

Death of the Internet: GIF at 11

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What Internet?

- Not talking about local connectivity
- Talking about the Internet as a “thing” made up of interconnected networks that, together, provides a connectivity service for Internet protocol packets

What is “Death”?

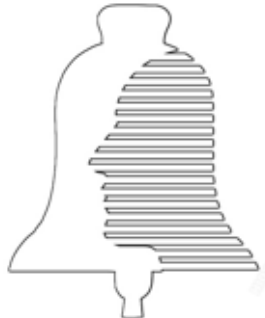
- Predicted significant outage
- Predicted uselessness
- Predicted wholesale replacement

Many “Deaths”

- The ‘Net started “dead” and “died” many times over the years
- Someone was generally ready to transform it, but not always to resurrect it
- I’ll review a few predicted deaths & would-be net killers
- Spoiler: none of the deaths took
- The ‘Net has had "*a lively death indeed*"

Elliott Norse (writing about fallen trees in *Ancient Forests of the Pacific Northwest* – 1990)

Categories



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WSJ

Early 1960s: Dead before it was born

- Paul Baran – developed concept of multi use packet switched network (data & voice)
Cheap & reliable
- Presented packet switched networking to AT&T
“Son, this is how a telephone works”

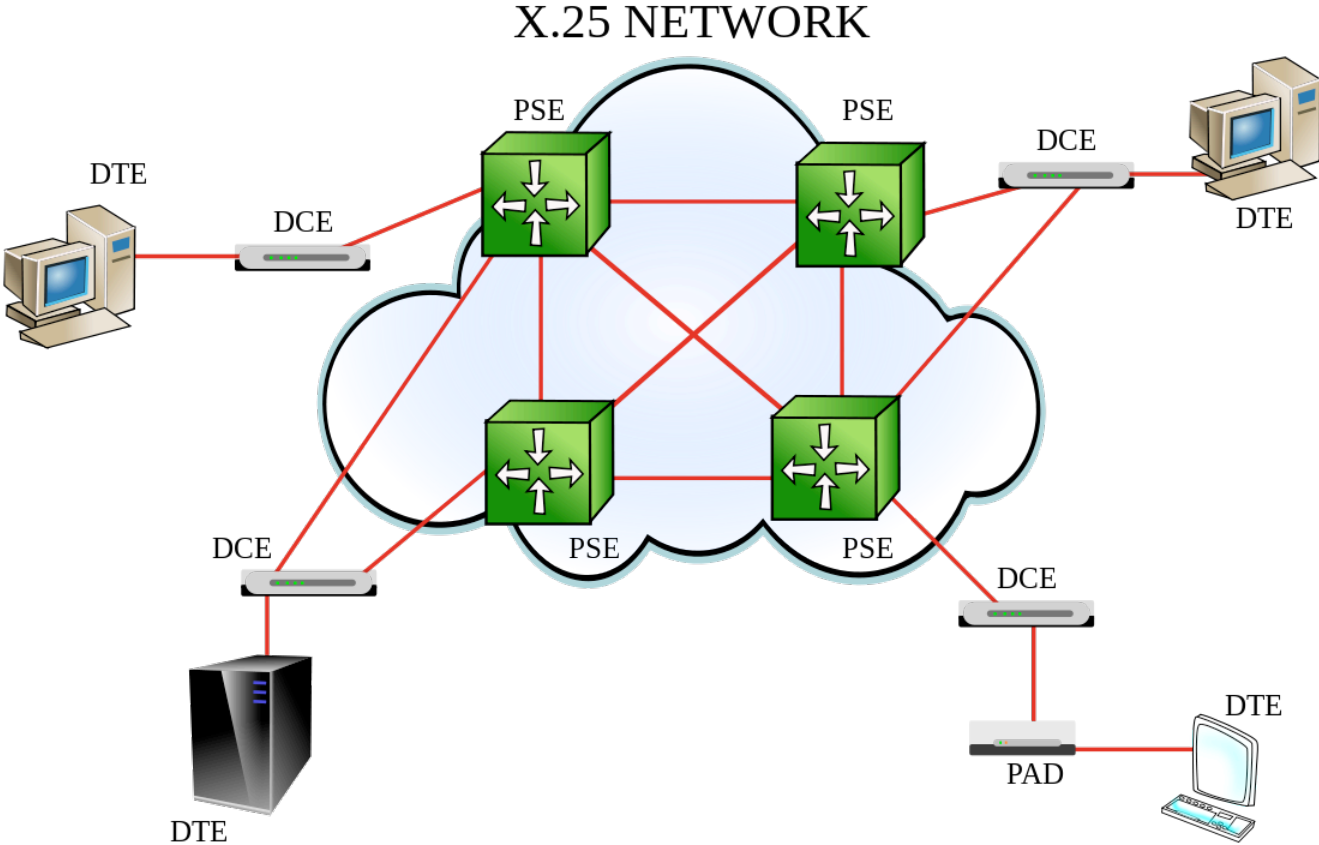
Oral history interview with Paul Baran – 1990 - Charles Babbage Institute



- But, ARPA persisted (yes, Donald Davies, Larry Roberts & many others were also key)



1976: X.25



Mid 1980s-mid 1990s: OSI/GOSIP/IPv7

7	FTAM ISO 8571	CMISE ISO 9596 ISO 9595		Application
	ACSE X.227, ISO 8650 X.217, ISO 8649	ACSE X.227, ISO 8650 X.217, ISO 8649	ROSE ISO 9072 X.219, X.229	
6	X.226, ISO 8823 X.209, ISO 8825 BER X.216, ISO 8822			Presentation
5	X.225, ISO 8327 X.215, ISO 8326			Session
4	X.224, ISO 8073 / AD 2 (X.214, ISO 8072 / AD 2) class 4			Transport
3	ISO 9542 (ES-IS) ISO 10589 (IS-IS Level 1) / ISO 10747 (IS-IS Level 2)			Network
	ISO 8473-3 (CLNS) ISO 8208 X.25 Packet Level	ISO 8473-2 (CLNS)	ISO 8473-4 (CLNS)	
2	ISO 7776 LapB X.25 Data Link Layer	ISO 802.2 LLC ISO 802.3 MAC	Q.921 LapD	Data Link
1	X.21 / X.21bis V.35 / G.703 2M TS n	ISO 802.2 Ethernet	SDH-DCC 2M TS n	Physical

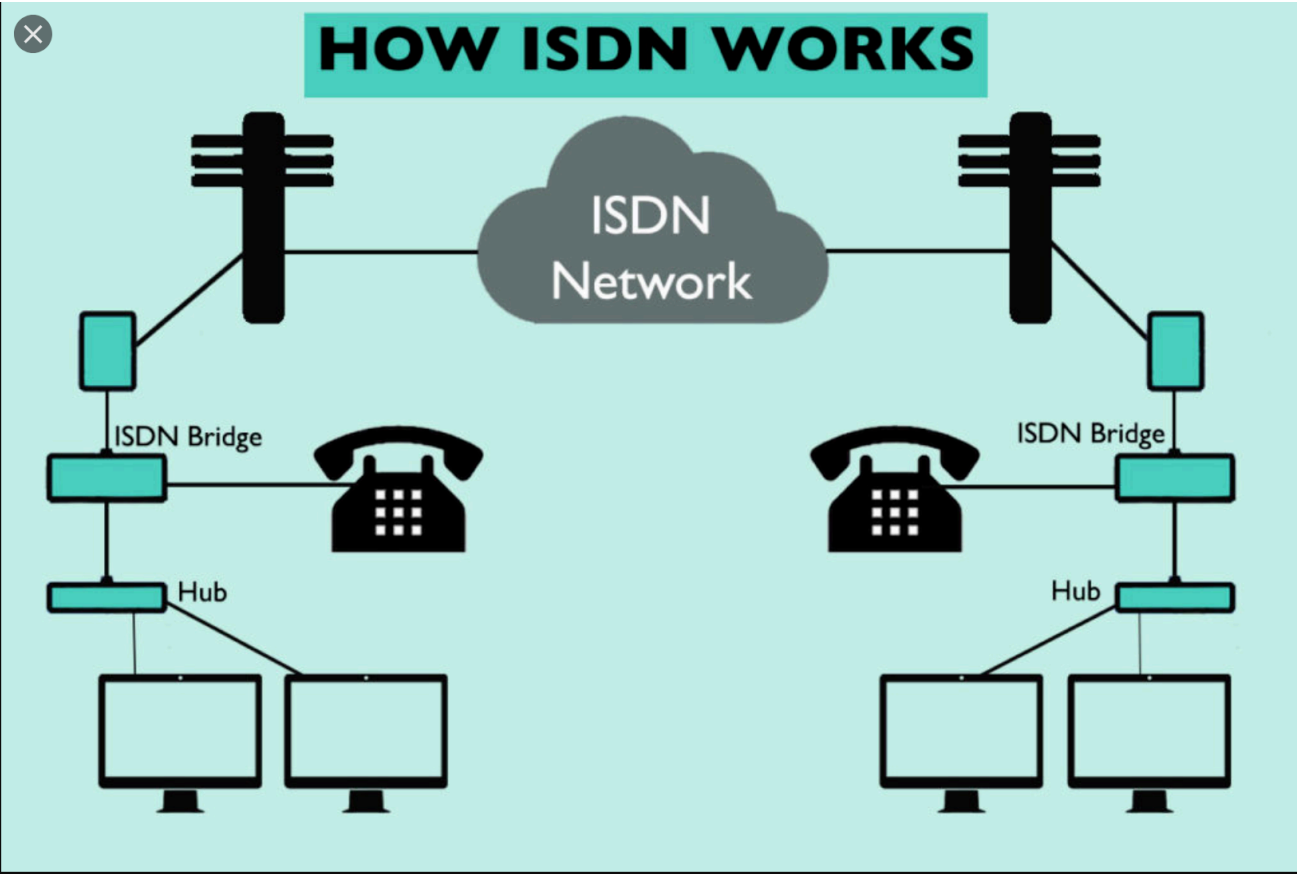
GOSIP

**Government Open
Standards
Interconnect Profile**



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1988: ISDN



1990 - Running out of IP Addresses (1st time)

Depletion Dates

- Assigned Class "B" network numbers Mar. 11, 1994
- NIC "connected" Class B network numbers Apr. 26, 1996
- NSFnet address space* Oct. 19, 1997
- Assigned Class "A-B" network numbers Feb. 17, 1998
- NIC "connected" Class A-B network numbers Mar. 27, 2000
- BBN snapshots* May 4, 2002

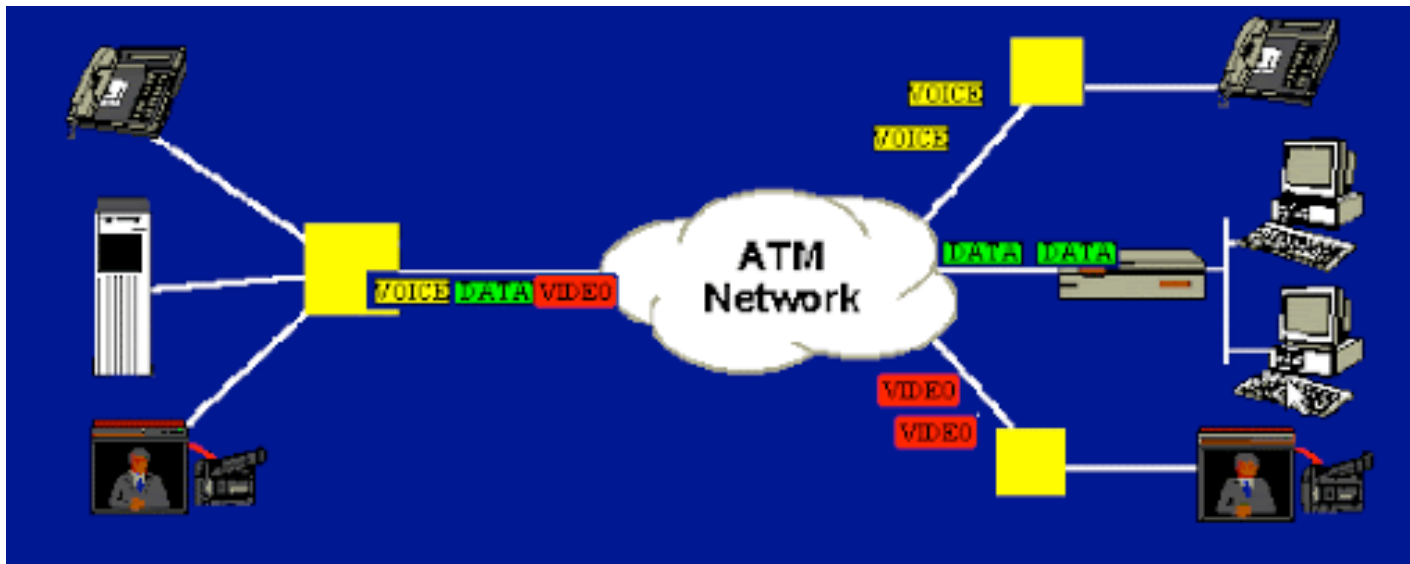
* all types: may be earlier if network class address consumption is not equal.

Novell® IPX

IBM

SNA

1992: Asynchronous Transfer Mode (ATM)



Asynchronous Transfer Mode



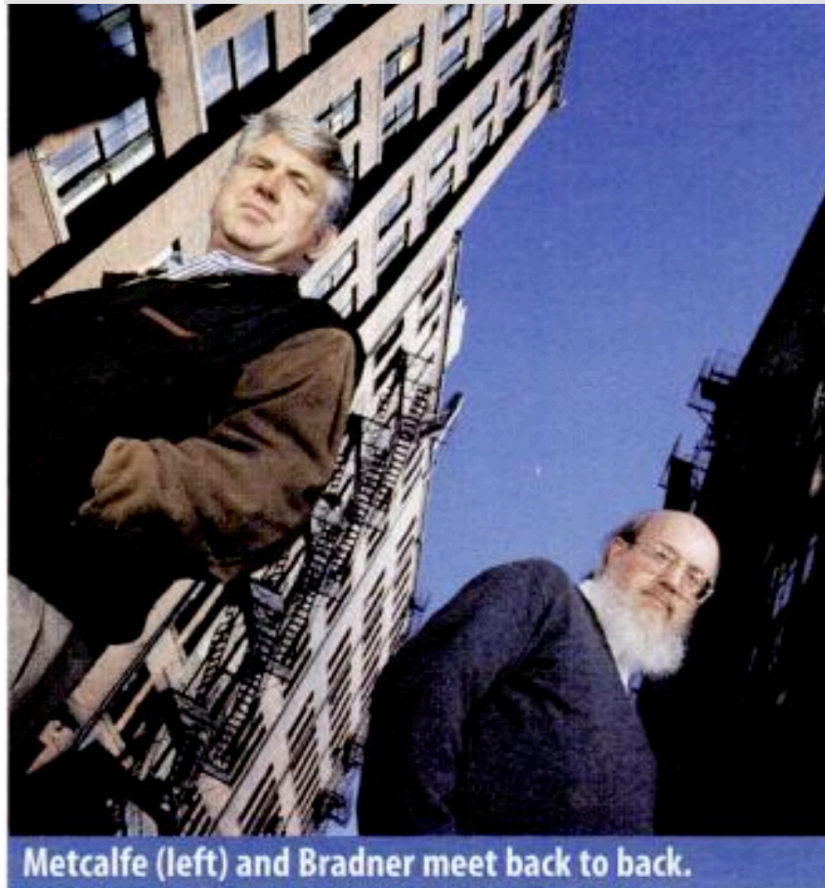
1995: Porn



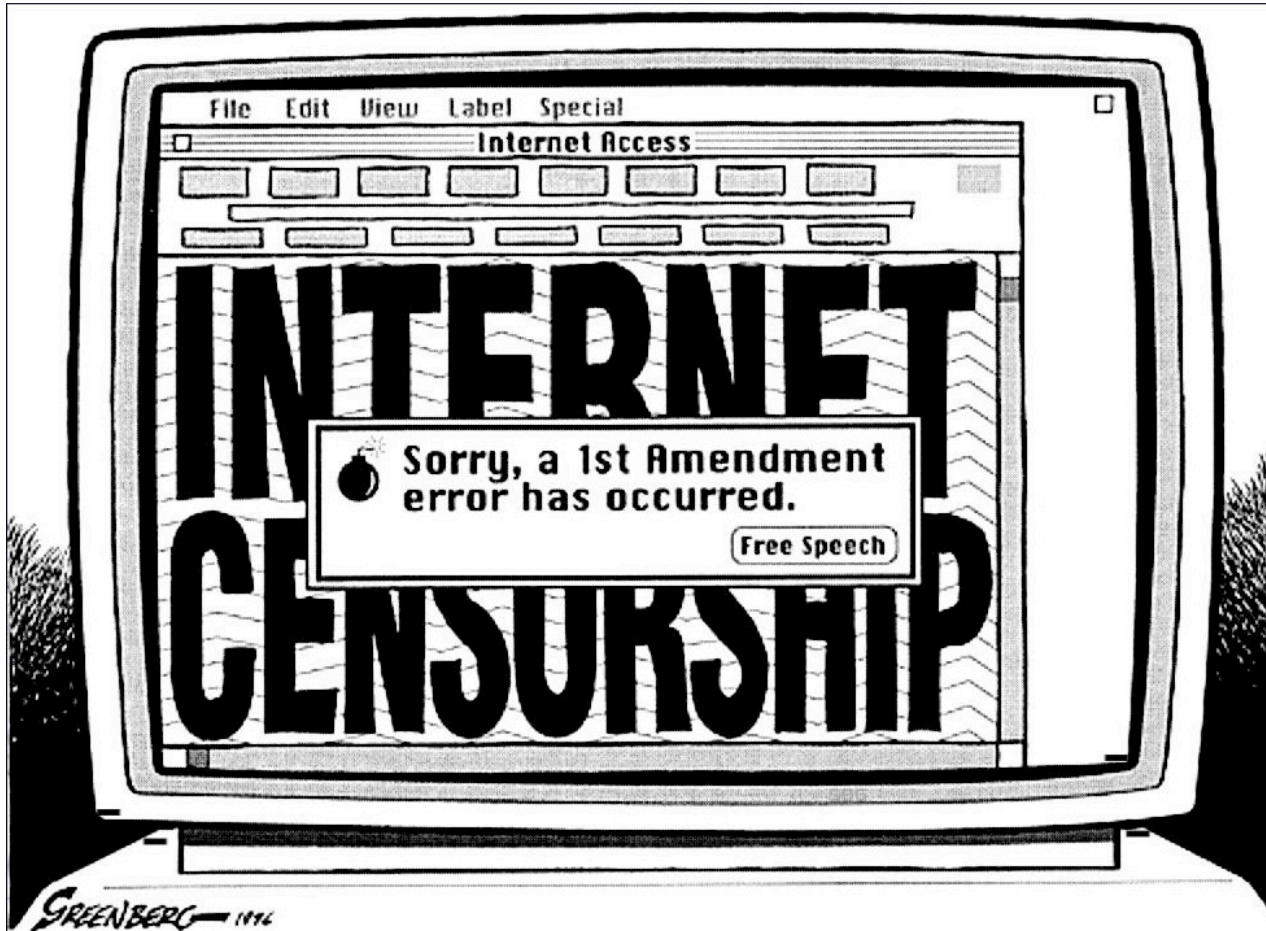
July 3, 1995



1996: Gigalapse



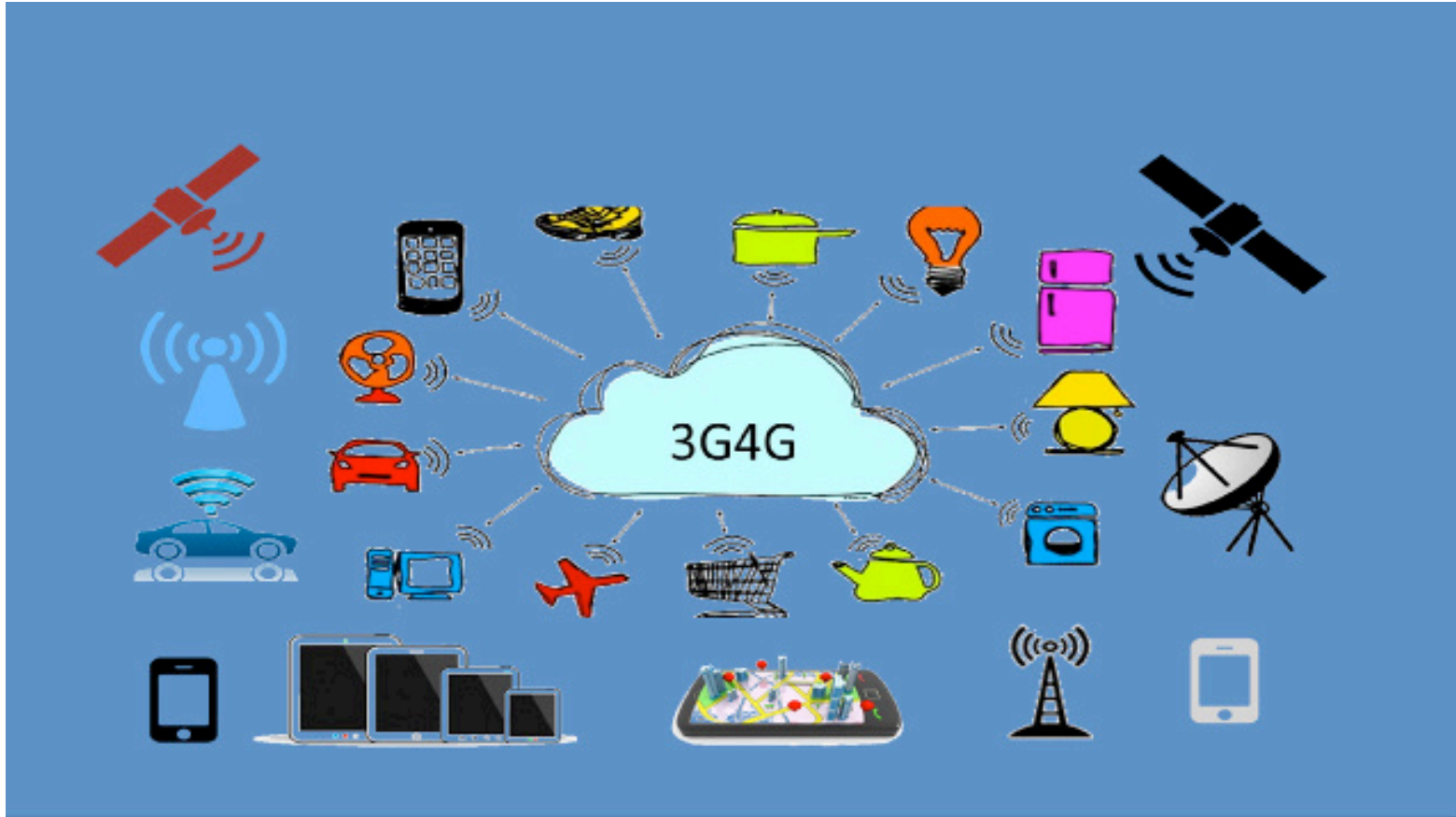
1996: Communications Decency Act



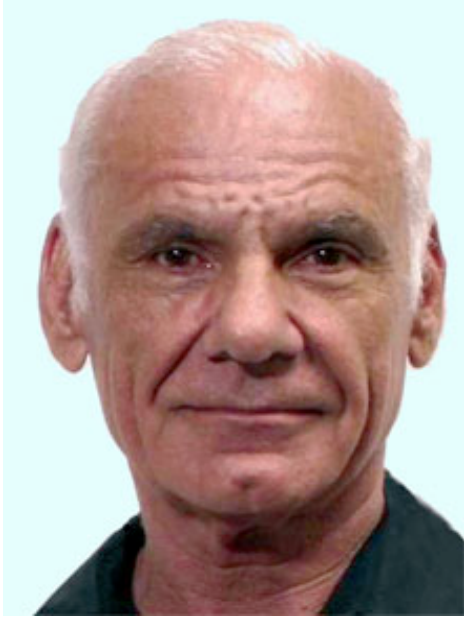
Just as the strength of the Internet is chaos, so the strength of our liberty depends upon the chaos and cacophony of the unfettered speech the First Amendment protects. Judge Dalzell

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2001 – 2012: 3G/4G



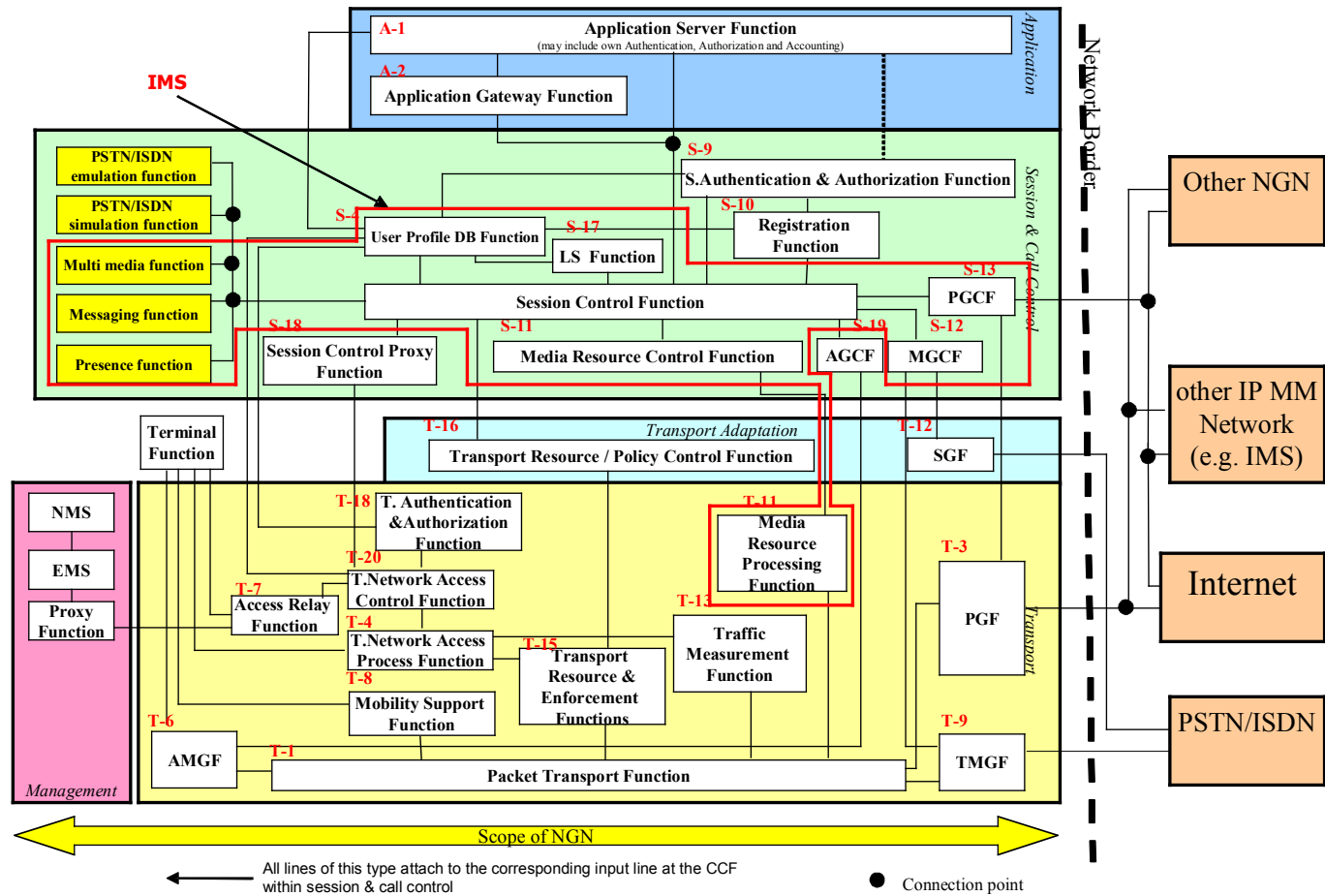
2003: Flow-based networking



“The Internet is broken. I should know: I designed it.”



2004: ITU-T Next Generation Network (NGN)



2015-2017: Title II / ! Title II

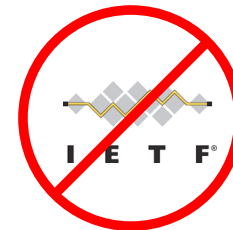
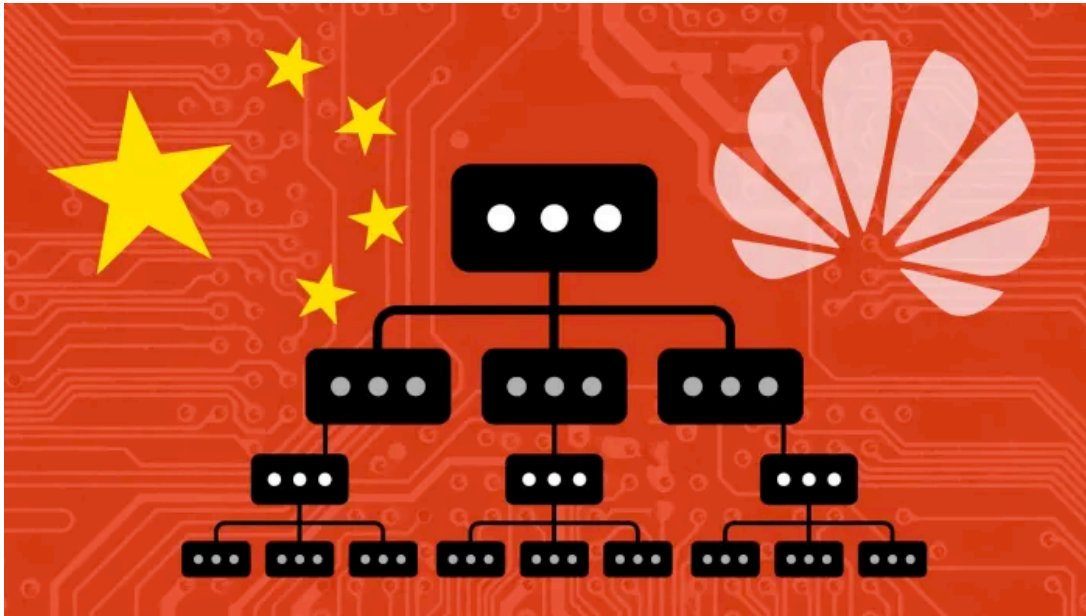


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2019: 5G



2020: New IP



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2020: COVID-19

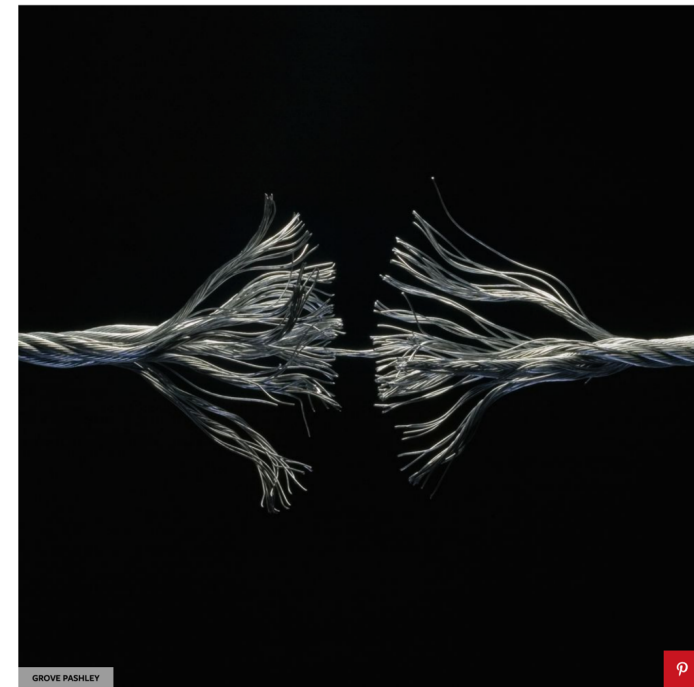
COVID-19 Safer at Home

- Leave home only for essential work or necessities
- Practice good hygiene: cover coughs and sneezes, don't touch your face, and wash hands often
- Work remotely whenever possible
- Physical distancing of at least 6 feet
- Use cloth face coverings when in public
- Disinfect frequently used items and touched surfaces often

Will Coronavirus Crash the Internet?

With most of the world now working from home, an increased need for speed could break the

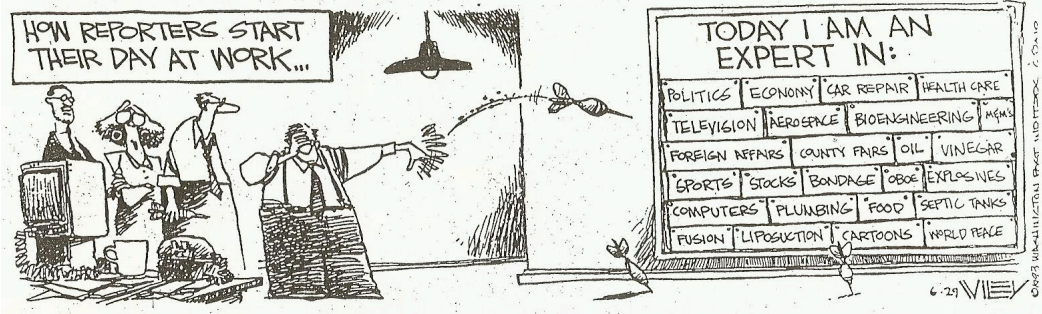
 // BY CAROLINE DELBERT MAR 23, 2020



GROVE PASHLEY



Root cause



Mother of revolution

“The invention of the printing press is the greatest event in history. It is the mother of revolution.”

“In its printed form, thought is more imperishable than ever; it is volatile, irresistible, indestructible. It is mingled with the air. ... Now it converts itself into a flock of birds, scatters itself to the four winds, and occupies all points of air and space at once.”

“A book is so soon made, costs so little, and can go so far! How can it surprise us that all human thought flows in this channel?”

Victor Hugo: *Hunchback of Notre Dame*

Thank You