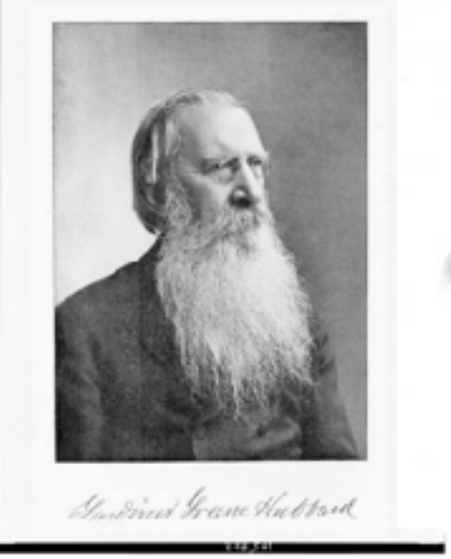
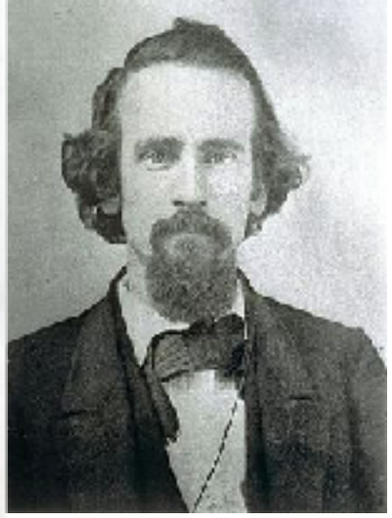
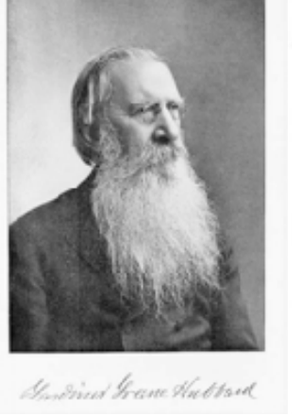
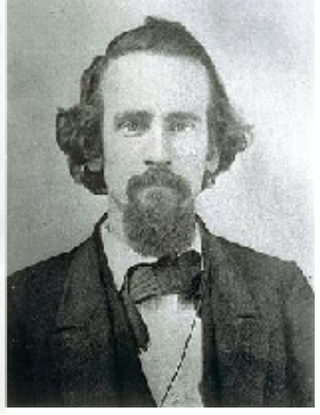




who's right?

How do the views of Hubbard, Green, and George towards the management of the telegraph differ? Who do you think has the best argument? Do any of these arguments throw light on the management of the Internet?





communications revolution

technology to wish upon

History of Information

March 14, 2017


NEW YORK AND LONDON TALK FREELY, OPENING NEW RADIOPHONE SERVICE; FIRST PRIVATE CALL TO NEW YORK TIMES

LONDON HAILS NEW TIE

Radiophone Is Seen as Equal in Importance to Opening of Cable.

SERVICE IN GREAT DEMAND

Business Houses Are Among the First to Take Advantage of Quick Intercourse With Us.

SIMPLICITY STIRS WONDER

Reception Appears to Be Better Than That Experienced When Cables Were Working.

30 CALLS ARE MADE IN DAY

Static Troubles Users Slightly, but Voices Usually Are Distinct.

TIME EXTENDED TO 6:30 P.M.

Sir Evelyn Murray and W. S. Gilbert Call Where New Link Delivers Rulings.

SOCIAL AND BUSINESS CALLS

Two Advertisements Also Cross Ocean to The Times—Service Continues Until 6:30 A. M. Today.

His Honor of New York Telephones to London's Lord Mayor

Photo source: *The New York Times*

setting in history

anniversaries …

March 7, 1927, first transatlantic telephone call

`"How's the weather over in London?"`

March 5, 1877, Rutherford B. Hayes inauguration

… and last year

July 27, 1866, SS Great Eastern arrives in Newfoundland with transatlantic cable

History of Information

more recent history: www 28th anniversary

Three challenges for the web, according to its inventor

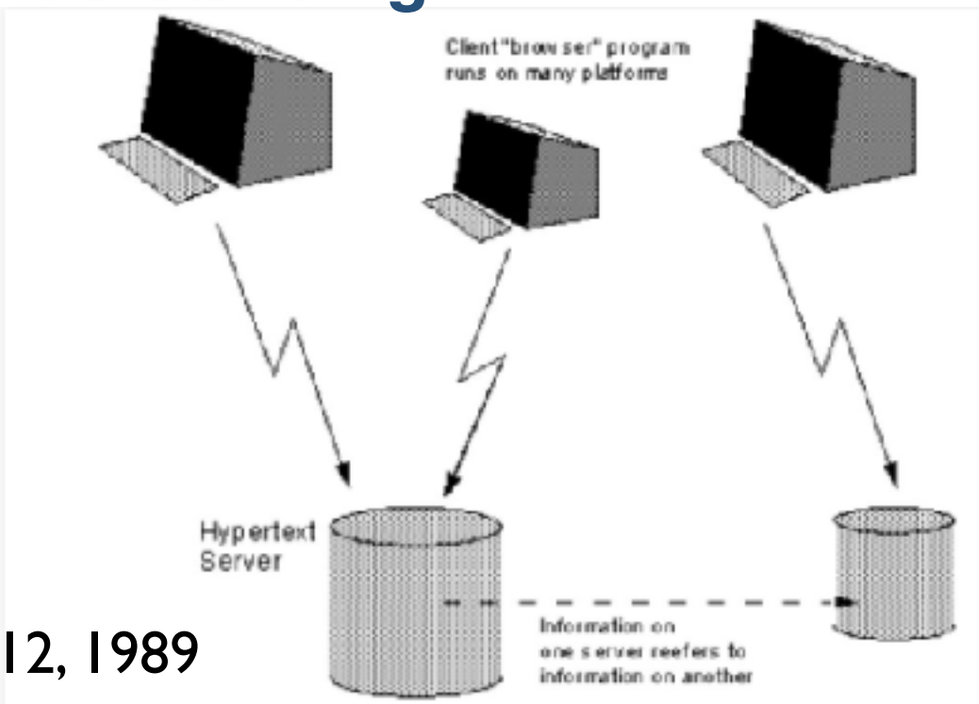
Web Foundation · March 12, 2017

Today is the world wide web's 28th birthday. Here's a message from our founder and web inventor Sir Tim Berners-Lee on how the web has evolved, and what we must do to ensure it fulfils his vision of an equalising platform that benefits all of humanity.

1) **We've lost control of our personal data**

2) **It's too easy for misinformation to spread on the web**

3) **Political advertising online needs transparency and understanding**



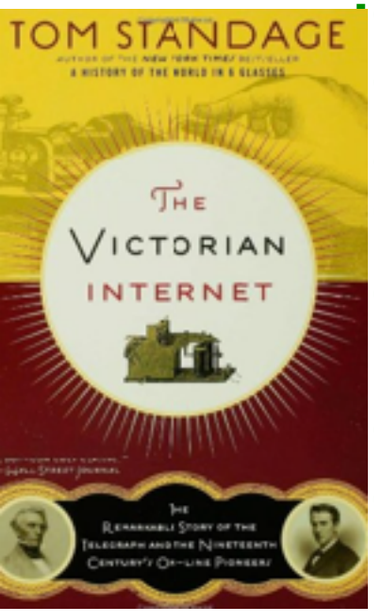
March 12, 1989

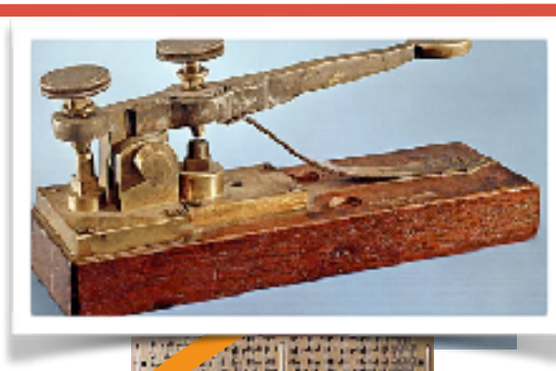
The Progress of the Century
Currier & Ives
Philadelphia Centennial Exhibition 1876

progress: into the wired world

year

2017
1980
1950
900
800
700
600
200
600
400
0
500
3000
5000
30,000
50,000



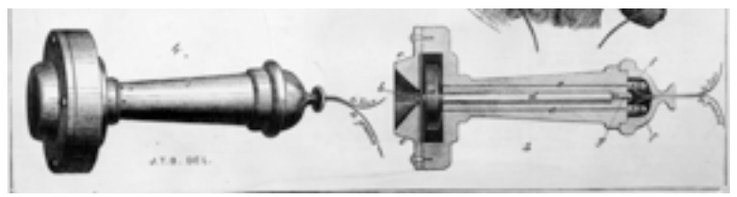


IBM

UDACITY

fake news

real tech at last!

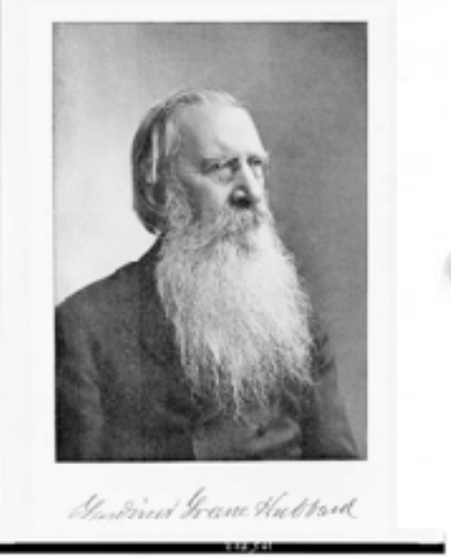


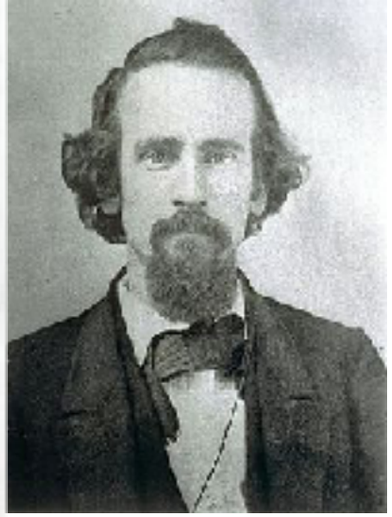
"**telegraph and telephone** the second communications revolution to occur in the United States"

— R. John, *Network Nation*

We will be focussing on the telegraph.

1 2 3 4 5 6 7 8 10 11 12 13 14 15





wishing on technology (again)

readers respond

enthusiastic response

tech and techies

developments

Green — 33%

Hubbard — 27%

George — 15%

(n)either — 25%

Green — JT Kim

Hubbard — Alexandra Campbell

George — Kevin Ponn

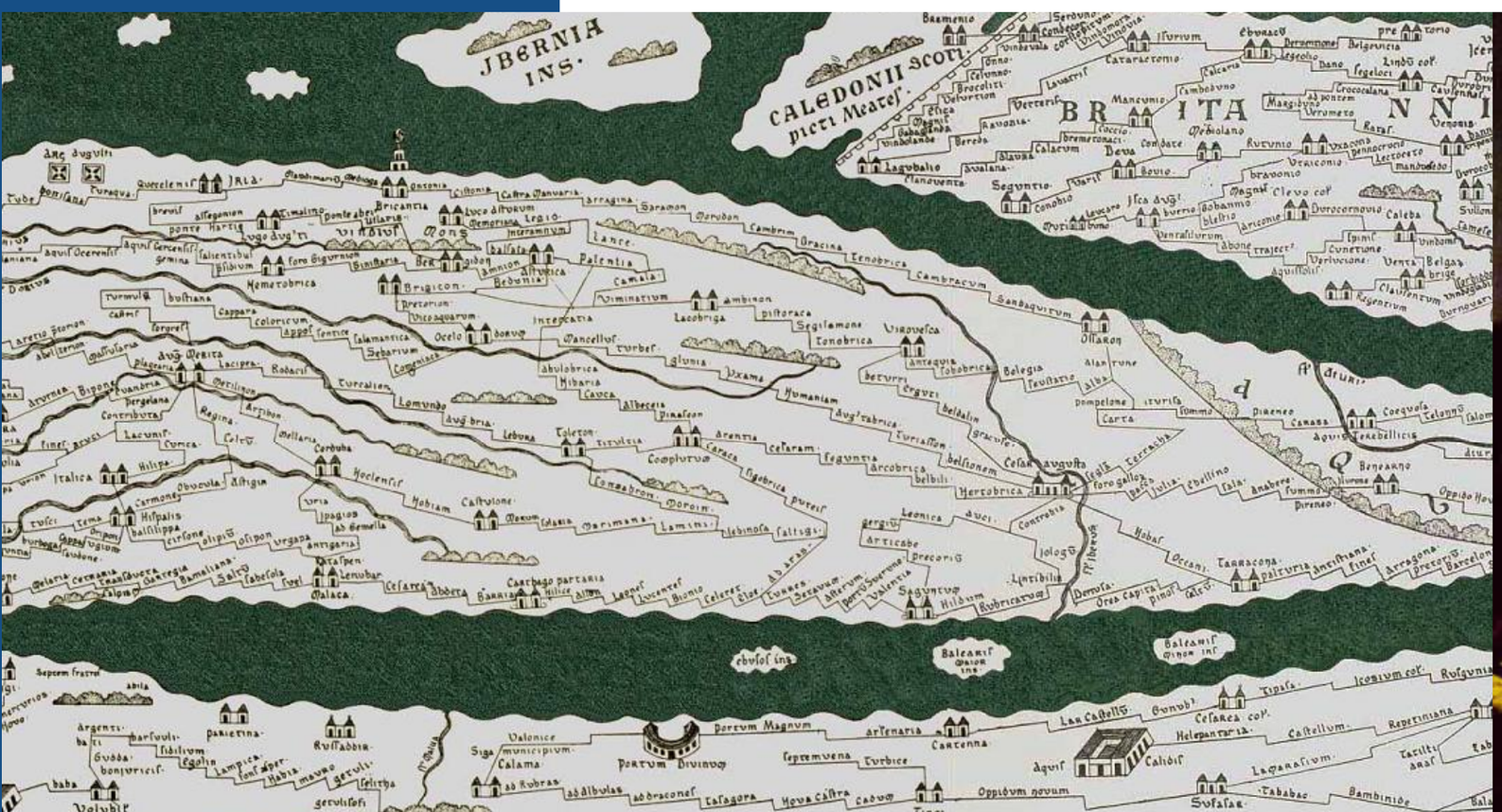
Royal Mail Opinion

It's Royal Mail's 500th birthday,

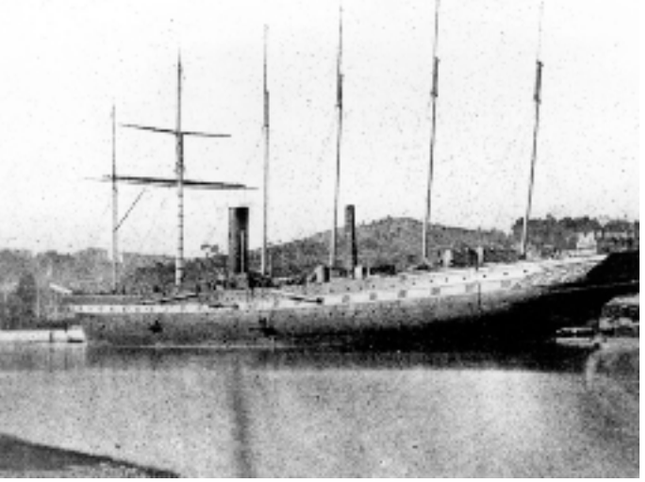
changing world: overland networks

Rome to Holy Roman Empire

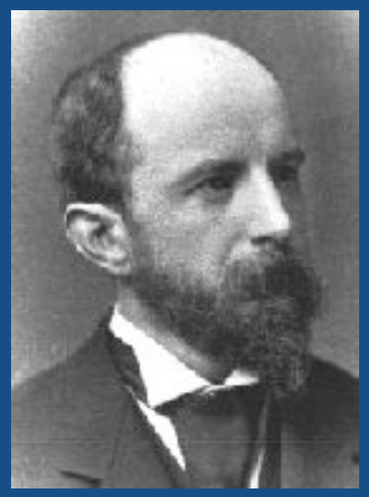
"it took twenty-six days for Caesar to send a letter from Britain to his dear friend Cicero in Rome"



Postmaster for the Holy Roman Empire Franz von Tassis 1489



two if by sea



messages by sea

irregular: merchant ships

regular: packet boats

speed: steam

"Before the boy was six years old he had seen four impossibilities made actual--**the ocean-steamer, the railway, the electric telegraph,** and the Daguerreotype."

--Henry Adams,
The Education of Henry Adams [1905]

Wedgwood's Etruria

Eerie Canal 1825

built infrastructure

canals

Wedgwood's distribution

railways

mail coach, c. 8 mph

early train, 20-30 mph

"The journey from New York to San Francisco consumed, formerly … six months. It is now accomplished in seven days" —Jules Verne,

Around the World in 80 Days, 1873

from sea to shining sea

1861

1869

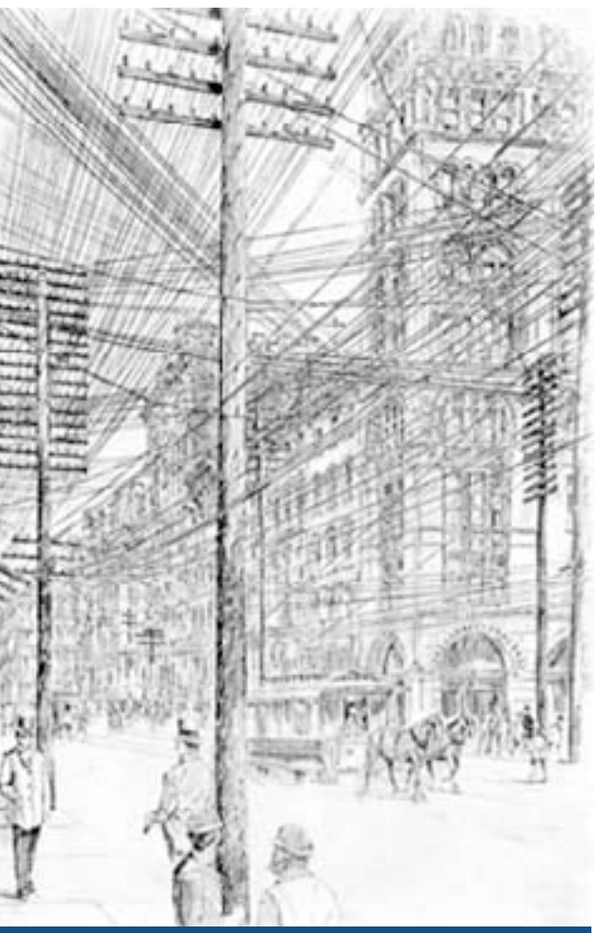
second time lucky

transatlantic cable

1858 first attempt

1866 second (successful) attempt

further afield



"When the line was completed, a grand celebration was held on 23 June 1870 at [John] Pender's house … in London. The first messages were simply 'How are you?', to which came the reply 'All well'. The astonishing fact that this exchange took less than five minutes, when **communication with India** had previously taken several months."

Oxford Dictionary of National Biography

developments

going local

CHAPTER CVIII. [1852]

AN ACT

To provide for the construction of Telegraph Lines within the the State of California.

The People of the State of California, represented in Senate and Assembly, do enact as follows:

SEC. 1. The right and privilege is hereby granted to Oliver E. Allen and Clark Burnham, or their assigns, to construct and put in operation an Electro-Magnetic Telegraph Line, from the city of San Francisco to the city of Marysville, by the way of the cities of San Jose, Stockton and Sacramento, with right of way over any lands belonging to this State, and on or along any streets, roads or highways, or across any stream or streams; *Provided*, they do not obstruct the same, and no person or persons shall be allowed to locate, or construct, or run any Telegraph Line, or any portion thereof, within half a mile of the Line or route selected by the said Allen and Burnham or their assigns, except that when within half a mile of any incorporated city, the proprietors of any similar Line of Telegraph, may enter said city and depart therefrom, making their Station therein, within twenty yards of the Station of said Allen and Burnham, or their successors, for the term of fifteen years; *Provided*, that the said above named parties or their assigns shall, within eighteen months from the passage of this Act, construct and put in operation a Tele-

To whom granted

Rights and privileges.

Duty of grantees.

Communications "Revolution"

making progress

wishing on technology (again)

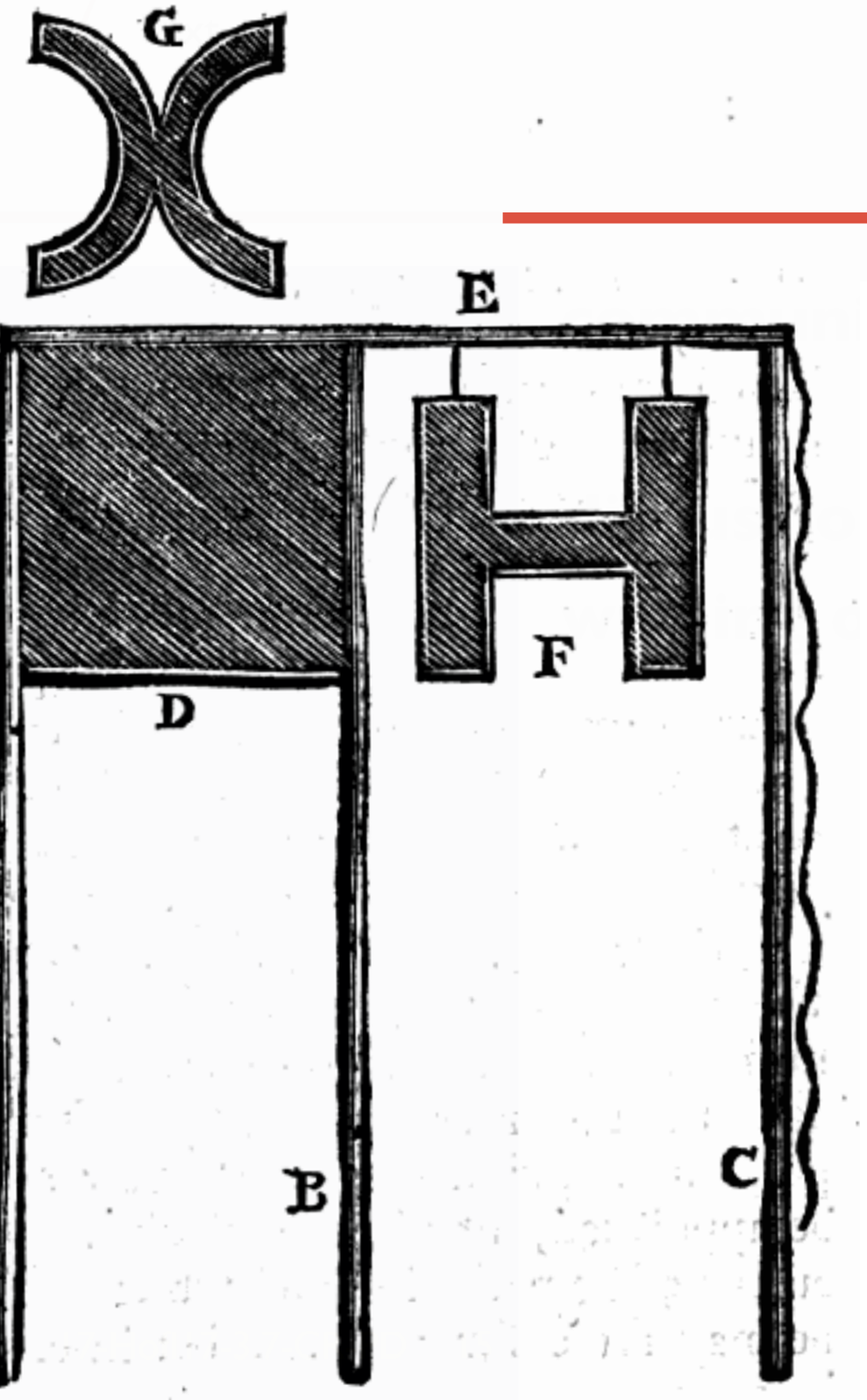
readers respond

enthusiastic response

tech and techies

developments

familiar figure?



Dr. Hook's *Diſcourſe to the* Royal Society, May 21. 1684. *ſhewing a Way how to communicate one's Mind at great Diſtances.*

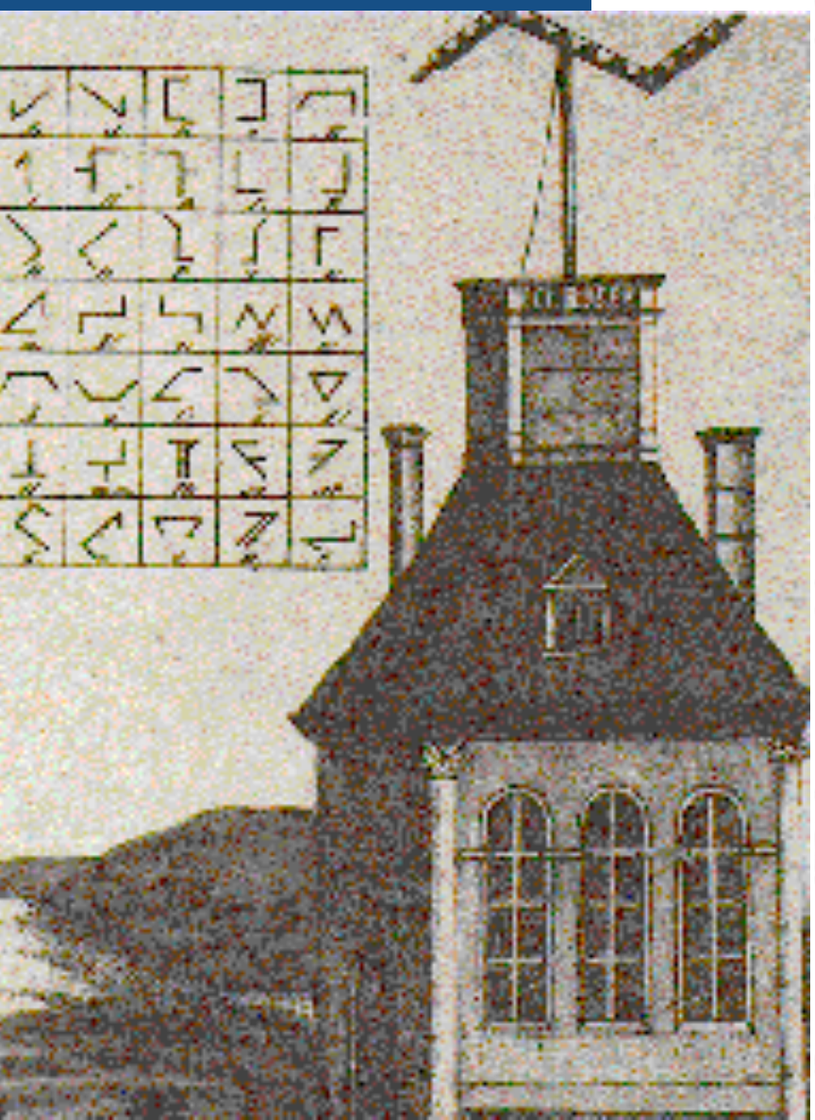
That which I now propound, is what I have ſome Years ſince diſcourſed of; but being then laid by, the great Siege of *Vienna*, the laſt Year, by the *Turks*, did again revive in my Memory; and that was a Method of diſcourſing at a Diſtance, not by Sound, but by Sight. I ſay therefore 'tis poſſible to convey Intelligence from any one high and eminent Place, to any other that lies in Sight of it, tho' 30 or 40 Miles diſtant, in as ſhort a Time almoſt, as a Man can write what he would have ſent, and as ſuddenly to receive an Anſwer, as he that receives it hath a Mind

"Voici le rapport du télégraphe qui nous arrive à l'instant. 'Condé être restituée à la République. Reddition avoir eu lieu ce matin à 6 heures'." —30 August, 1794

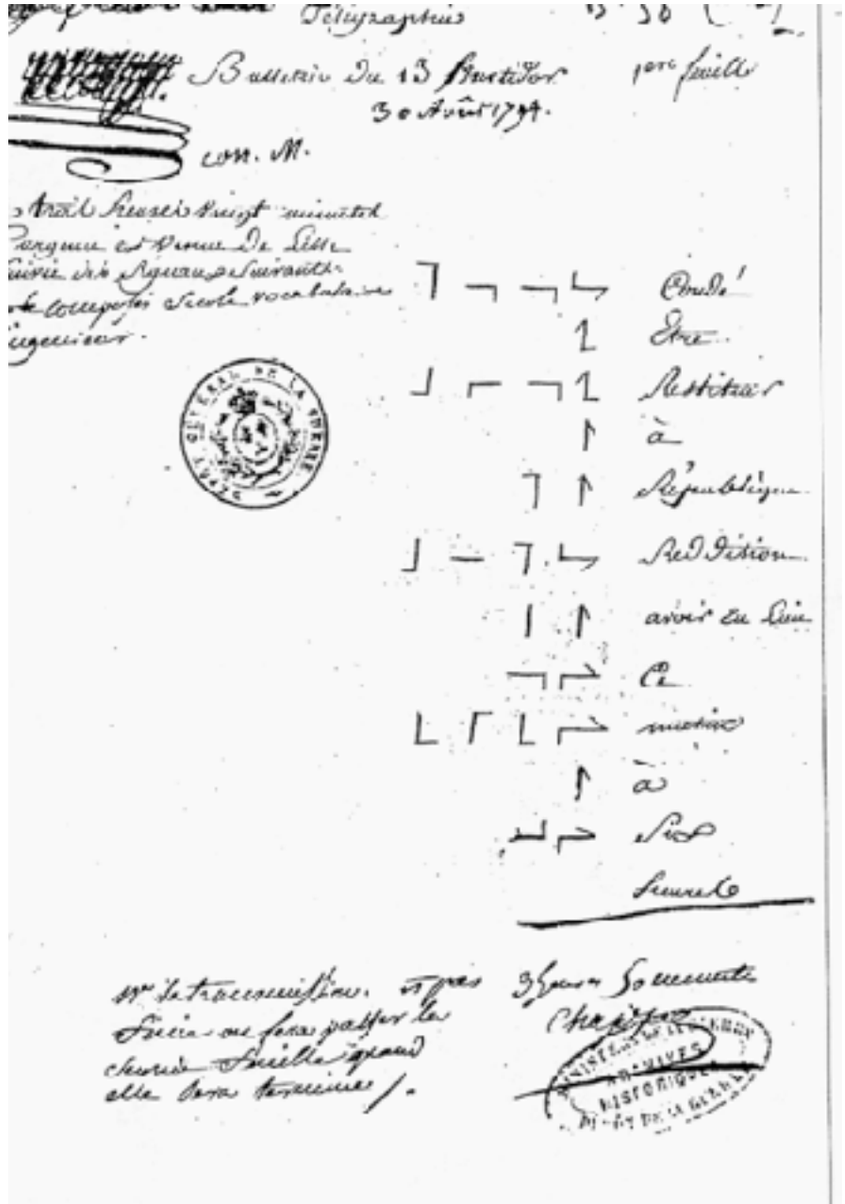
national télégraph

Claude Chappe (1763-1805)

Chappe télégraph



La Ligne Paris-Lille



early interconnections

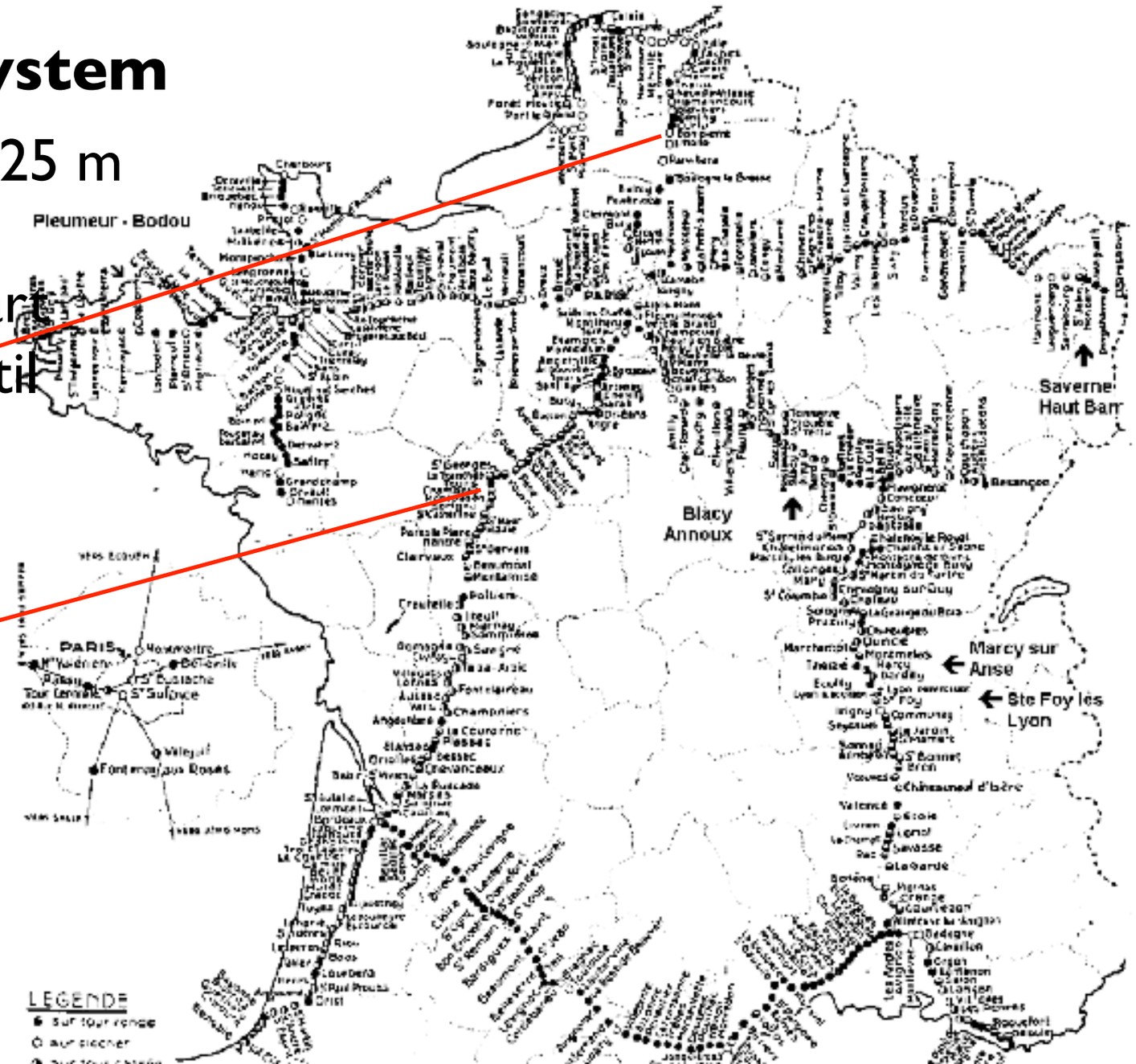
national system

5,000 km/3,125 m

534 stations

c. 6 miles apart

in service until c 1853



"The towers of Saint-Suplice are two huge clarinets, which is as good a shape as any, while the crooked, grimacing telegraph forms a pleasant accident on their roof."

--Hugo, *Notre Dame de Paris*

early interconnections

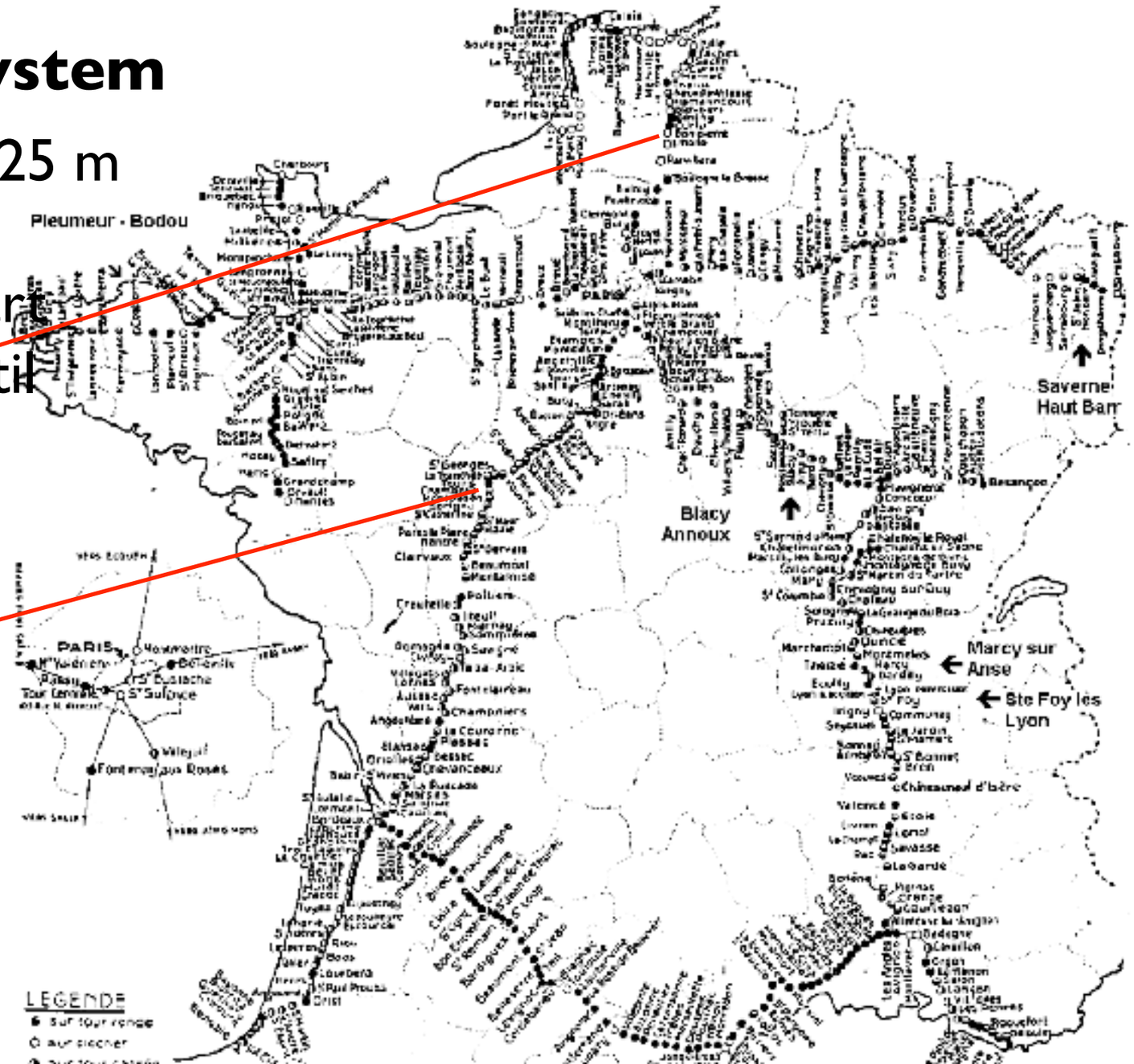
national system

5,000 km/3,125 m

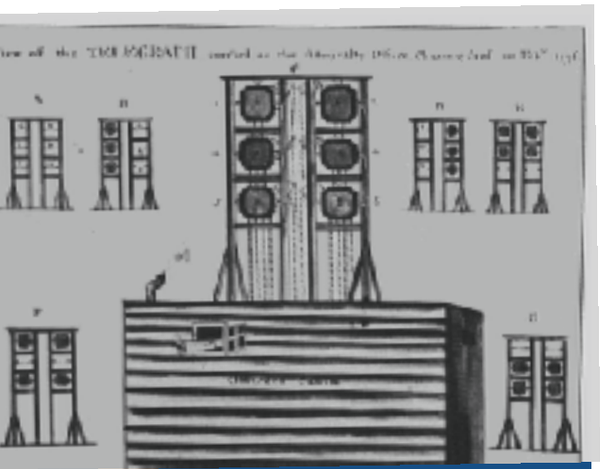
534 stations

c. 6 miles apart

in service until c 1853



military rivals



on land

the Admiralty "six-shutter" telegraph

Portsmouth to London (75 miles):

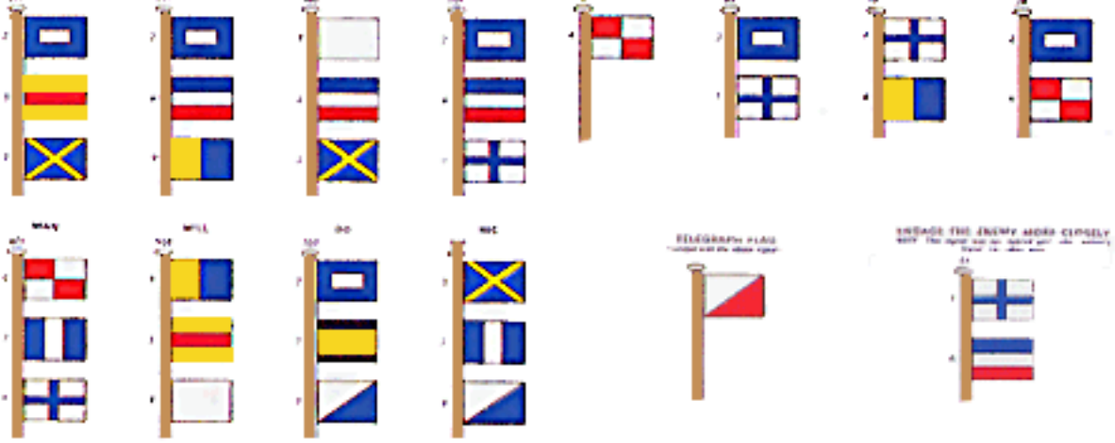
from 3 days *to* 15 minutes

rebuilt as a

Chappe "semaphore" telegraph, 1815

"[B]y the telegraph [man] renders himself as it were present in the same moment at distant places."

— *Monthly Review*



--Home Popham
Telegraphic Signals, or Marine Vocabulary, 1800

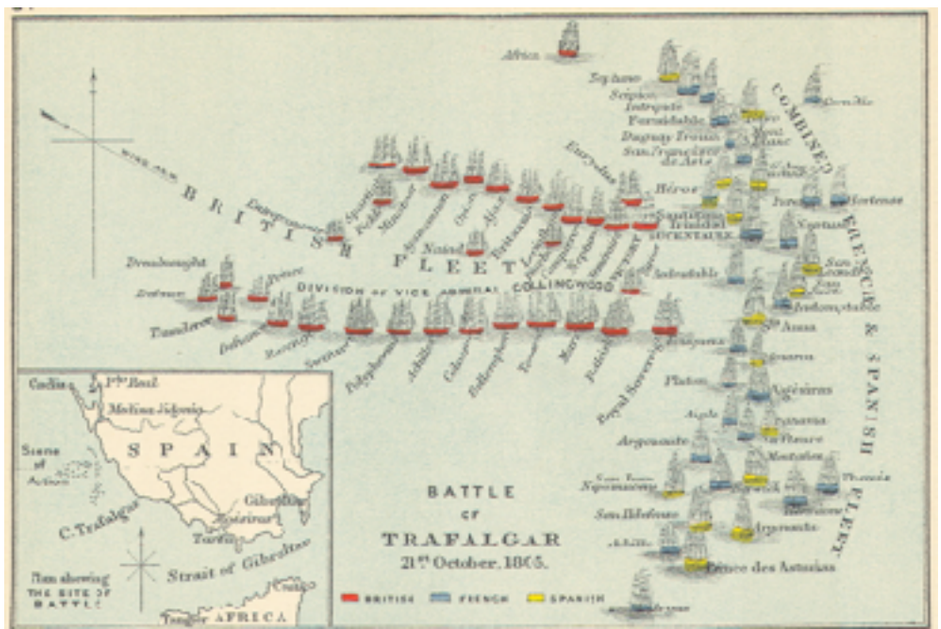
Samuel C. Reid
US Flag, 1818

naval revolution

Home Popham
1762–1820)

1805:

"Trafalgar, a 'revolutionary' battle in its effects, owed its nature to revolutionary tactics; but those tactics ... were chiefly the product of a revolution in control, brought about by the innovation of Home Popham's telegraphic signalling system."



-- William Keegan, *Battle at Sea*, 1988

changing perspectives

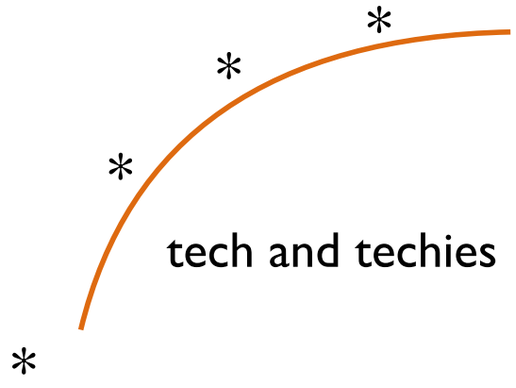
Battle of Copenhagen, 1801

Nelson's blind spot?

"'[l]eave off action … No, damn me if I do! You know, Foley,' said he to the captain, "I have only one eye. I have a right to be blind sometimes. Damn the signal! hoist mine for closer battle."

—"Life of Admiral Lord Nelson" *Select Reviews*, 1810

***control* or *controlled by*?**



tech and techies

XVII. *On the Electricity excited by the mere Contact of conducting Substances of different kinds. In a Letter from Mr.* Alexander Volta, *F. R. S. Professor of Natural Philosophy in the University of Pavia, to the Rt. Hon. Sir* Joseph Banks, *Bart. K. B. P. R. S.*

Read June 26, 1800.

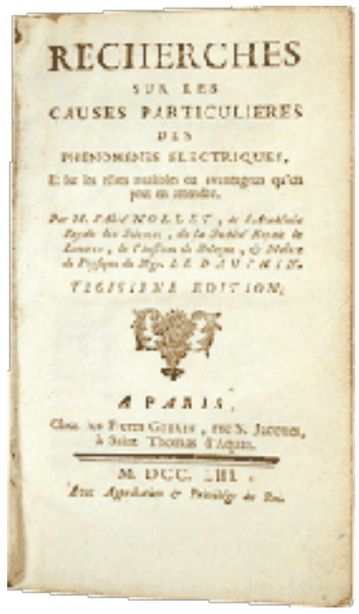
taking charge

monkish experiments

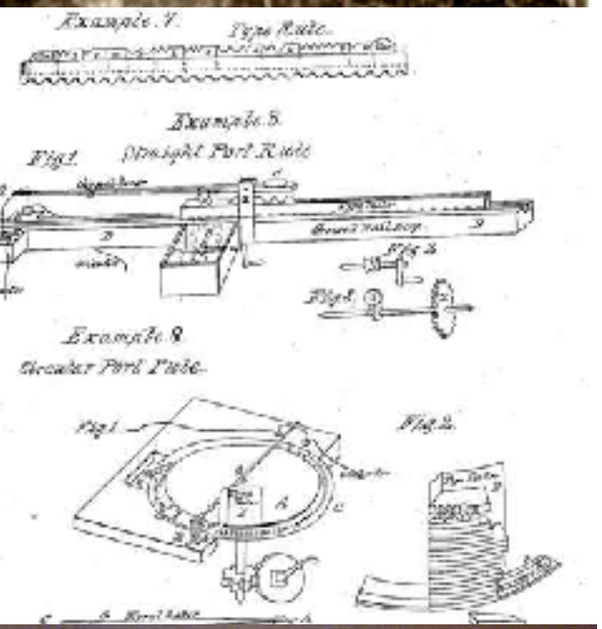
1753 Abbé Nollet's galvanism

180 Royal Guards; 1 km Carthusian monks

"when a Leyden jar was discharged, the white-robed monks reportedly leapt simultaneously into the air"



1800 Alessandra Volta's battery



along comes Morse

Samuel Morse (1791-1872)

"If the presence of electricity can be made visible in any desired part of the circuit, I see no reason why intelligence may not be instantaneously transmitted by electricity to any distance."

1837, patent filing; numerical codes

1843, Washington-Baltimore line (US govt funded)

1861, transcontinental telegraph

precise information

First. The *fullest and most precise information* can be almost instantaneously transmitted between any two or more points, between which a wire conductor is laid; that is to say, no other time is consumed than is necessary to write the intelligence to be conveyed, and to convert the words into the telegraphic numbers. The numbers are then transmitted nearly instantaneously, (or, if I have been rightly informed in regard to some recent experiments in the velocity of electricity, *two hundred thousand times more rapidly than light!*) to any distance, where the numbers are immediately recognised, and reconverted into the words of the intelligence.

Second. The same full intelligence can be communicated *at any moment, irrespective of the time of day or night, or state of the weather.* This single point establishes its superiority to all other modes of telegraphic communication now known.

Third. The whole apparatus will occupy but *little space,* (scarcely six cubic feet, probably not more than four;) and it may therefore be placed, without inconvenience, in any house.

Fourth. The *record of intelligence is made in a permanent manner, and in such a form* that it can be at once bound up in volumes convenient for reference, if desired.

Fifth. Communications are secret to all but the persons for whom they are intended.

"Electro-Magnetic Telegraphs"HR 713, 25th Congress 1838

Morse's Advantages

First. .. fullest and most precise information ... *two-hundred thousand times more rapidly than light!*

Second. … communicated irrespective of .. day or night, or .. weather

Third. … apparatus .. little space

Fourth. .. … record of intelligence is made in a permanent manner

Fifth. …. communications are secret

Communications "Revolution"

making progress

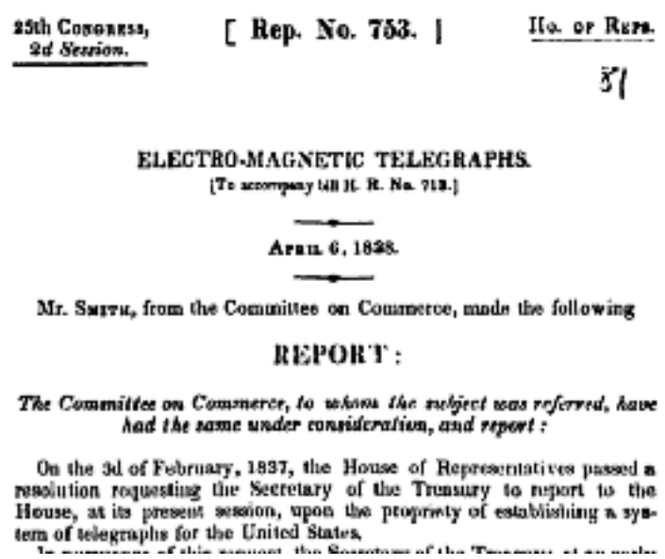
wishing on technology (again)

readers respond

enthusiastic response

tech and techies

developments



25th Congress, 2d Session. [Rep. No. 753.] No. of Reps. 57

ELECTRO-MAGNETIC TELEGRAPHS.

[To accompany bill H. R. No. 713.]

April 6, 1838.

Mr. Smith, from the Committee on Commerce, made the following

REPORT:

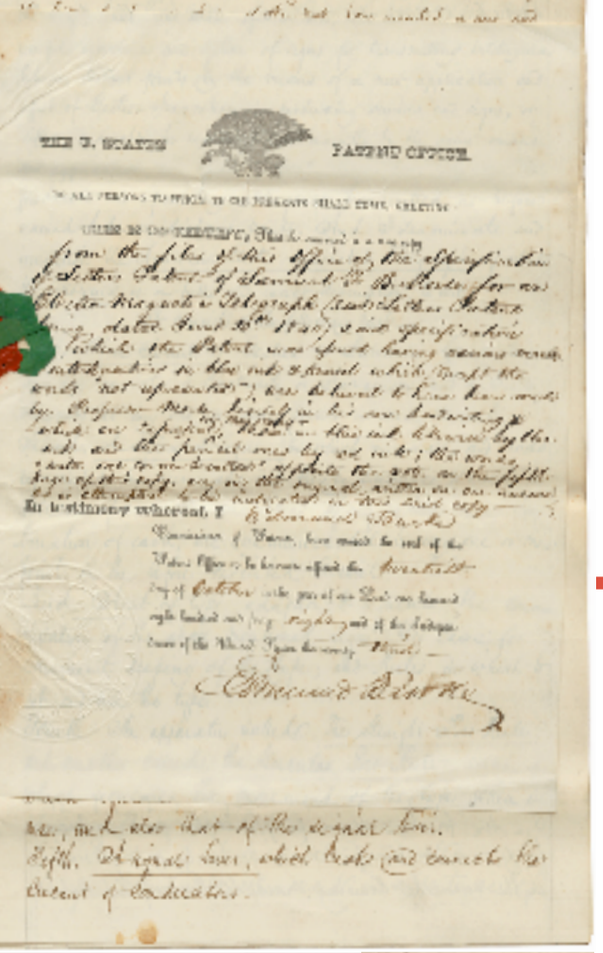
The Committee on Commerce, to whom the subject was referred, have had the same under consideration, and report:

On the 3d of February, 1837, the House of Representatives passed a resolution requesting the Secretary of the Treasury to report to the House, at its present session, upon the propriety of establishing a system of telegraphs for the United States.

clearing the fog

"its great and incalculable practical importance and usefulness to the country, and ultimately to the whole world ... presumptuous ... to attempt ... to calculate ... usefulness .. political, commercial, or social ... it is obvious, however, ... a revolution unsurpassed in moral grandeur by any discovery ... to the present day."

— Congressman "Fog" Smith,
Chairman, House Committee on Commerce



Patent exams
introduced 1836

Morse's
applications 1837
1840

Men of Progress
Christian Schussele, 1862

patent enthusiasm

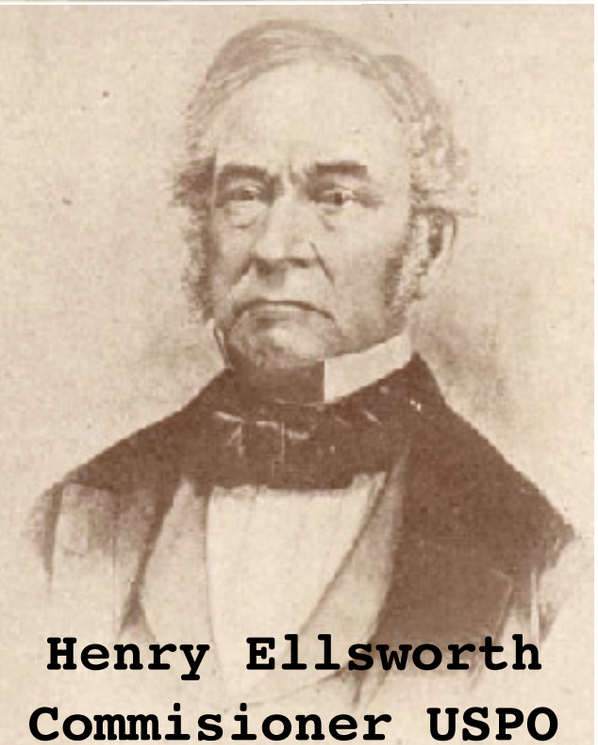
It is a matter of proud congratulation that we witness the rapid advancement of the arts and sciences on this side of the Atlantic, and to hear how frequently the skill and experience of our citizens are purchased by the wisest monarchs of Europe. The liberality with which our artisans are compensated abroad, is the highest proof of their superiority. Our manufactures are extending throughout the world. The ocean and the land alike bear testimony to American ingenuity. Praise is but a tribute due to her constitution and the laws, which extend equal rights and privileges to all.

Among the most brilliant discoveries of the age, the electro magnetic telegraph deserves a conspicuous place; destined, as it is, to change as well as hasten transmission of intelligence, and so essentially to affect the welfare of society, all that concerns its further developments will be hailed with joy.

Imagination can scarcely conceive what is now accomplished by the electric fluid, when confined and tamed, as it were, to the purposes of life. Thought has found a competitor! Nor is it less gratifying that this invention is American. To a native citizen belongs the merit of the discovery, and it is hoped that the country of his birth will reward him accordingly.

The public, at first, could scarcely believe it possible that intelligence can be sent at the rate of 188,000 *miles* in a *second;* nor that the earth would suffice for half of the current of communication; nor that currents of electricity from opposite poles would traverse the same wire at the same time,

Report of the USPO, 1843

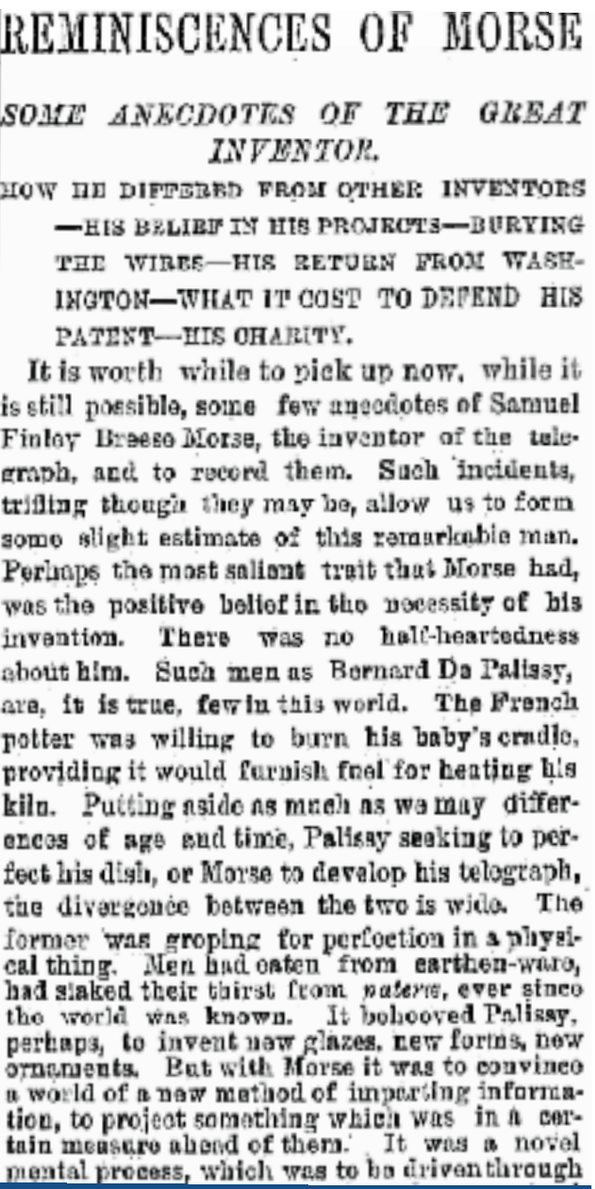


Henry Ellsworth
Commisioner USPO
1835-1845

the great inventor

"the great inventor ... to convince the world of a new method of imparting information ... on a higher plane than that accorded to mere inventors"

—*NY Times*, 1879



REMINISCENCES OF MORSE

SOME ANECDOTES OF THE GREAT INVENTOR.

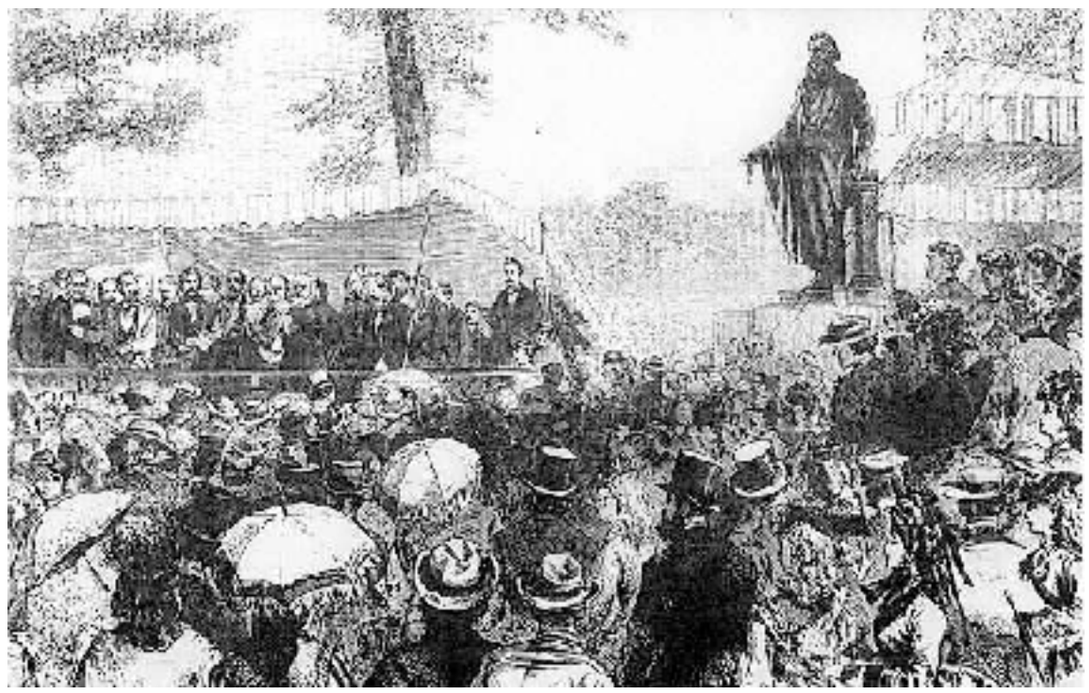
HOW HE DIFFERED FROM OTHER INVENTORS —HIS BELIEF IN HIS PROJECTS—BURYING THE WIRES—HIS RETURN FROM WASHINGTON—WHAT IT COST TO DEFEND HIS PATENT—HIS CHARITY.

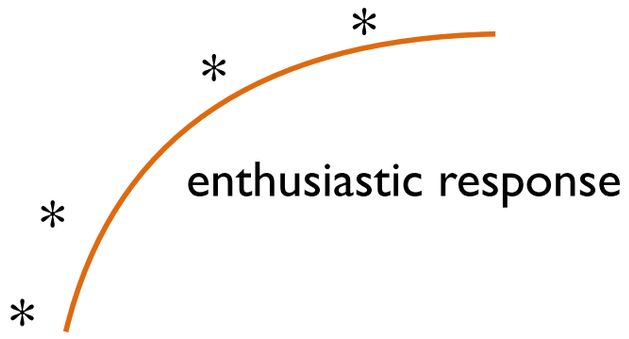
It is worth while to pick up now, while it is still possible, some few anecdotes of Samuel Finley Breese Morse, the inventor of the telegraph, and to record them. Such incidents, trifling though they may be, allow us to form some slight estimate of this remarkable man. Perhaps the most salient trait that Morse had, was the positive belief in the necessity of his invention. There was no half-heartedness about him. Such men as Bernard De Palissy, are, it is true, few in this world. The French potter was willing to burn his baby's cradle, providing it would furnish fuel for heating his kiln. Putting aside as much as we may differences of age and time, Palissy seeking to perfect his dish, or Morse to develop his telegraph, the divergence between the two is wide. The former was groping for perfection in a physical thing. Men had eaten from earthen-ware, had slaked their thirst from *vasera*, ever since the world was known. It behooved Palissy, perhaps, to invent new glazes, new forms, new ornaments. But with Morse it was to convince a world of a new method of imparting information, to project something which was in a certain measure ahead of them. It was a novel mental process, which was to be driven through

*NY Times*1879

17-Hof117-3.7-CR-PD 27

unveiling of Morse's statue June 10, 1871





reliable witnesses?

25th Congress, 2d Session. [Rep. No. 753.] No. of Reps. 51

ELECTRO-MAGNETIC TELEGRAPHS.
(To accompany bill H. R. No. 713.)

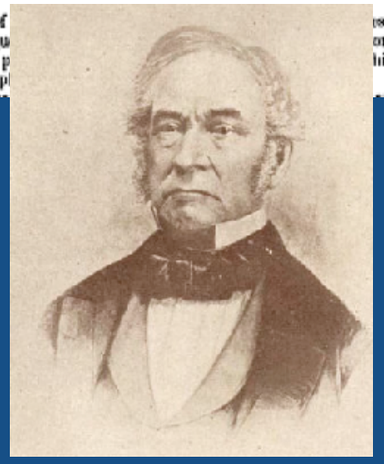
April 6, 1838.

Mr. Smith, from the Committee on Commerce, made the following

REPORT:

The Committee on Commerce, to whom the subject was referred, have had the same under consideration, and report:

On the 3d of ... passed a resolution requ... ort to the House, at its p... hing a system of telegrap...



business as usual

Congressman "Fog" Smith,
business partner

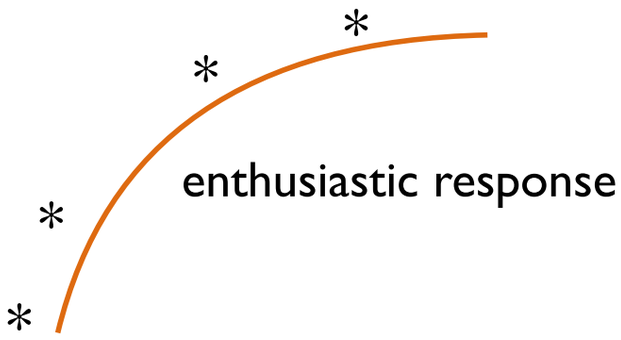
patent partner

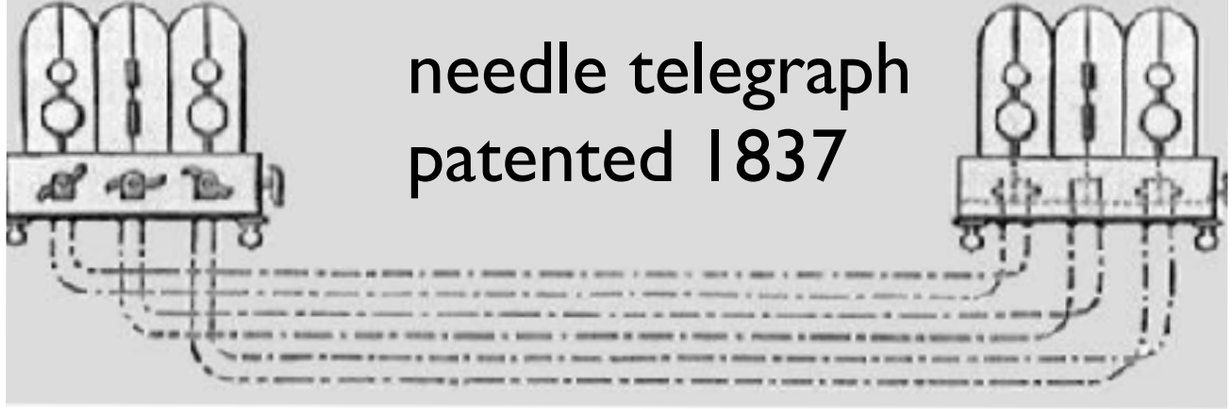
Henry Ellsworth

old friends (Yale 1810); prospective in-laws

corporate champion

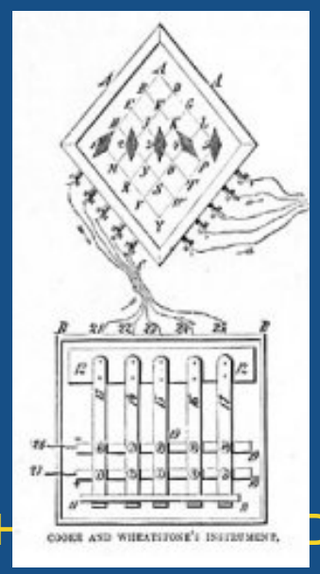
statute of limitations?





"this invention is American"

Pavel Schilling 1780–1836



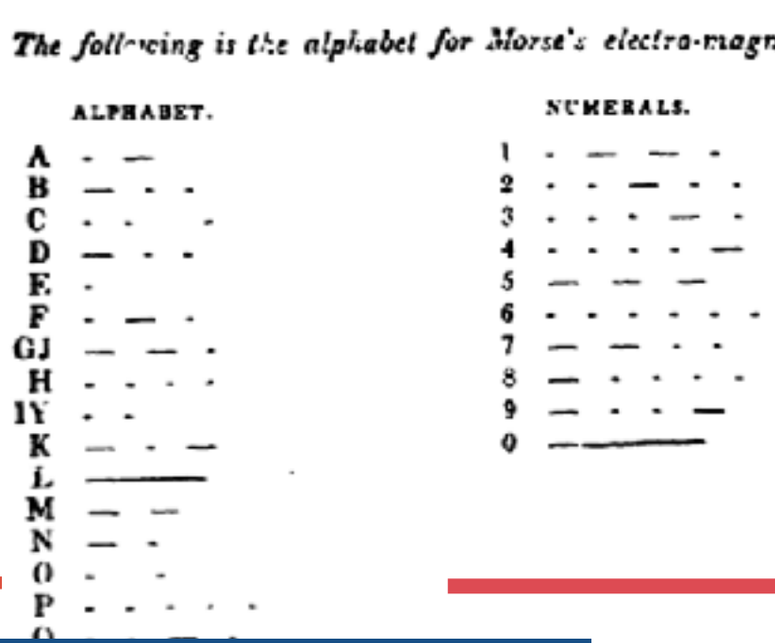
Carl Frederich Gauss (1777-1855)
Gottingen observatory telegraph, 1833

Pavel Lvovitch Schilling (1780-1836)
Russian Admiralty telegraph, 1835

William Cooke (1806-1879)
Charles Wheatstone (1802-1875)
GWR telegraph, 1837

Harrison Dyar, 1827, Long Island
PO problems

Joseph Henry, 1830
patent resistance


The following is the alphabet for Morse's electro-magnetic telegraph:

ALPHABET.

A	· —
B	— · ·
C	· · ·
D	— · ·
E	·
F	· · — ·
GJ	— — ·
H	· · · ·
IY	· ·
K	— · —
L	— — — —
M	— —
N	— ·
O	· ·
P	· · · · ·

NUMERALS.

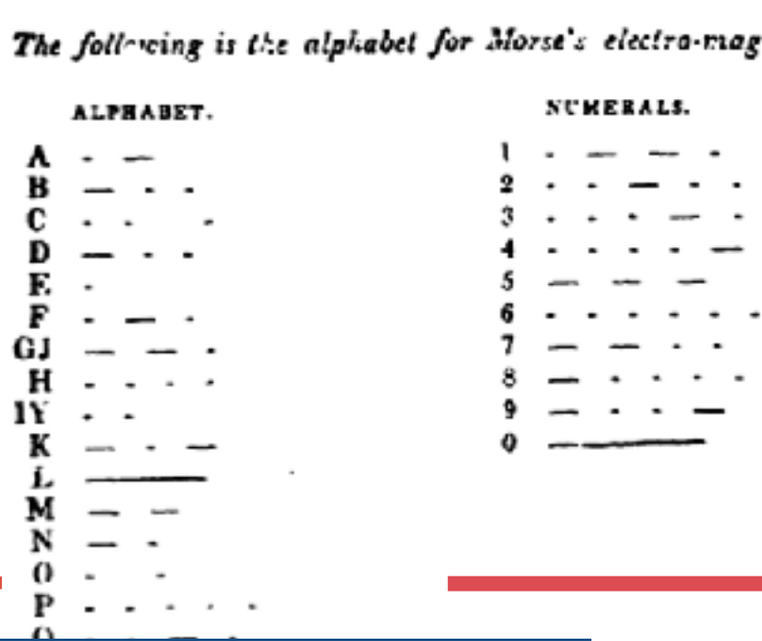
1	· — — — ·
2	· · — — ·
3	· · · — —
4	· · · · —
5	· · · · ·
6	— · · · · ·
7	— — · · ·
8	— — · · ·
9	— — · · —
0	— — — — —

so what did Morse do?

(a) introduced a "binary" code?

"The cost of *printing* … *a telegraphic dictionary* … contain[ing] a full vocabulary … with the numbers regularly affixed to each word … As every word is numbered, an obvious mode of rating might be, a *charge of a certain amount on so many numbers*."

—Morse to Secretary of the Treasury, 1837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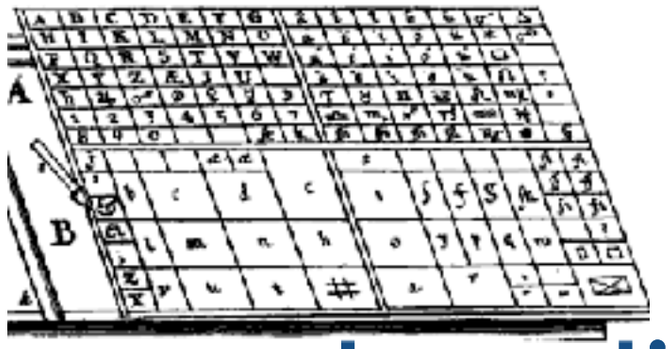


so what did Morse do?

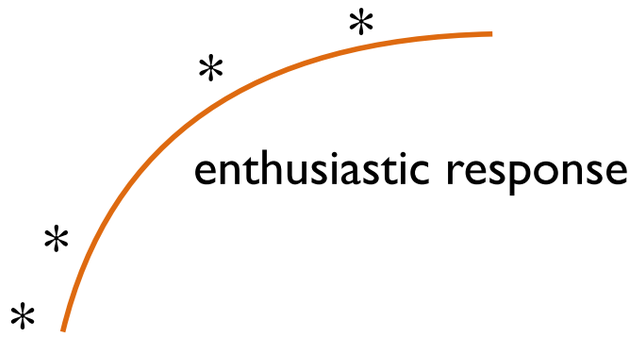
Alfred Vail
1807-1859

(a) introduced a "binary" code?

"After going through a computation, in order to ascertain the relative frequency of the occurrence of different letters in the English alphabet, Alfred was seized with sudden inspiration, and visited the office of the Morristown local newspaper, where be found the whole problem worked out for him in the type cases of the compositor. In this statement I have given the true origin of the misnamed " Morse " alphabet the very foundation and corner-stone of a new system, which has, since become the universal telegraphic language of the world."

—William Baxter (Vail's assistant) *The Real Birth of the Electric Telegraph*, [n.d.]

"It is singular" that a series "of mechanical and scientific failures [has] given a man such a name and so proud a place in history" — Baxter



(a) introduce a "binary" code

so what did Morse do?

(b) *re*introduced European electronic signaling

1837, 18 submissions to US government "RFP"

17 were line of sight

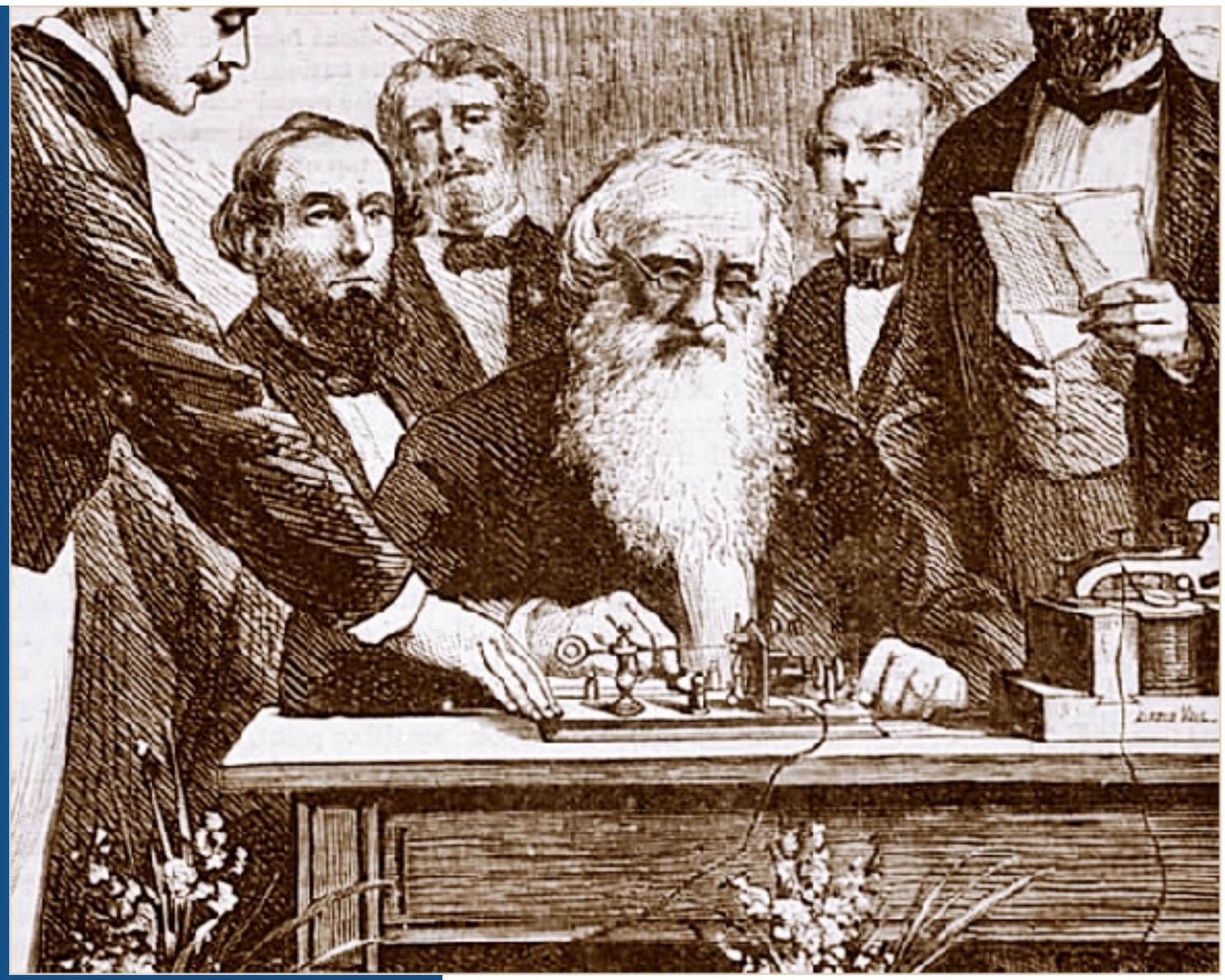
? worries about the Post Office monopoly

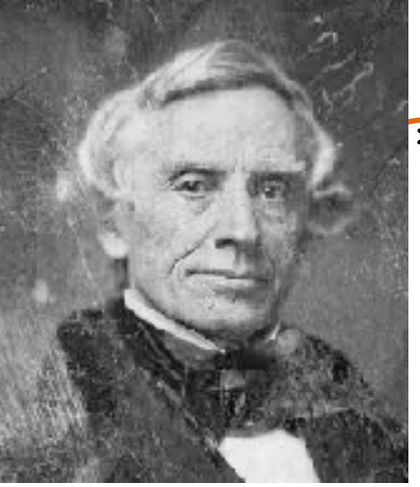
cp Harrison Dyer

cp Norvin Green

enthusiastic response

brothers in tech?





(a) introduce a "binary" code

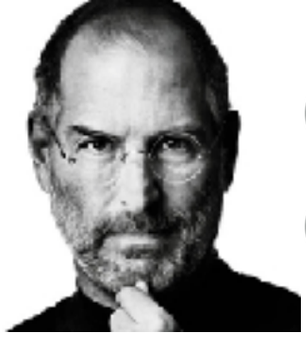
(b) reintroduced electronic signalling

so what did Morse do?

(c) introduced a simpler system

"[Wheatstone's]system more complicated and less efficient than the American telegraph ... the deflection of the needle became the principle upon which the savans of Europe based all their attempts ... another discovery ... by Ampère and Arago, immediately consequent on that of Oersted, namely: the electro-magnet which none of the savans of Europe ... ever thought of applying ... My telegraph is essentially based on this latter discovery."

—Morse to Congress, 1842



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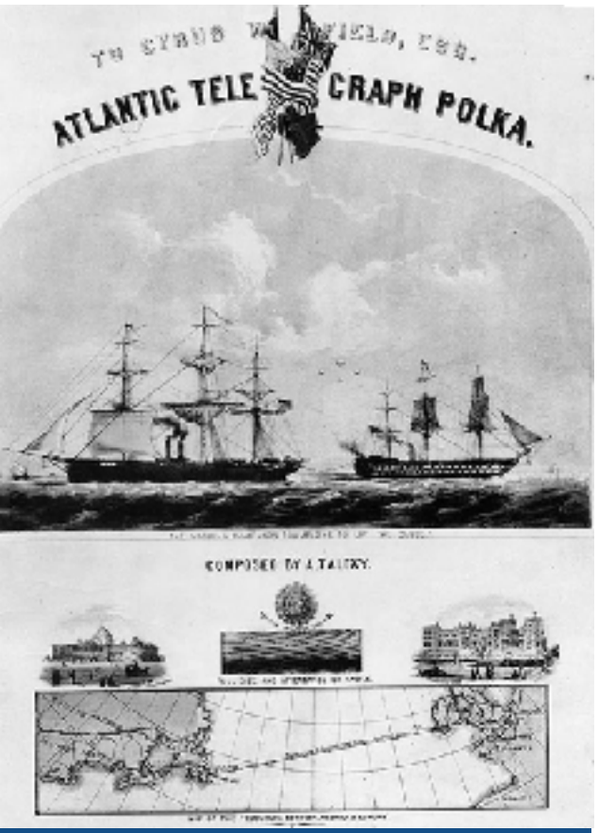
enthusiastic response

going global



international cables
(but also treaties, standards)

Prussia-Austria: 1849

England-France: 1851

New York-Newfoundland: 1856

Britain-North America: 1858-1866

Britain-India: 1870

Atlantic telephone cable (TAT-1): 1956

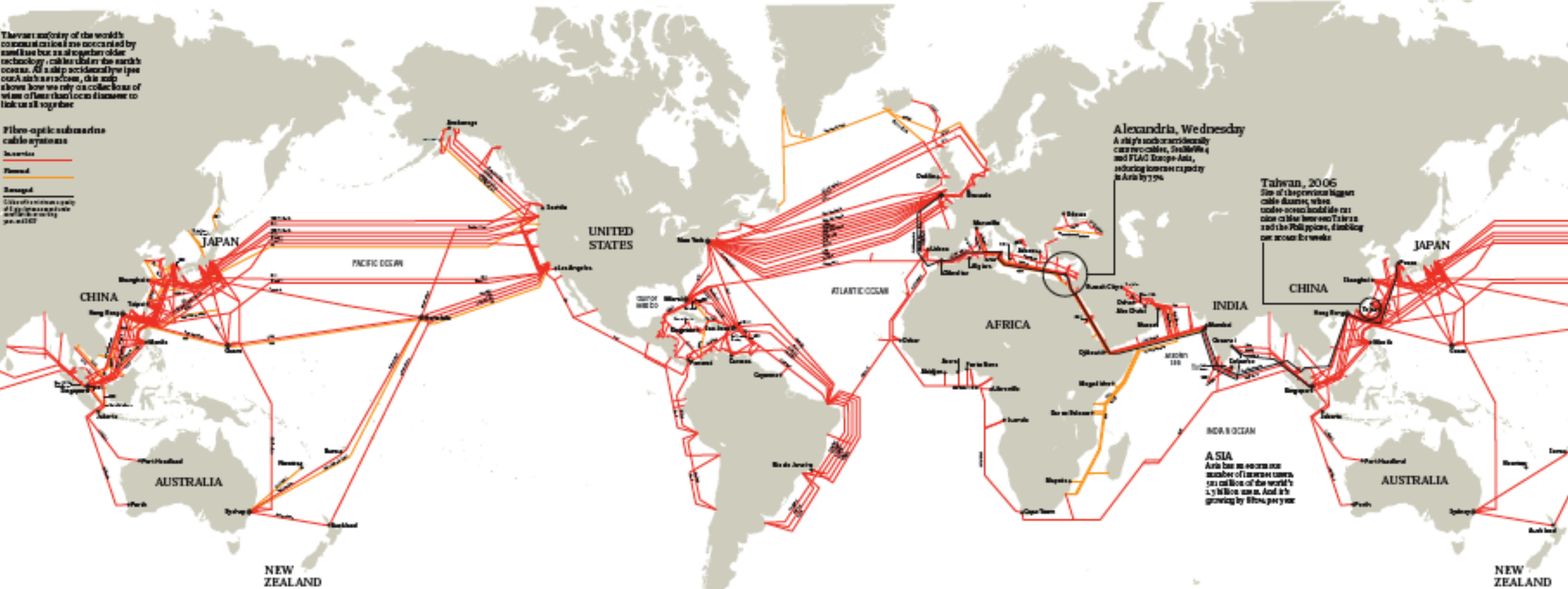
enthusiastic response

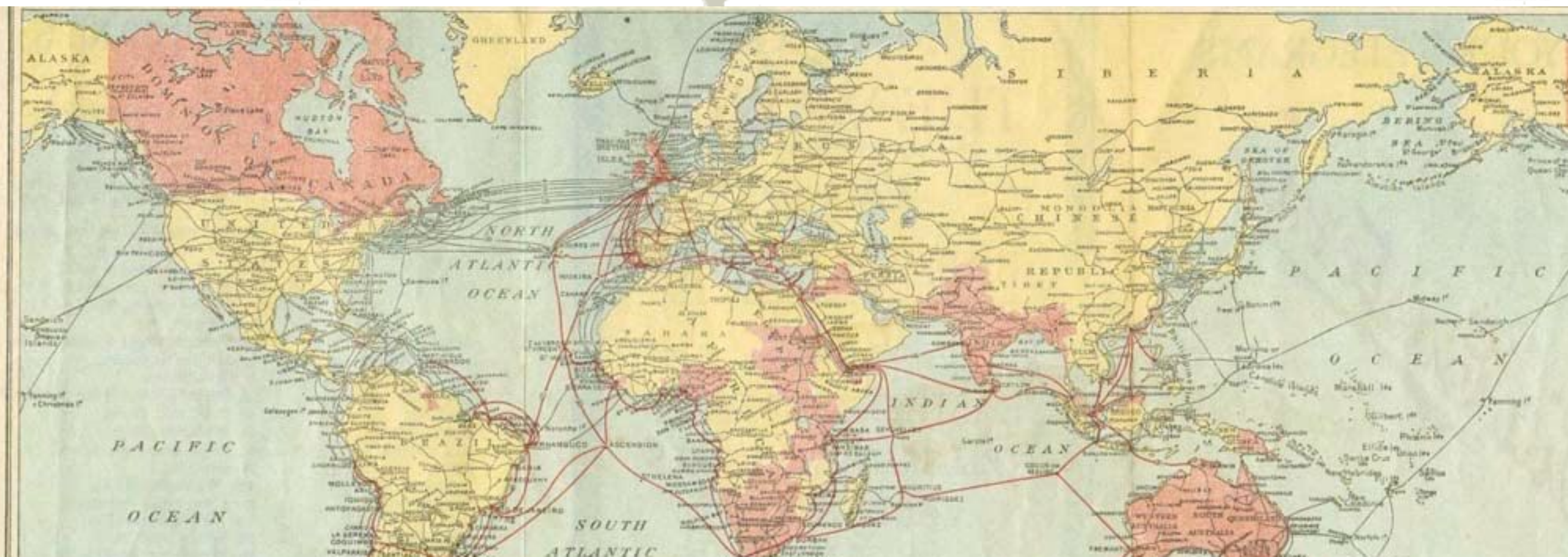
going global

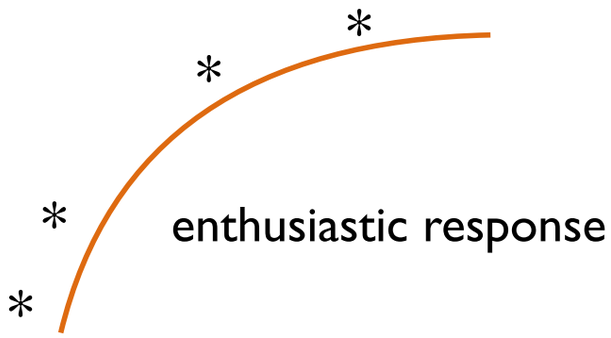
international cables
(but also treaties, standards)

"Via Eastern" THE EASTERN ASSOCIATED TELEGRAPH COMPANIES' CABLE SYSTEM. "Via Ea
(INDICATED IN RED.)

The internet's undersea world







challenging authority

"If information is power, whoever rules the world's telecommuni-cations system commands the world"

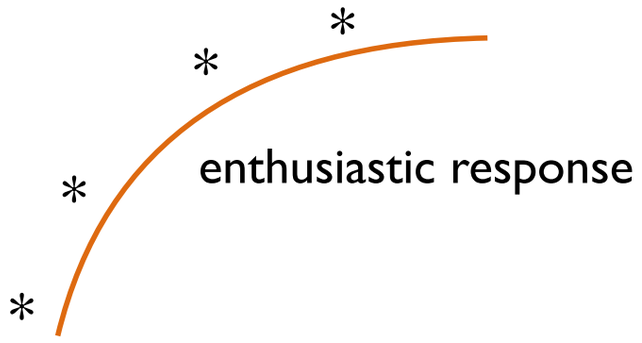
--Peter Hugill

cable cutting and cable tapping

Hacking

Russia hacking: US intelligence chief hits back at Donald Trump's 'disparagement'

James Clapper tells Congress he will release more evidence of Russian interference in US election and describes 'multifaceted' cyber assault



"*Fourth.* .. … record of intelligence is made in a permanent manner;
Fifth. …. communications are secret"

—Morse to Congress

local control?

Rajanish Kakade/Associated Press
A staff member dispatching telegrams at the Central Telegraph Office in Mumbai, Maharashtra, on Friday.

"for business … unrivaled; but as a telegraph for the people it is a signal failure"

—Hubbard

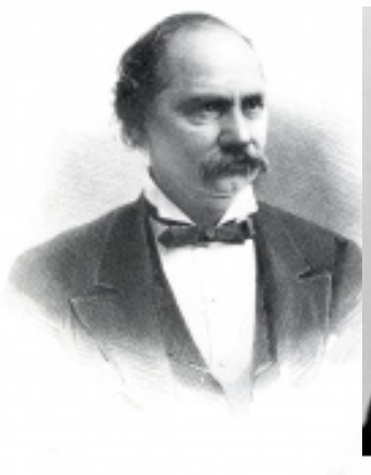
[Mrs Jordan, flower arranger]: "I dare say it's some of your people that *I* do."

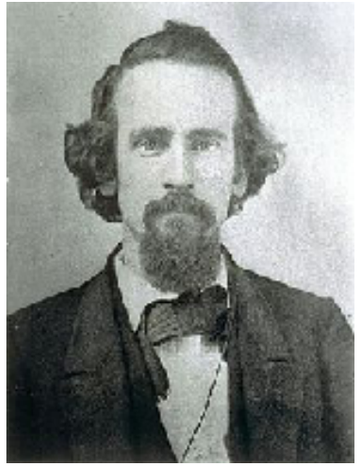
Her companion [the telegraph girl] assented but discriminated. "I doubt if you 'do' them as much as I! Their affairs, their appointments and arrangements, their little games and secrets and vices—those things all pass before me."

… "Their vices? Have they got vices?"

… "Haven't you found *that* out?" Their homes of luxury then hadn't so much to give. "*I* find out everything."

—Henry James, "In the Cage," 1898





making progress

wishing on technology (again)

enthusiastic response

tech and techies

developments

readers respond

Green — 33%

Hubbard — 27%

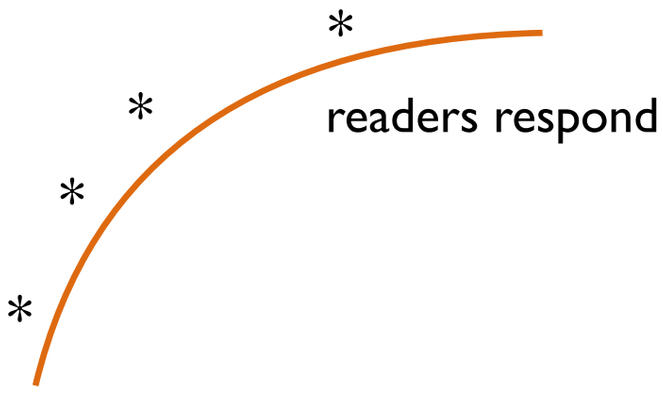
George — 15%

(n)either — 25%

Green — JT Kim

Hubbard — Alexandra Campbell

George — Kevin Ponn



"**If** it can be shown that the telegraph in this country … is … far ahead of .. any other … then there is no public necessity"

— Norvin Green

public or private?

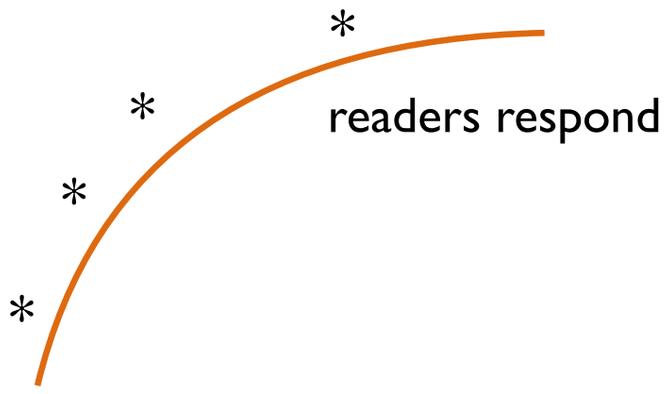
"Let the sole right … belong, in the first place, to the Government"

— Morse to Congress

"Many persons … advocating a government telegraph … grave political reason why the government should not assume and control this important medium of communication" — Norvin Green

"as a telegraph for the people it is a signal failure … only effectual remedy … governmental control" — Gardiner G. Hubbard

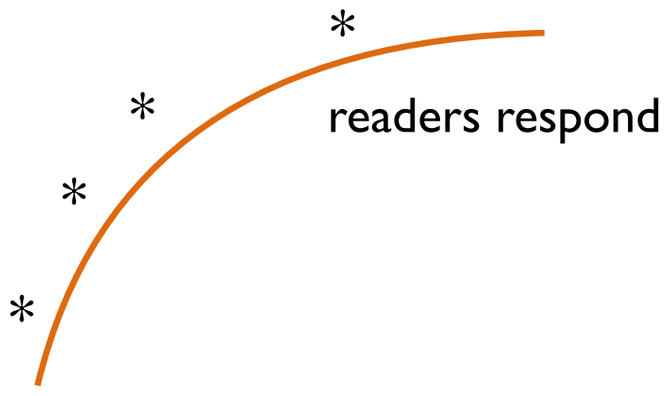
"the Telegraph … is not merely private property … The people's money aided to build the overland line" — Henry George



Green

Although George, Green, and Hubbard all argue against some form of monopoly in telegraphy, while Hubbard sees government-controlled telegraphs as being the solution, George and Green commonly regard self-regulating competition between privately owned businesses as the way forward. While Hubbard points out the shortcomings of the telegraph during his time, such as the lack of significant competition, “high and irregular rates”, and its predominant use in “business interests” (533), his argument for government control does little to address Green’s concerns, like that of a government exploiting the telegram system for “political purposes” (429). As it pertains to the Internet, even the limited censorship of websites in China has been used to keep out information and foreign influence that may incite political dissent against the ruling communist party; there is no guarantee that any government would not use the full control of the Internet (within their jurisdiction) to control “the popular will” (433) to some degree. Furthermore, Green’s argument for competitive-regulation also resonates in that it is difficult to see how the public sector nurture the “great inventions and improvements” (432) that the future of the Internet relies on — at least at the same pace encouraged by competition between corporations.

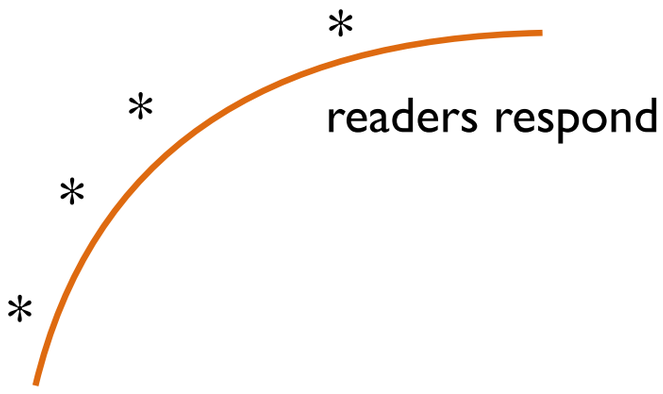
— JT Kim



Hubbard

Hubbard argues American's use the telegraph less than Europe "due to want of uniformity in rates and to high charges." Green lays out European prices and demonstrating how their word count system becomes more expensive and concludes, "there is no reason for public complaint of the cost in this country" (433). Green goes on to argue that having the government control telegraph communication between states is an overreach and overly broad interpretation of their constitutionally granted power to regulate interstate commerce. Further, he does not view the telegraph as interstate commerce that Congress can regulate, but as business where "its business is commerce itself" (426). Hubbard reads into the laws differently, and cites Articles IX and X of the Constitution and the Post Office system as justification for a government regulated system. Further, he says the Congressional hearings that helped increase competition in the industry did not go far enough, as Western Union bought out all of these companies to their advantage. **The most interesting argument is that of power.** This is where Hubbard and George align, in arguing that Western Union has abused their power, particularly in shutting out news outlets like the San Francisco Herald by increasing their prices when they print unfavorable coverage. Green argues that this potential abuse in the hands of the government, particularly during election years and times of contested politics, would be more dangerous and "even administered with the most sacred impartiality...the opposing party would never believe it was so administered" (433). However as seen today in the internet and intelligence era, these accusations are still occurring within the government in our system of the privatized telegraph. Thus, if this issue of power is the main argument against a government controlled system, I would side with Hubbard's arguments.

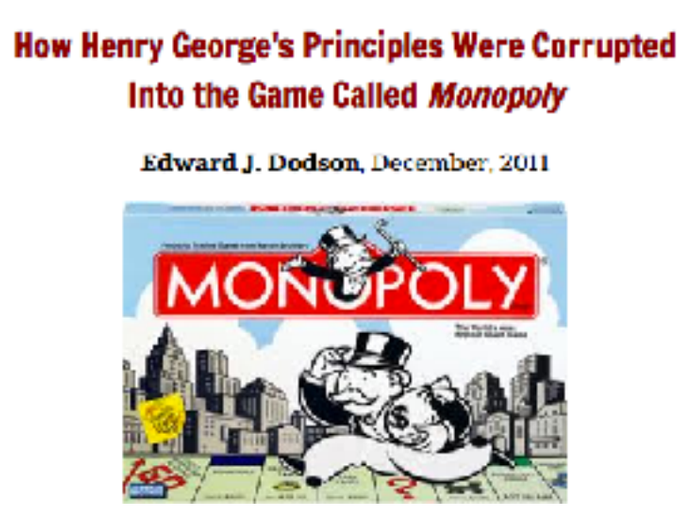
—Alexandra Campbell

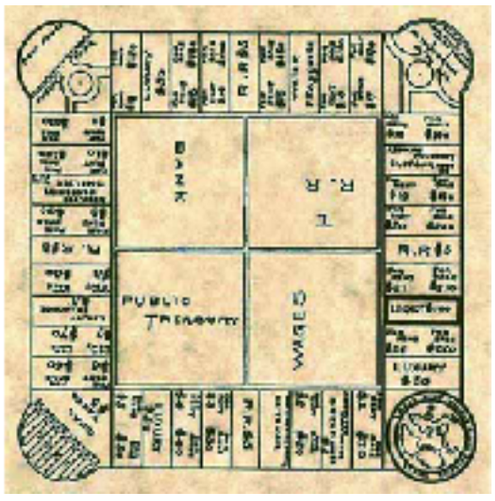


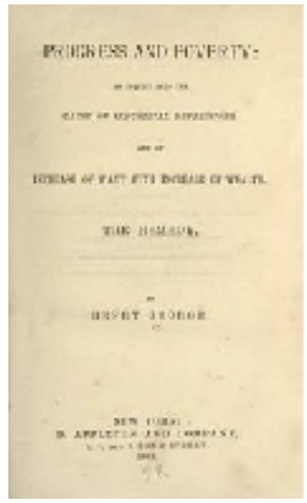
George

The telegraph was a revolutionary new form of communication that sparked a nationwide debate on its role in society and how it should be managed. Norvin Greene argued that if the government were to acquire a telegraph to use much like the postal service, this would represent a large increase in the powers of the American government and should be unconstitutional. He stated that the government owning a or "the" telegraph would gave the party in power too much control of communications in the country and should be avoided. In contrast, Gardiner Hubbard observed that while many telegraph companies in Europe served everyone and the people, companies and lines in the United States were mainly set up for the benefit of big business. As a result, he advocated for the creation of a public, government owned telegraph line that was accessible to the people for general messages like the postal service. Finally, Henry George met this in the middle, arguing that the government should help regulate telegraph companies to encourage fair use and fight monopolies. I think George's argument is the best, because too much control or too little control by the government can always lead to their own problems, which mirror those facing the Internet today. China stifles it's internet by owning all of it, while the near zero control of the United States permits violent websites to exist.

—Kevin Ponn







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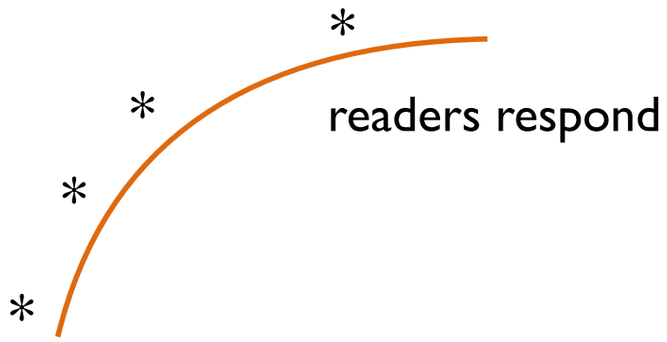


public vs private

March 7, 1927, first transatlantic telephone call

"How's the weather over in London?"

W.S Gifford, President of AT&T

to Sir Evelyn P. Murray, head of General Post Office

Communications "Revolution"

making progress

wishing on technology (again)

enthusiastic response

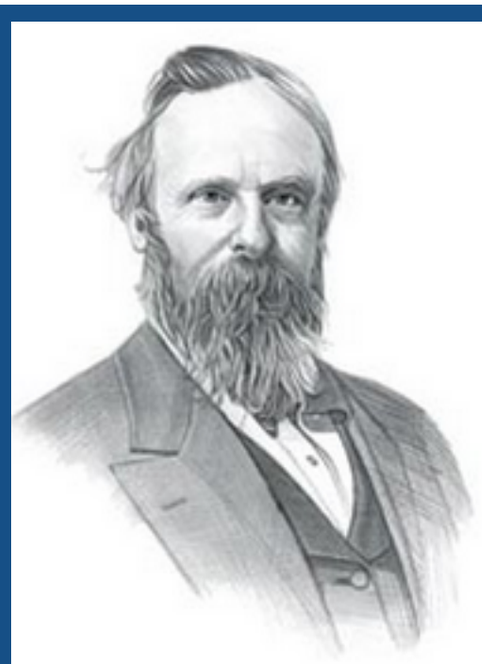
readers respond

tech and techies

developments

wishing on technology (again)

greater democracy



Rutherford B. Hayes

inauguration March 5 1877

Outcome of election resolved by an Electoral Commission, March 2; sworn in March 3

with support of AP, *New York Times*, Western Union

```
"Western Union secretly siphoned to AP's
general agent Henry Nash Smith the telegraph
correspondence of key Democrats during the
struggle."
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THE FIRST MESSAGE.

ENGLAND GREETS AMERICA

QUEEN VICTORIA

TO

PRESIDENT BUCHANAN.

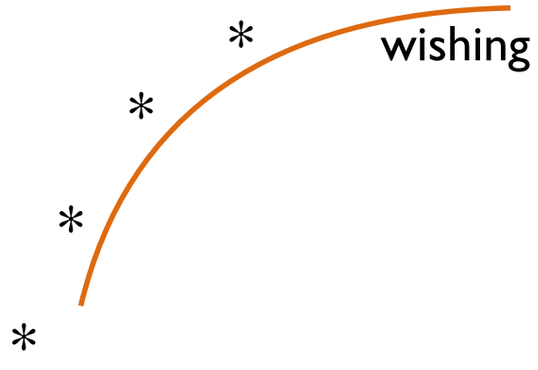
perpetual peace

"May the Atlantic telegraph, under the blessing of heaven, prove to be a bond of perpetual peace and friendship between the kindred nations, and an instrument destined by Divine Providence to diffuse religion, liberty, and law throughout the world."

--President Buchanan, 1858

"Tomorrow the hearts of the civilized world will beat in a single pulse, and from that time forth forevermore the continental divisions of the earth will, in a measure, lose those conditions of time and distance which now mark their relations...The Atlantic has dried up and we become in reality as well as wish, one country."

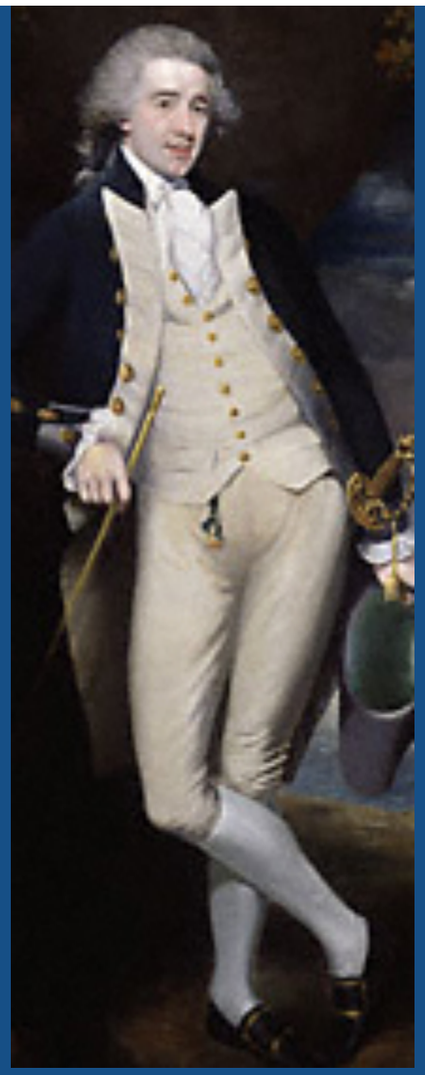
— *Times*



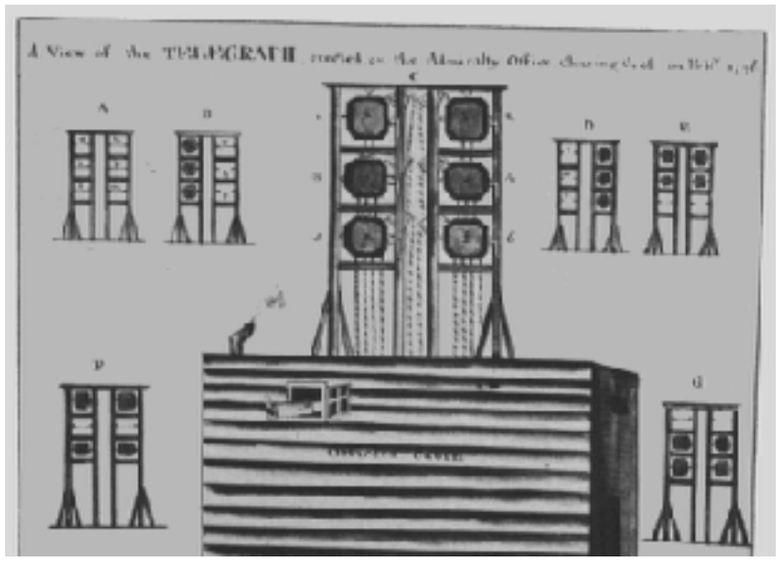
"Voici le rapport du télégraphe qui nous arrive à l'instant. Condé être restituée à la République. Reddition avoir eu lieu ce matin à 6 heures."

—30 August, 1794

lest we forget



military interests



The French Optical Telegraph, "one of the mightiest of agents by which Napoleon transformed himself into a military despot."

"Magnetic Telegraph," *Niles's Register,* 1846

"à Berlin, à Berlin," —Zola

fake telegrams?


LATEST INTELLIGENCE.

(REUTER'S TELEGRAMS.)

DECLARATION OF WAR
BY
FRANCE AGAINST PRUSSIA.

FRANCE.

PARIS, JULY 15.

The French Legislature assembled at 1 o'clock his afternoon, when a communication was simultaneously made by the Government to the Senate and the Corps Legislatif explaining the situation of affairs and terminating by a Declaration of War against Prussia. The Government announced that this declaration is precipitated by the circular of the King to the Prussian agents abroad, which,

Text

Otto von Bismarck
1815-1898

Bismarck & the Ems telegram

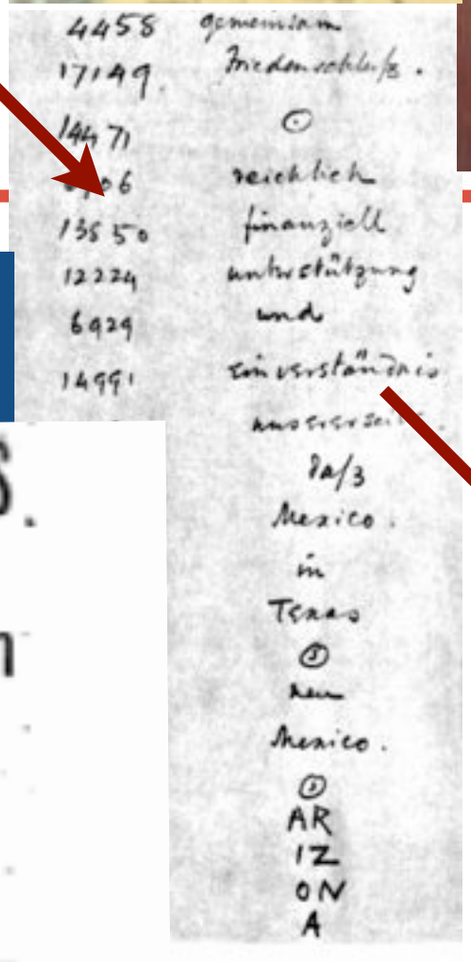
His Majesty [having told Cont Benedetti that he was awaiting news from the Prince,] **has decided** [with reference to the above demand] **not to receive Count Benedetti again, but only to let him be informed through an aide-de-camp that his Majesty** [had now received from the Prince confirmation of the news which Benedetti had already received from Paris and] **had nothing further to say to the ambassador.**

July 1871

SECURITY

After DNC attack, hacker Guccifer 2.0 claims Hillary Clinton 'dossier' leak Guccifer 1.0?

By James Rogers · Published June 21, 2016 · FoxNews.com



Zimmerman telegram

We intend to begin ... unrestricted submarine warfare. We shall endeavor ... to keep the United States neutral. In the event of this not succeeding,
we make Mexico a proposal of alliance on the following basis: make war together, make peace together, generous financial support and an understanding on our part that Mexico is to reconquer the lost territory in Texas, New Mexico, and Arizona.

received, Mexico (and UK), Jan 17, 1917
published March 1
war declared April 6

better market information

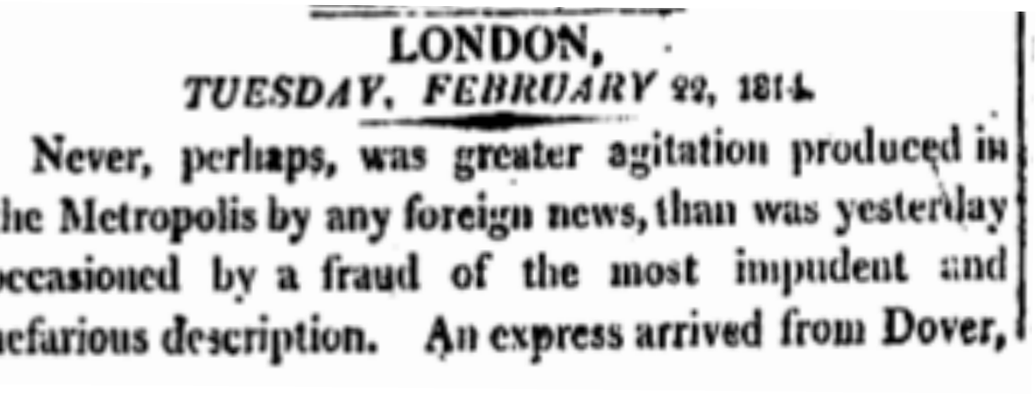
would Henry George agree?

"No ten days will hereafter elapse before the news of each day on the Atlantic is known on the Pacific. … They are *no longer strangers*, for the lightning has annihilated a continent as an obstacle to *intellectual communication*. By the wonderful invention of Morse the incidents of to-day on the Atlantic mid in the upper Mississippi valley will be transmitted the width of a continent and published in our daily papers of to-morrow…The Orient and the Occident are united by the click of the telegraph."

—*Sacramento Daily Union* - October 24 1861

"The telegraph being alike open to all puts the whole community upon a par, and will thus 'head off' the most adroit speculators, because they will not have the power to monopolize intelligence."

—*Public Ledger and Daily Transcript* (Philadelphia), 1846



LONDON,
TUESDAY, FEBRUARY 22, 1814.

Never, perhaps, was greater agitation produced in he Metropolis by any foreign news, than was yesterday occasioned by a fraud of the most impudent and nefarious description. An express arrived from Dover,

a first in fake news?

Thomas Cochrane 1775–1860

Admiral Cochrane

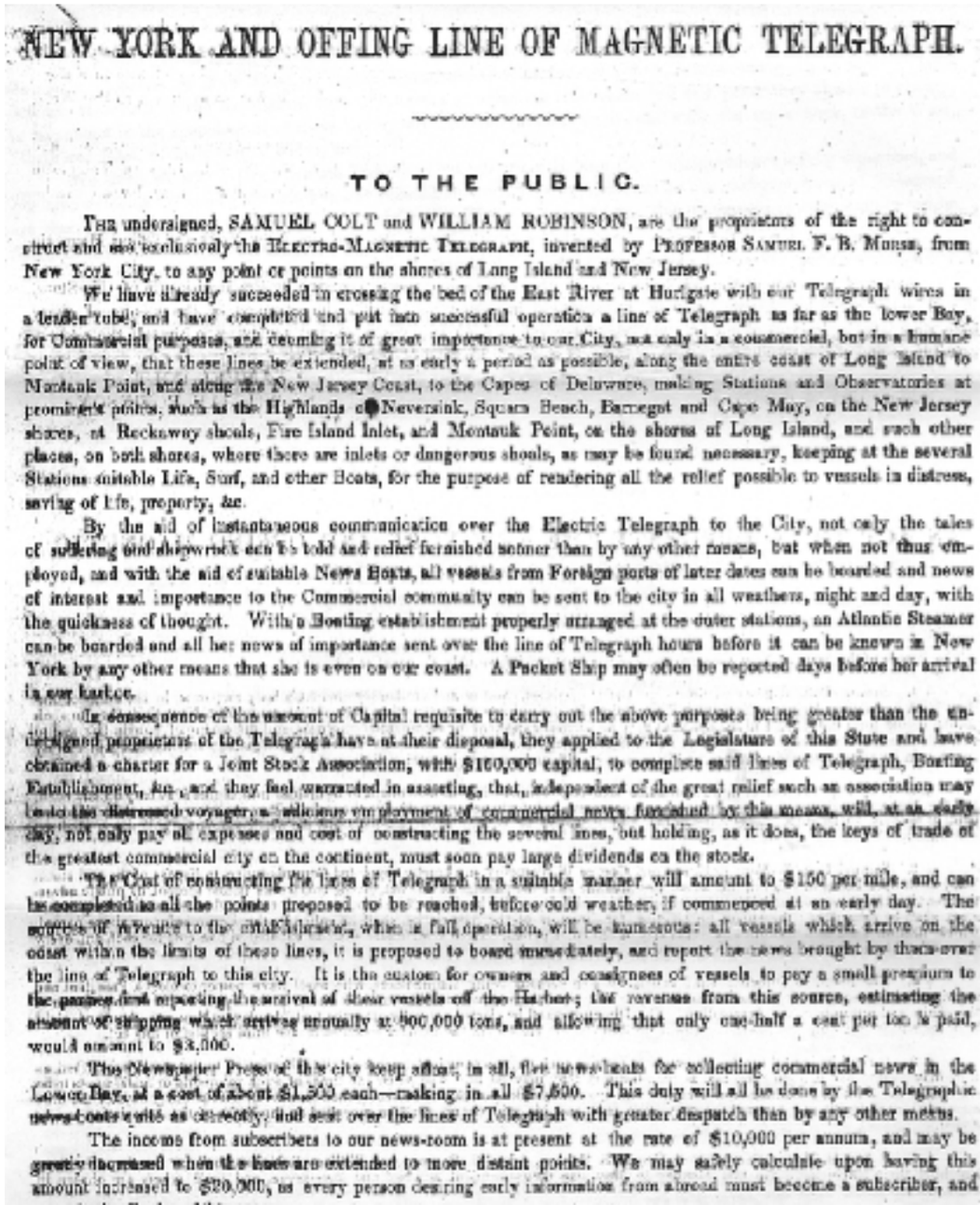
"Napoleon is dead" 1814

Omnium from 26-1/2 to 33

Stendhal

The Telegraph, 1835

Colt & Robinson, 1846



NEW YORK AND OFFING LINE OF MAGNETIC TELEGRAPH.

TO THE PUBLIC.

The undersigned, SAMUEL COLT and WILLIAM ROBINSON, are the proprietors of the right to construct and use exclusively the ELECTRO-MAGNETIC TELEGRAPH, invented by PROFESSOR SAMUEL F. B. MORSE, from New York City, to any point or points on the shores of Long Island and New Jersey.

We have already succeeded in crossing the bed of the East River at Hurlgate with our Telegraph wires in a leaden tube, and have completed and put into successful operation a line of Telegraph as far as the lower Bay, for Commercial purposes, and deeming it of great importance to our City, not only in a commercial, but in a humane point of view, that these lines be extended, at as early a period as possible, along the entire coast of Long Island to Montauk Point, and along the New Jersey Coast, to the Capes of Delaware, making Stations and Observatories at prominent points, such as the Highlands of Neversink, Squam Beach, Barnegat and Cape May, on the New Jersey shores, at Rockaway shoals, Fire Island Inlet, and Montauk Point, on the shores of Long Island, and such other places, on both shores, where there are inlets or dangerous shoals, as may be found necessary, keeping at the several Stations suitable Life, Surf, and other Boats, for the purpose of rendering all the relief possible to vessels in distress, saving of life, property, &c.

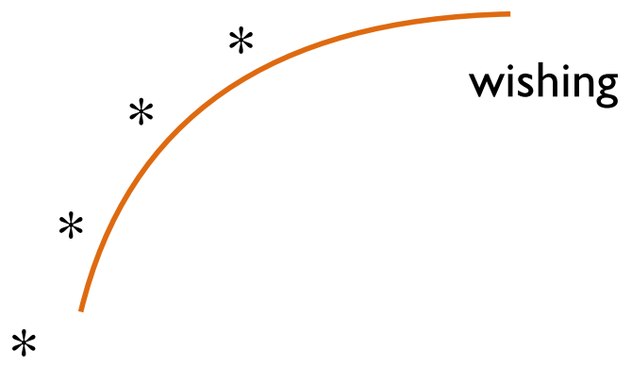
By the aid of instantaneous communication over the Electric Telegraph to the City, not only the tales of suffering and shipwreck can be told and relief furnished sooner than by any other means, but when not thus employed, and with the aid of suitable News Boats, all vessels from Foreign ports of later dates can be boarded and news of interest and importance to the Commercial community can be sent to the city in all weathers, night and day, with the quickness of thought. With a Boating establishment properly arranged at the outer stations, an Atlantic Steamer can be boarded and all her news of importance sent over the line of Telegraph hours before it can be known in New York by any other means that she is even on our coast. A Packet Ship may often be reported days before her arrival in our harbor.

In consequence of the amount of Capital requisite to carry out the above purposes being greater than the undersigned proprietors of the Telegraph have at their disposal, they applied to the Legislature of this State and have obtained a charter for a Joint Stock Association, with $150,000 capital, to complete said lines of Telegraph, Boating Establishment, &c., and they feel warranted in asserting, that, independent of the great relief such an association may lend to distressed voyagers, a judicious employment of commercial news furnished by this means, will, at an early day, not only pay all expenses and cost of constructing the several lines, but holding, as it does, the keys of trade of the greatest commercial city on the continent, must soon pay large dividends on the stock.

The Cost of constructing the lines of Telegraph in a suitable manner will amount to $150 per mile, and can be completed to all the points proposed to be reached, before cold weather, if commenced at an early day. The source of revenue to the stockholders, when in full operation, will be numerous: all vessels which arrive on the coast within the limits of these lines, it is proposed to board immediately, and report the news brought by them over the line of Telegraph to this city. It is the custom for owners and consignees of vessels to pay a small premium to the pilots for reporting the arrival of their vessels off the Harbor; the revenue from this source, estimating the amount of shipping which arrives annually at 900,000 tons, and allowing that only one-half a cent per ton is paid, would amount to $3,500.

The Newspaper Press of this city keep afloat, in all, five news-boats for collecting commercial news in the Lower Bay, at a cost of about $1,500 each—making in all $7,500. This duty will all be done by the Telegraphic news-boats with as correctly, and sent over the lines of Telegraph with greater despatch than by any other means.

The income from subscribers to our news-room is at present at the rate of $10,000 per annum, and may be greatly increased when the lines are extended to more distant points. We may safely calculate upon having this amount increased to $20,000, as every person desiring early information from abroad must become a subscriber, and



proto data centers?

telegraph hill(s)

1801-1807: Boston

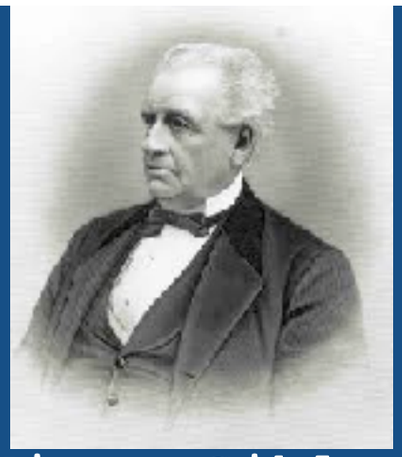
c1812: New York

1833-4: Boston

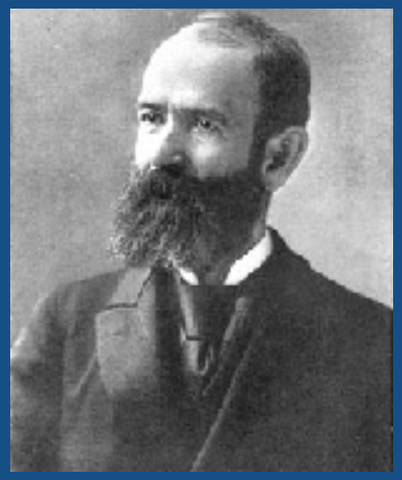
1849: San Francisco

James Gordon Bennett
1795-1872

speculative control in action



Hiram Sibley
1807-1888



Jay Gould
1836-1892

New York Associated Press

James Gordon Bennett
New York Herald

Moses Beach
New York Sun

"…it has raised the rates to newspapers that criticised its action"

—Hubbard

consolidation:

Sibley's Western Union, 1855

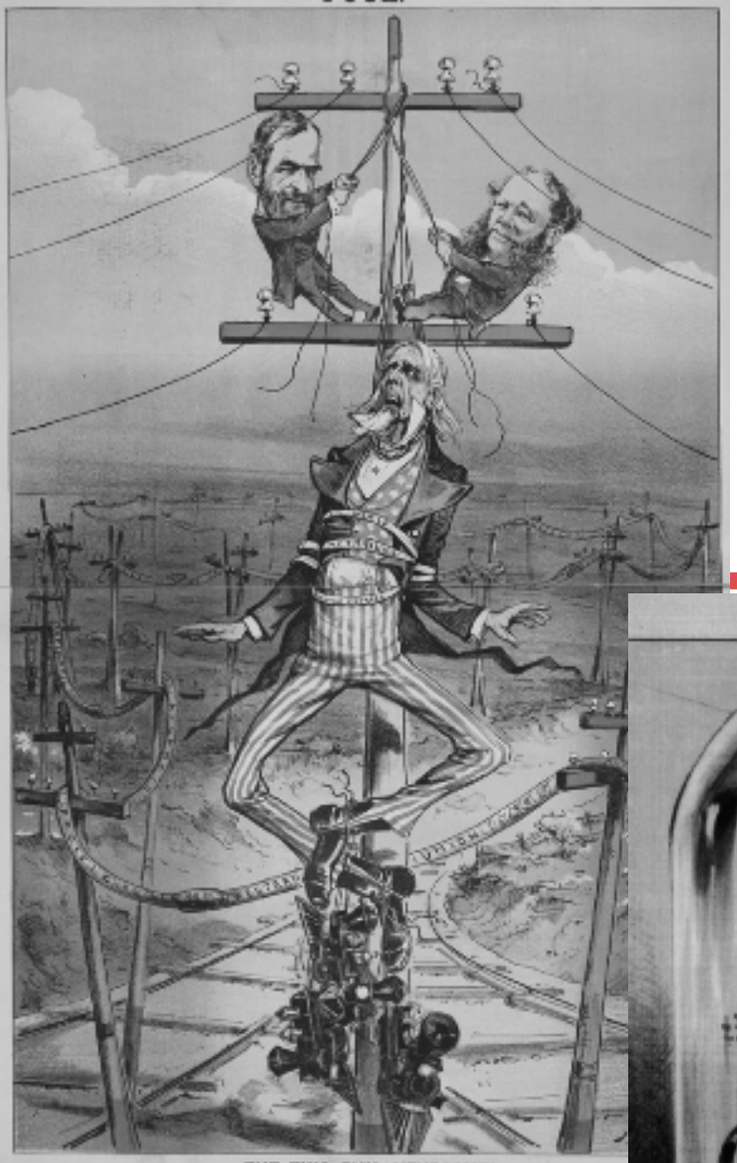
Telegraph Act, 1866

Gould's Western Union, 1881

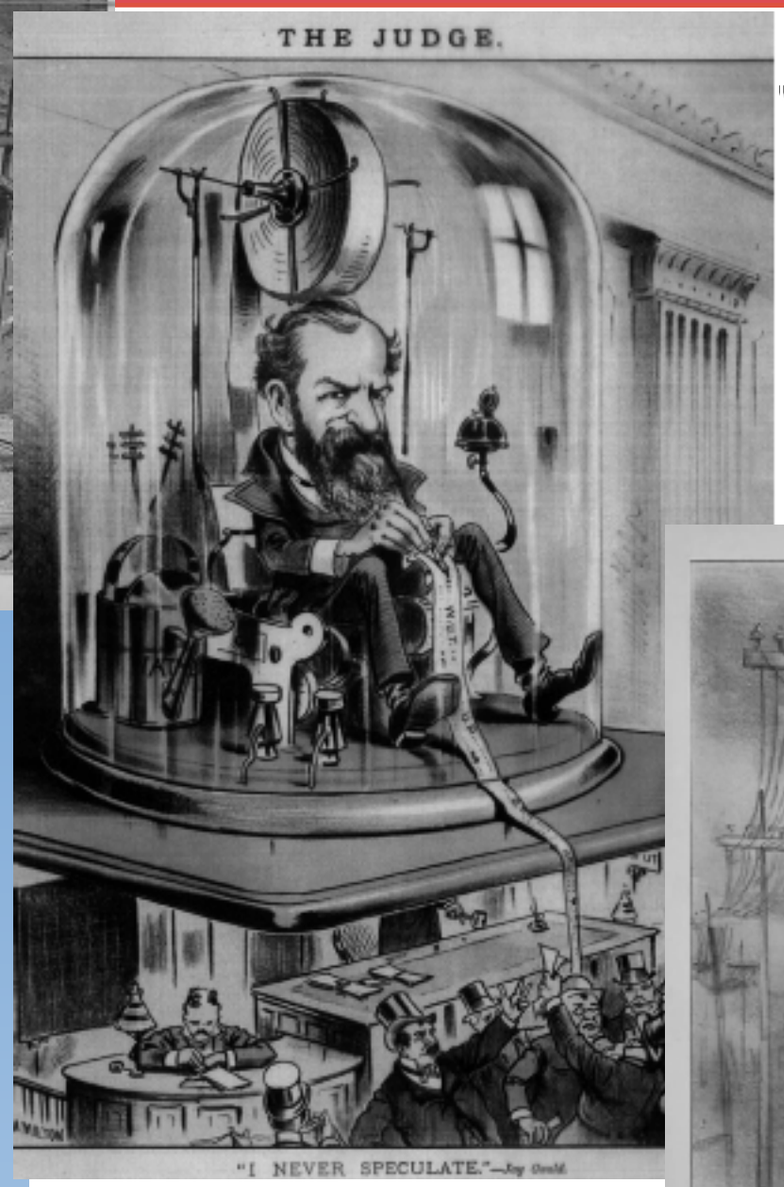
"giving to the four favored papers a virtual monopoly of Eastern Telegraphic news ... the news of the world to California"

—George

contemporary views

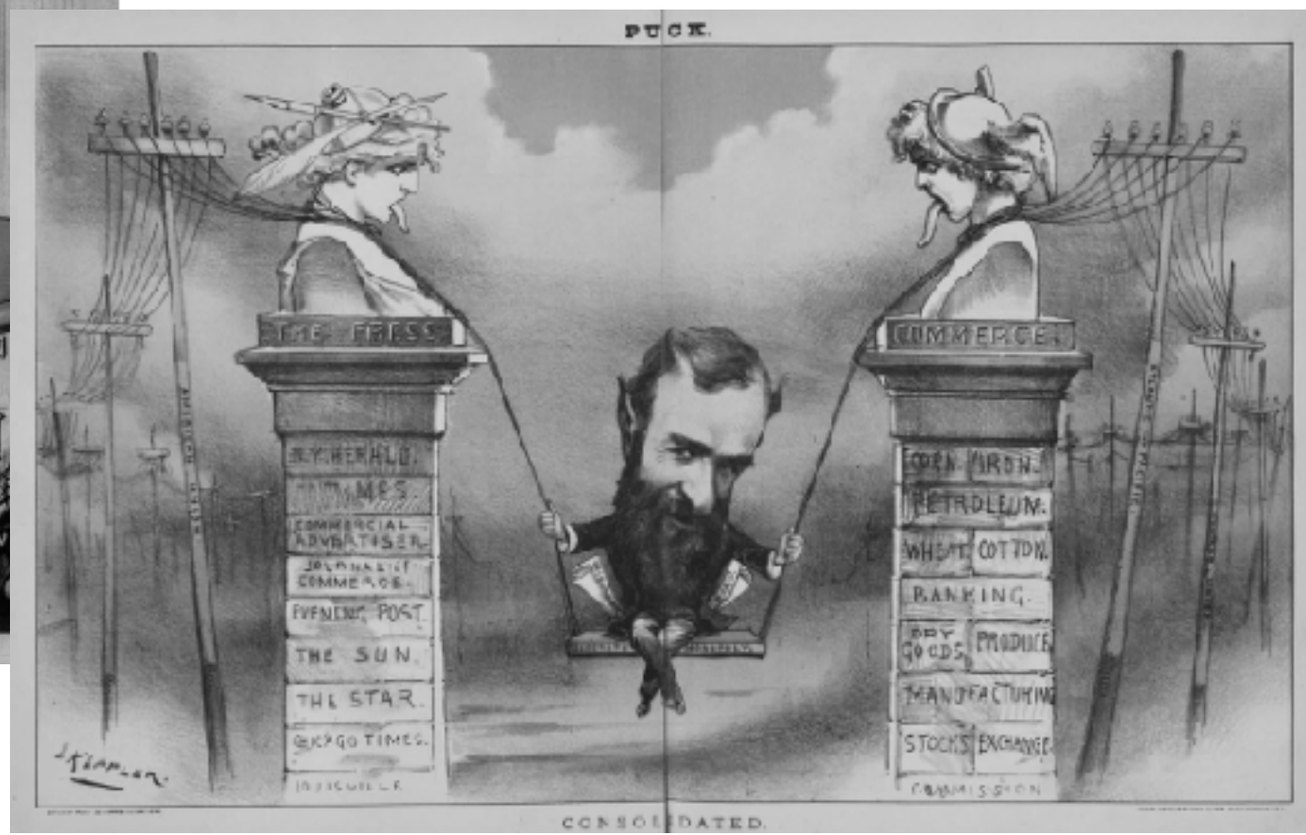


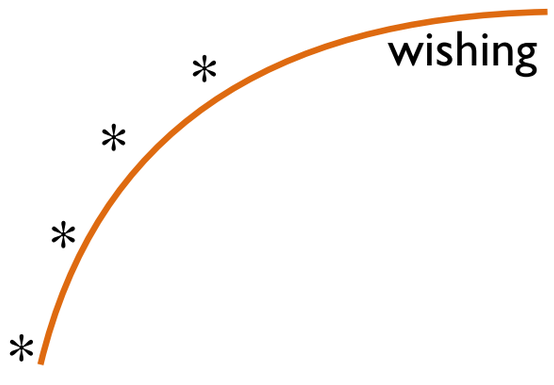
THE TWO PHILANTHROPISTS.



"I NEVER SPECULATE."—Jay Gould.

"Robber Barons Redux: Antimonopoly *Enterprise & Society* (2012) 13(1) 1-38





Western Union "the first industrial monopoly, swallowed up its last two rivals in **1866** … [O]nly in the United States and Canada did the telegraph remain under private control after 1868" -- Du Boff, "The Telegraph...Technology & Monopoly", 1984

natural monopoly?

"The time will come … people will rise in their might and crush these monopolies" —Hubbard, 1873

Ma Bell

1876 Bell Telephone

1885 AT&T

1894 Bell Patents expire

1899 AT&T incorporates Bell

1910 AT&T buys Western Union

1913 Kingsbury (monopoly) Commitment

1915 AT&T San Francisco

1927 transatlantic telephone

1982 break up: the Baby Bells

Ameritech - now AT&T

Bell Atlantic - now Verizon

Bell South - now AT&T

Pacific Telesis - now AT&T

Southwestern Bell - now AT&T

US West - independent

2011 AT&T attempts to buy Verizon, T-Mobile

2014 Comcast bids for Time Warner

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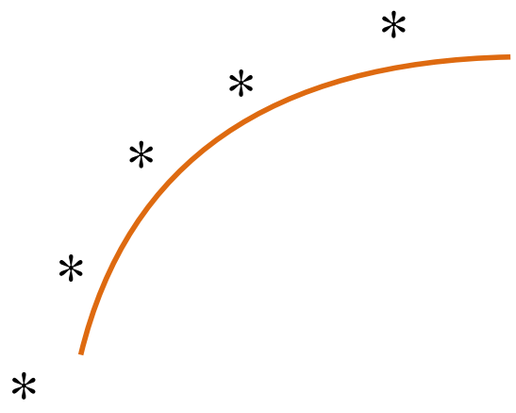
MARKET INTELLIGENCE

Don't Expect the FCC to Review AT&T's Bid for Time Warner

Reuters
Feb 27, 2017



in sum

stories about information technologies and technologists are (like truth) rarely pure and never simple

communications systems may favor "natural" monopolies as much as markets

"neutrality" usually requires government

we never stop wishing on tech

Thursday's readings/viewings

up ahead

16 March: Technologies of the Image

The invention of photography played a central role in nineteenth-century thought, not just for its own sake but as a model for the "objective" view of the world sought after by journalists and scientists and a means of documenting social life.

Required Reading

Newhall, Beaumont. 1964. *The History of Photography, From 1839 to the Present Day*. New York: Museum of Modern Art. *Read:* "Portraits for the Million," and "The Faithful Witness," pp. 47-81 (192-216 in reader). *Source:* Course reader.

Edgar Allan Poe. 1840. "The Daguerreotype." *Alexander's Weekly Messenger* (Philadelphia), 15 January. At Daguerreotype archive. [link].

Baudelaire, Charles. 1859. "The Modern Public and Photography." *Revue Française*, Paris, 10 Juin. In Jonathan Mayr; (ed.), Art in Paris: 1845--62, London: Phaidon, 1964, pp. 151-5. [link]

Lewis W. Hine. 1909. "Social Photography; How the Camera May Help in the Social Uplift," Proceedings of the National Conference of Charities and Correction at the Thirty-sixth Annual Session held in the City of Buffalo, New York, June 9-16, ed. Alexander Johnson (Fort Wayne, IN: Press of Fort Wayne, 1909): 355-59. [link]

See selection of Hines' photographs here