

Panel Discussion

超高速で世界が繋がる

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Adam Smith (1723—1790) and the Industrial Revolution



- His famous book:
“An inquiry into the nature and causes of **the wealth of nations**”
諸国民の富 (国富論)
- The Industrial Revolution
and transportation technology

Information and communication

Evolution of Technology

- Walking on foot
- Aircraft



4 km/h

1000 km/h

250 times

- ARPAnet in 1983
- Backbone today

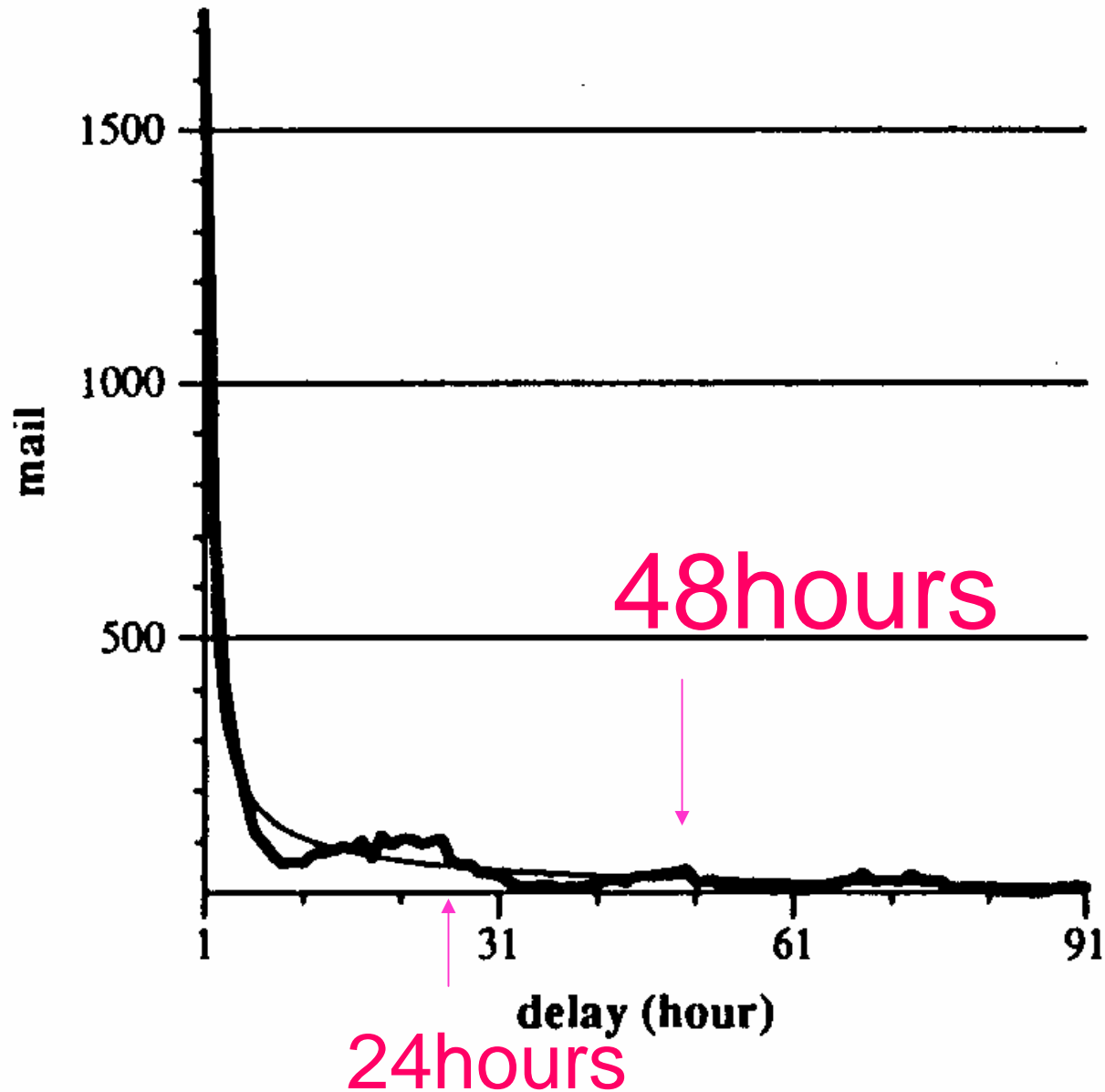


56 Kbps

40 Gbps

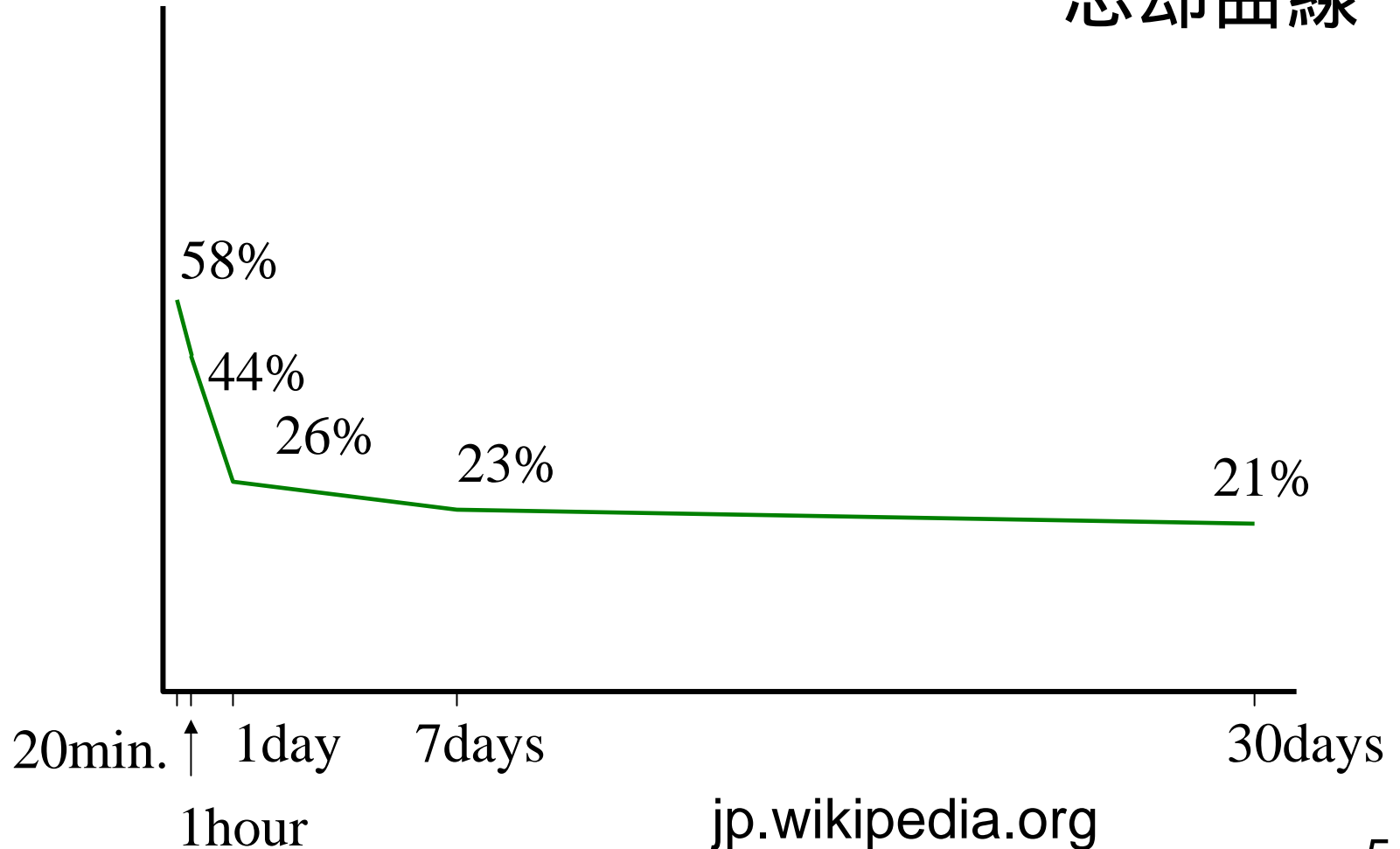
714.3 times

Social response — E-mail reply

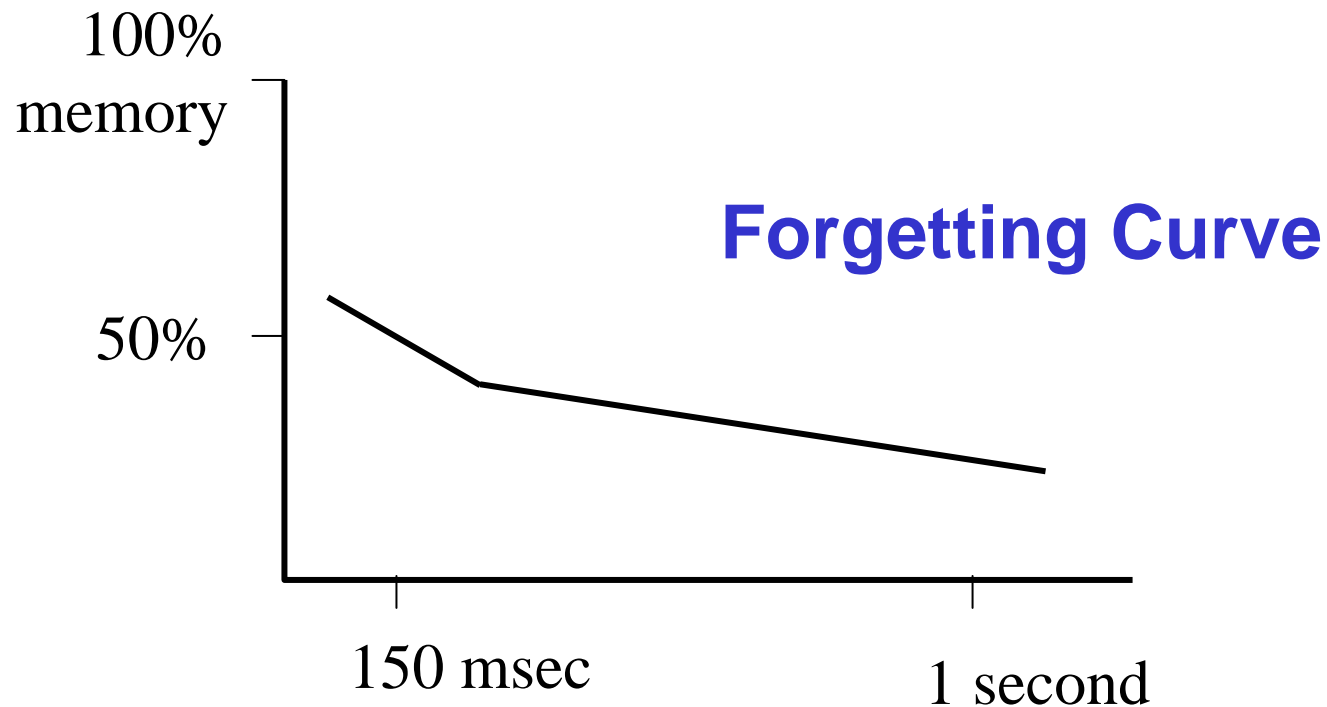


Forgetting Curve

忘却曲線



Response time - Human interface



- Nobody can use slow machines.

The graph is re-drawn schematically by the author based on the theory described by Kawaguchi, Kurihara and Sugarawa:

Data Communications

(1) Connection oriented (error free)

TCP (resend)

E-mail, WWW, file transfer

(2) Datagram (connection-less)

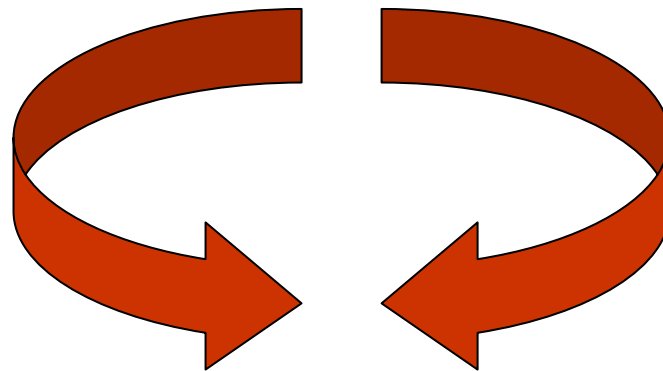
UDP, IP

video and audio in real time

issues

Media convergence in our daily life

- Newspaper
- Television
- Telephone



Latency, delay time

Newspaper



Paper



Web site

complementary

Television

broadcast

Analog



Digital



bidirectional



IP network

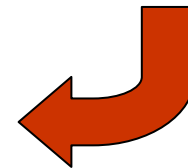
multicast



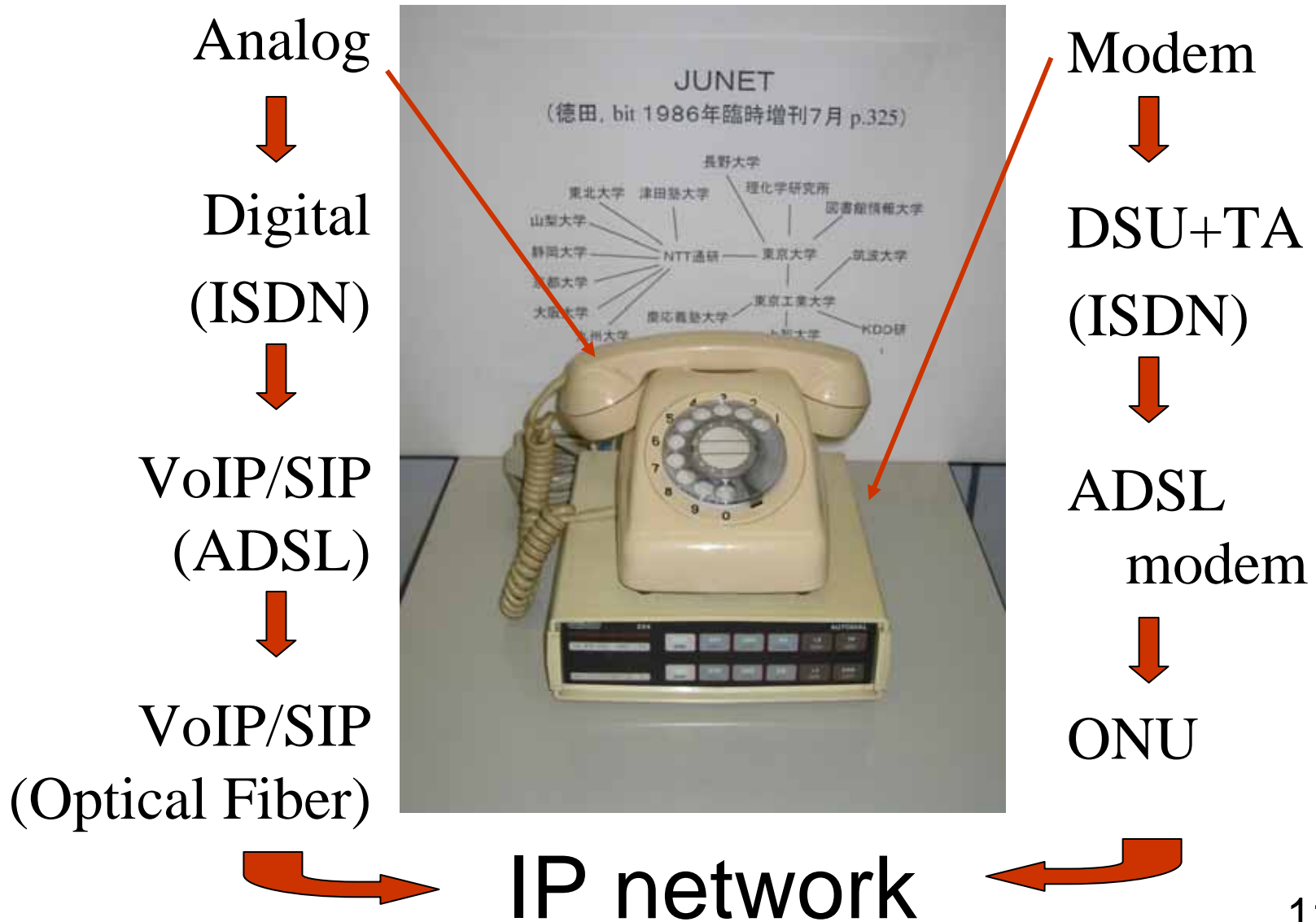
CATV HFC
(Fiber & COAX)



CATV FTTH



Telephone



e-Science

- e-VLBI
- Medical application
- Earth monitoring



ESA/NASA, the AVO project and Paolo Padovani

- High energy physics
- Space science
- Astronomy

