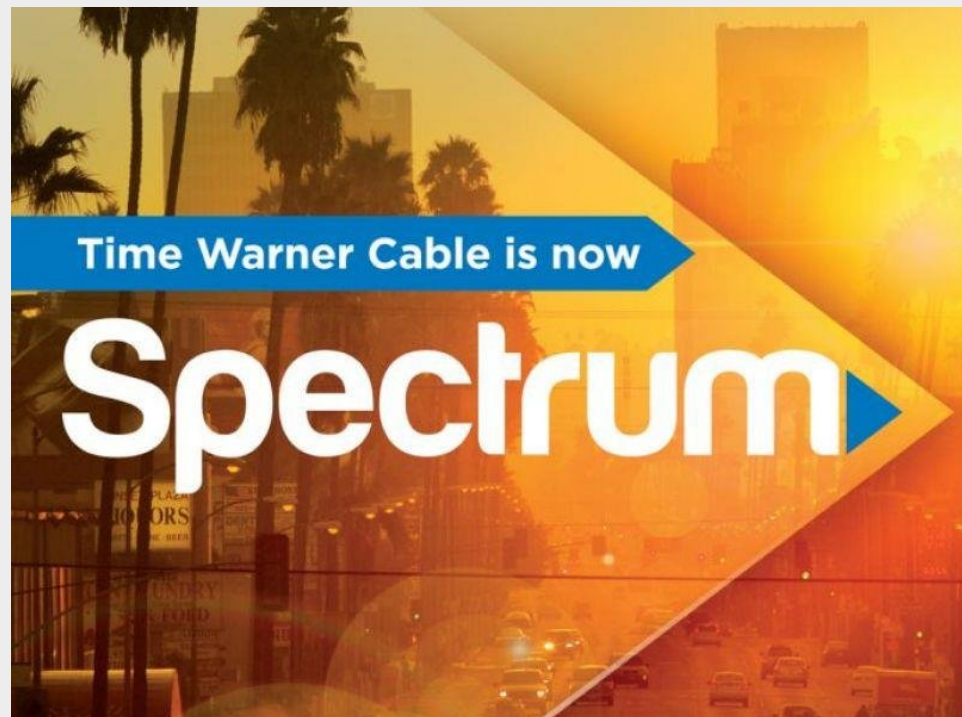


Example: Spectrum and NYS

- **2016** Charter and Time Warner Cable merger approved **if** company improves rural connectivity.
- Spectrum (formerly TWC) failed to meet these goals, used unsafe practices in the field, and .
- **July 2018:** New York Public Service Commission revoked merger approval kicking Spectrum out of the state
- <60 days to find a new provider for their customers



Very Brief History of Internet Service Providers (ISPs)



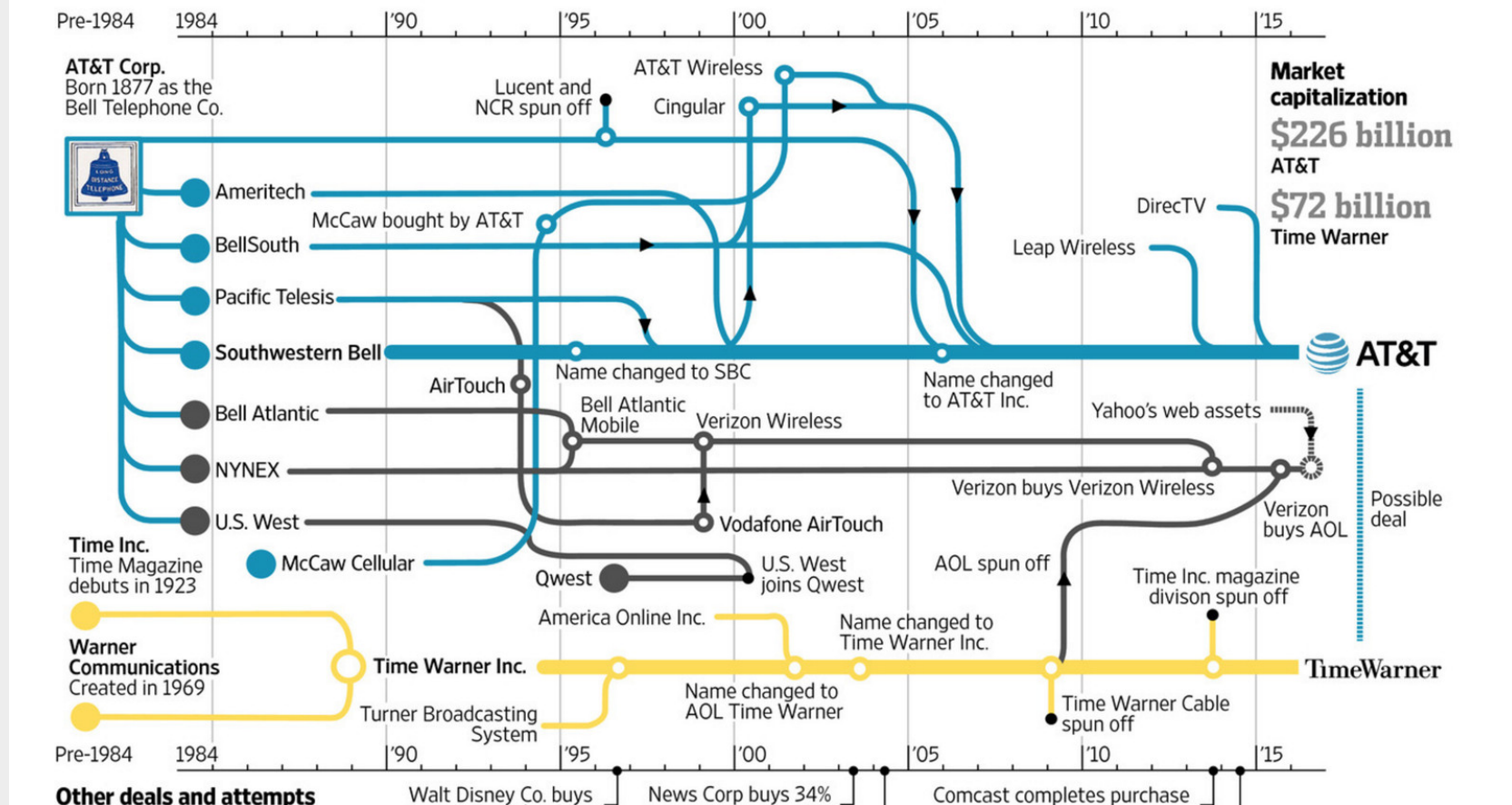
First US commercial ISP
November 1989
Brookline, MA

Telephone Service Providers

- **1876:** Alexander Graham Bell patented the telephone.
- **1877-1894:** Bell Telephone Company has a near absolute Monopoly. Only served urban centers in NE. Becomes AT&T.
- **1894:** Patent expires
- **1894-1907:** AT&T uses deep pockets & bigger network to crush new competitors
- **1907-1913:** AT&T expands network further by buying competitors
- **1913:** Anti-trust gov action forces AT&T to allow access to their network from competitors. AT&T President Vail: idea of telephone service a “natural monopoly” (like electric) picks up steam.
- **1934:** Communications Act established Federal Communications Commission (FCC), and required “universal service”
- **1984:** After a decade of antitrust action, AT&T forced to release “baby bells”

(TSP 1984-now)

telecommunication and media industries.

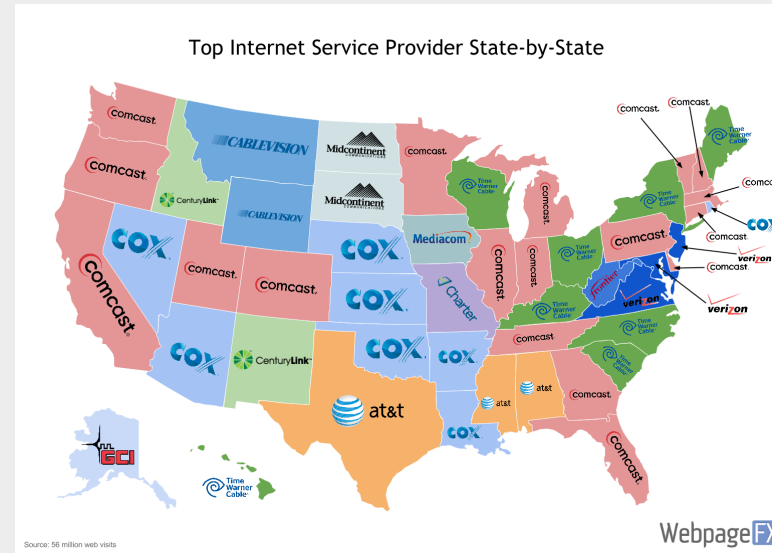


Commercial ISP history

- Prior to **1989**, National Science Foundation (NSF) bans commercial ISPs
- **1989-1991**: The World starts an ISP
`_ (ツ) _/`
- **1990s**: After The World's success NSF lifts ban, resulting in: CompuServe, The Source, America Online. All using TSPs.
- **2001**: DSL standard approved, increasing speed on coaxial/copper connections. Only in urban centers
- **2002**: FCC reclassified Internet access as an “information service”(unregulated)
- **2005-now**: Verizon expanding faster fiber optics, removing copper lines (despite backlash), leader by way of patents

US ISPs today

- In 10 least trusted industries
- High costs relative to abroad
- Low speeds relative to abroad
- Poor service in rural areas
- Defined by local monopolies
- Shifting focus to wireless (5G)
- Some call for “Public Utility”



Privacy

- Data on network believed to belong to the user
- **2015:** ISPs ruled as “common carriers,” which means that ISPs must treat traffic neutrally.
- **April 2017** Congress (along party lines) & Trump allow ISPs/MSPs to collect and sell user data. Data belongs to providers
- **June 2018:** End of net neutrality

Move to “**surveillance capitalism**” model of ISPs similar to Google & Facebook

