

# 25 Years of Internet Globalization

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Thanks also to Kilnam Chon (KAIST) and Jun Murai (Keio U), who were unable to participate today.

- In November, 1987, 69 people from 28 countries (plus EC and RARE) participated in the 6<sup>th</sup> IANW (International Academic Networking Workshop) at Princeton, NJ, organized by Larry Landweber
- Participants were from network initiatives in North and South America, Europe, Asia and Oceania, many for the first time
- Soon afterwards, most of these initiatives would form part of the then rapidly expanding global Internet

- In 1985 the NSF opted for TCP/IP for NSFNET – this changed the world, but not immediately
- Dissemination greatly assisted by journal articles published in 1986
- In 1987 there was still great variety of alternative network architectures, and no one solution had prevailed
- After 1987, NSFNET became the centre of global research networking for several crucial years, providing IP connectivity between separate national and regional initiatives and shaping the the early days of the global Internet

## NSFNET in journal articles in 1986

Ministério da  
Saúde

Ministério da  
Cultura

Ministério da  
Educação

Ministério da  
Ciência, Tecnologia  
e Inovação

GOVERNO FEDERAL  
**BRASIL**  
PAÍS RICO É PAÍS SEM POBREZA

- **Computer Networking for Scientists**  
Dennis Jennings, Larry Landweber, Ira Fuchs, Dave Farber,  
W Richards Adrion,  
Science, v. 231, p. 943-950
- **Research Computer Networks and Their Interconnection**  
Larry Landweber, Dennis Jennings, Ira Fuchs,  
IEEE Communications Magazine, v. 24 (6), p. 5-17.
- **Notable Computer Networks**  
John Quarterman, Josiah Hoskins,  
Communications of the ACM, v. 29 (10), p. 932-971

## But before this: Brazil in the 1980s

- Buy your own phone line (\$1000 market value) from the monopoly telco
- Only data services were
  - Telex
  - X.25 (to whom?)
  - International banking (SWIFT) and airline (SITA) networks

So, for academic users:

- Postal service only effective international link
- Printed journals all-important (long delays and scarcity)
- Meetings the only effective interaction space
- But quietly carry on building local networks and occasionally long-distance networks (within the country)

# 1987: networks come together in Brazil

Ministério da Saúde    Ministério da Cultura    Ministério da Educação    Ministério da Ciência, Tecnologia e Inovação



- Already 4 separate proposals for international network links in preparation from 1988 (different actors and various technologies)
- Discussions on how to organize these and extend their benefits to whole country (July and October)
  - Resulted in government-supported national network project RNP in 1989, finally deployed in 1992 with TCP/IP
- Participation in 6<sup>th</sup> IANW in Princeton (November)
  - Invitation due to fortuitous encounter in April in London with Kilnam Chon



- Asia Internet History Project, coordinated by Kilnam Chon
  - <https://sites.google.com/site/internethistoryasia/home>
  - Includes documentation of the IANW 1982-1989
- Larry Landweber's maps of international connectivity between 1991 and 1997
  - <http://pages.cs.wisc.edu/~lhl/maps/>