of Modern Computing*; Akera and Nebeker, *From 0 to 1: an authoritative history of modern computing*; Ceruzzi, *Reckoners: The Prehistory of the Digital Computer, From Relays to the Stored Program Concept, 1935-1945*; Mindell, *Between human and machine: feedback, control, and computing before cybernetics*

IX Reinventing the Computer

October 31: business data processing; mini-computers; innovation and venture capital; work and organizational politics

Required Reading(s):

Martin Campbell-Kelly and William Aspray. *Computer: A History of the Information Machine*. Basic Books, 1996. Read second half.

Supplementary Readings/Reports:

Ceruzzi, *A history of modern computing*; Campbell-Kelly, *From airline reservations to Sonic the Hedgehog: a history of the software industry*

X New Modes of Organization: Software & Systems

November 7: software and the socio-technical system; systems analysis and operations research; computing as business process; gender

Required Reading(s):

Nathan Ensmenger. *The Computer Boys Take Over: Computers, Programmers, and the Politics of Technical Expertise*. MIT Press, 2010

Supplementary Readings/Reports:

Hashagen, Keil-Slawik, and Norberg, *History of Computing - Software Issues*; Zuboff, *In the Age of the Smart Machine: The Future of Work and Power*;

XI Hippies & Hackers

November 14: narratives; user communities; personal computers; politics; ideology

Required Reading(s):

Fred Turner. *From counterculture to cyberculture: Stewart Brand, the Whole Earth Network, and the rise of digital utopianism*. University of Chicago Press, 2006. Selected chapters.

Supplementary Readings/Reports:

Bardini, *Bootstrapping: Douglas Englebart, Coevolution, and the Origins of Personal Computing*; Cringely, *Accidental empires: how the boys of Silicon Valley make their millions, battle foreign competition, and still can't get a date*; Light, *From warfare to welfare : defense intellectuals and urban problems in Cold War America*

XII Intergalactic Digital Networks

November 21: the emergence of technical standards; defense funding; network effects; utopianism

Required Reading(s):

Janet Abbate. *Inventing the Internet*. MIT Press, 1999

Supplementary Readings/Reports:

Norberg, O'Neill, and Freedman, *Transforming Computer Technology: Information Processing for the Pentagon, 1962-1986*; Waldrop, *The dream machine: J. C. R. Licklider and the revolution that*

made computing personal; Roland and Shiman, *Strategic Computing: DARPA and the Quest for Machine Intelligence, 1983-1993*

XIII Information Society

November 28: internet architecture; code as law; simulations and simulacra

Required Reading(s):

Paul Edwards. "A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming". In: (2010). Selected chapters.