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TITLE: INTERNATIONAL TRAFFIC & TARIFF STATISTICS

International traffic and tariff statistics

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* The views expressed in this presentation are those of the author, and do not necessarily reflect the opinions of the ITU or its membership. Tim Kelly can be contacted by email at Tim.Kelly@itu.int.

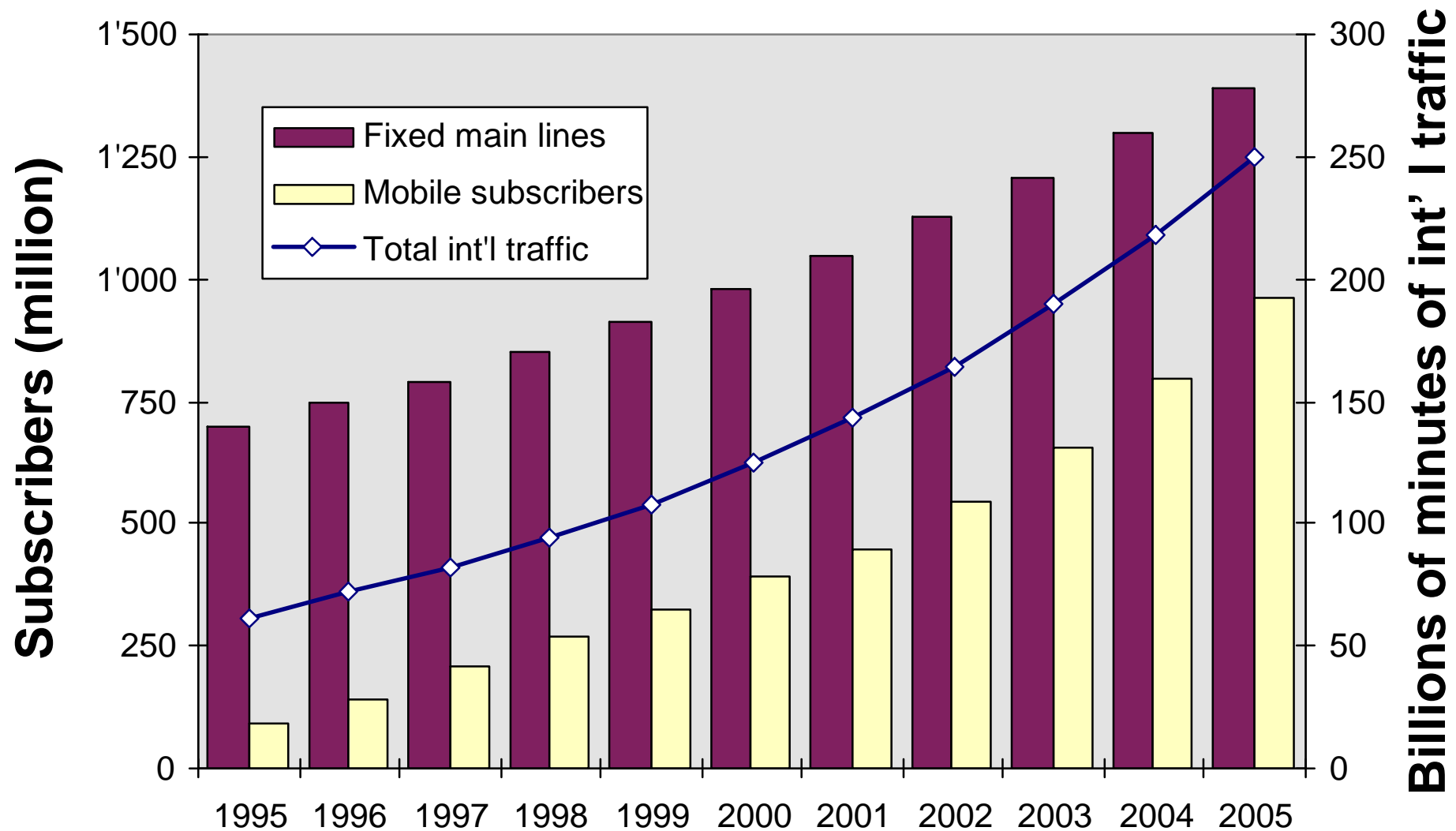


International traffic and tariff statistics

Agenda

- **Why traffic and tariff statistics matter**
 - ⇒ **Measuring “globalisation”**
 - ⇒ **Death of distance**
 - ⇒ **Trade in telecommunication**
- **Minutes, megabytes or circuits?**
 - ⇒ **Telephone/fax traffic versus Internet traffic**
 - ⇒ **Tariff comparisons**
- **ITU/TeleGeography activities**
 - ⇒ **Data collection**
 - ⇒ **Reports, Databases, Projects**
- **What does it all add up to?**

Projection of growth trends, fixed and cellular subscribers and int'l traffic, 1995-2005



Source: ITU.



International traffic and tariff statistics

Why measure minutes of international traffic?

- **Traffic = Trade**

- ⇒ International telephone, telex, fax and e-mail traffic closely mirror international trade flows

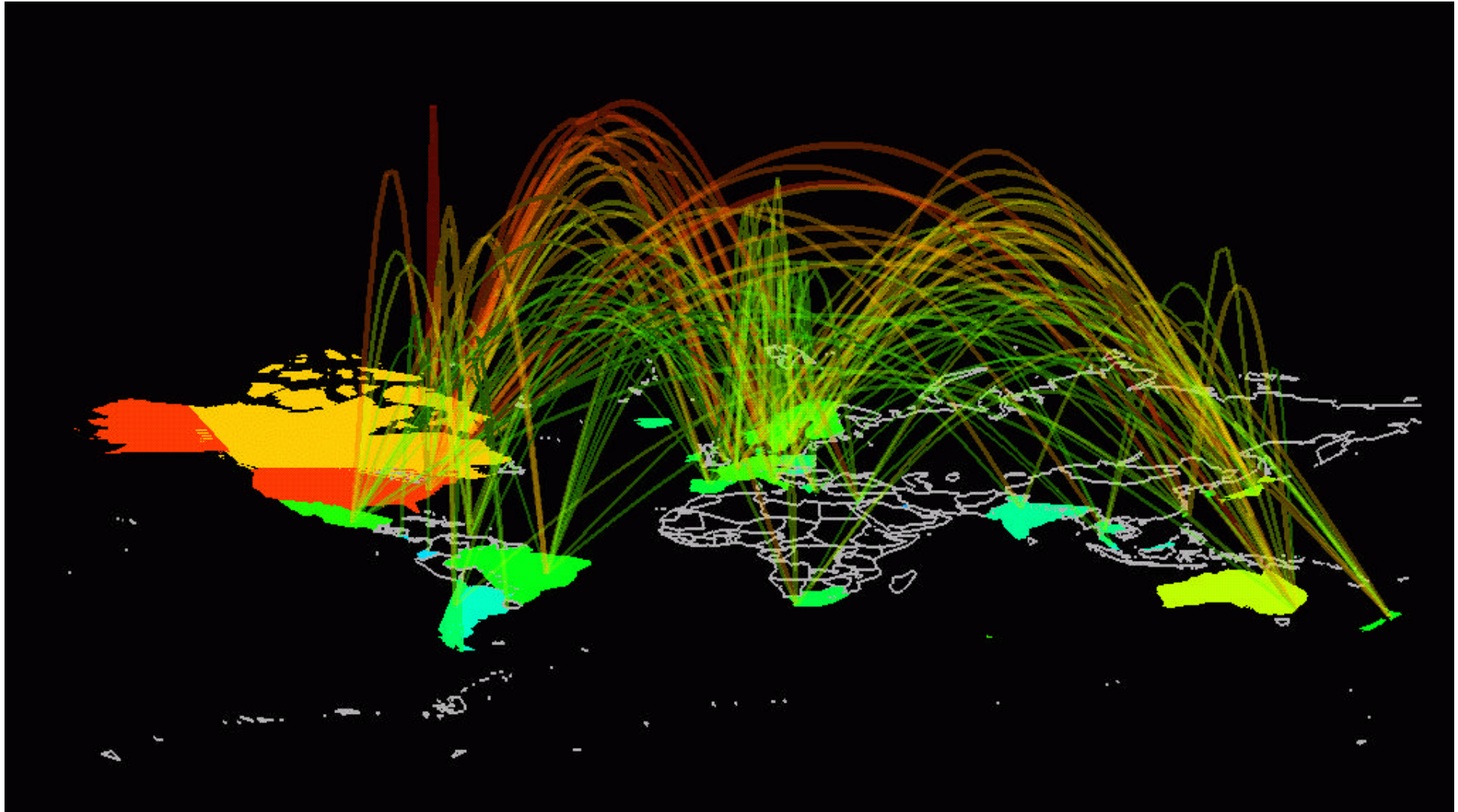
- **Minutes = Money**

- ⇒ Under the international accounting rate system, net balances of minutes of traffic translate into cash payments

- **Phone calls = Families**

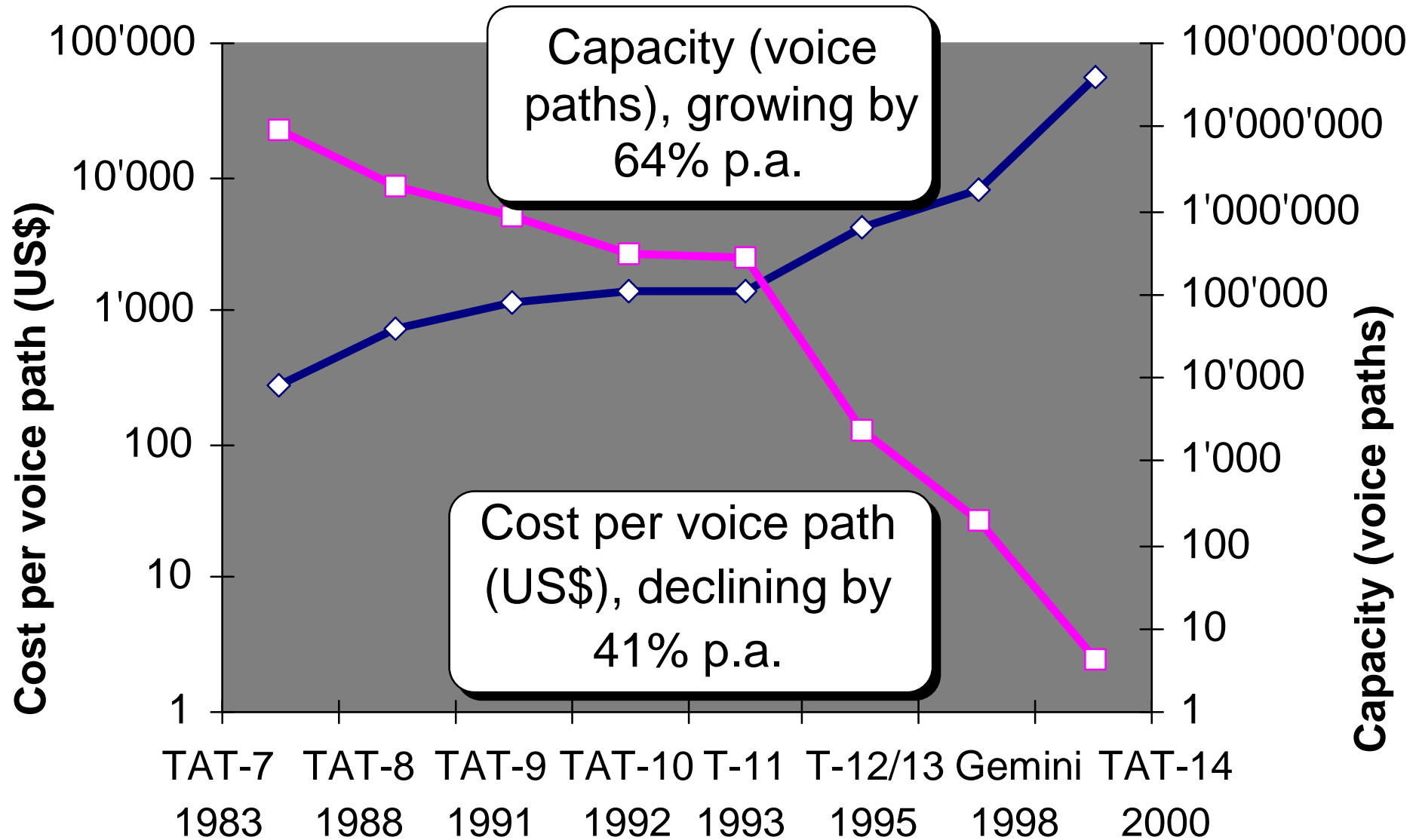
- ⇒ Bilateral calling patterns bear imprint of historical migration patterns between countries

Traffic flows show globalisation in action



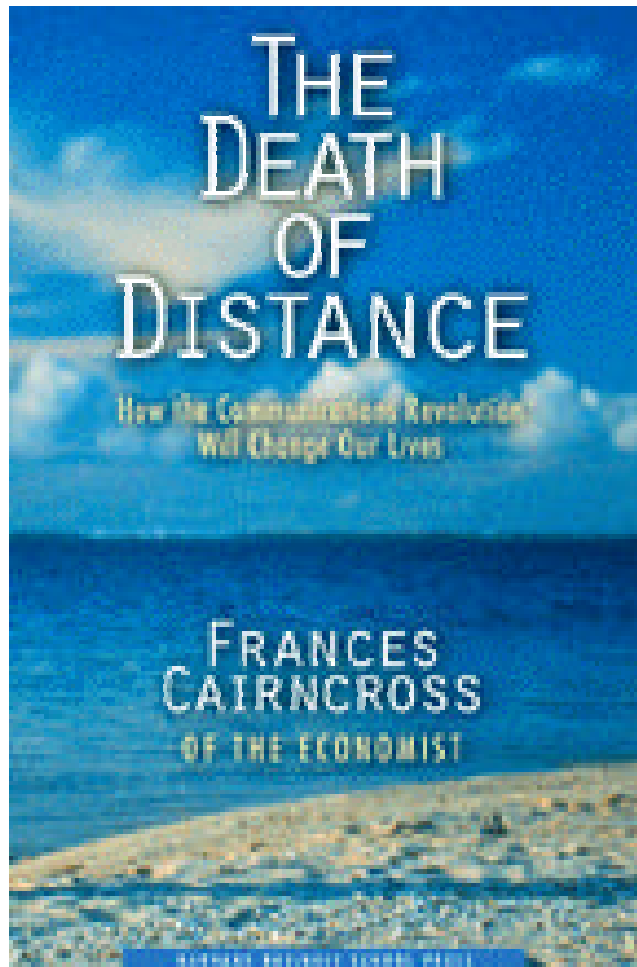
*A visualisation of a sample of Internet Traffic Flows:
Source: Stephen Eick, Bell Labs.*

Infrastructure capacity and costs, TransAtlantic cables, 1983-2000



Source: ITU, TeleGeography Inc., FCC.

Note: Voice-path numbers assume a compression ratio of 5:1 to number of circuits.



“The death of distance as a determinant of the cost of communicating will probably be the single most important factor shaping society in the first half of the next century.”

Frances Cairncross, “The Death of Distance”, 1997



International traffic and tariff statistics

What should we measure? Traffic

- **Measure minutes?**

- ⇒ Traditional approach, useful for telephone and fax traffic. Good statistics for end-to-end traffic due to exchange of international accounts.
- ⇒ **BUT**, competition and technological change are eroding the relevance of minutes

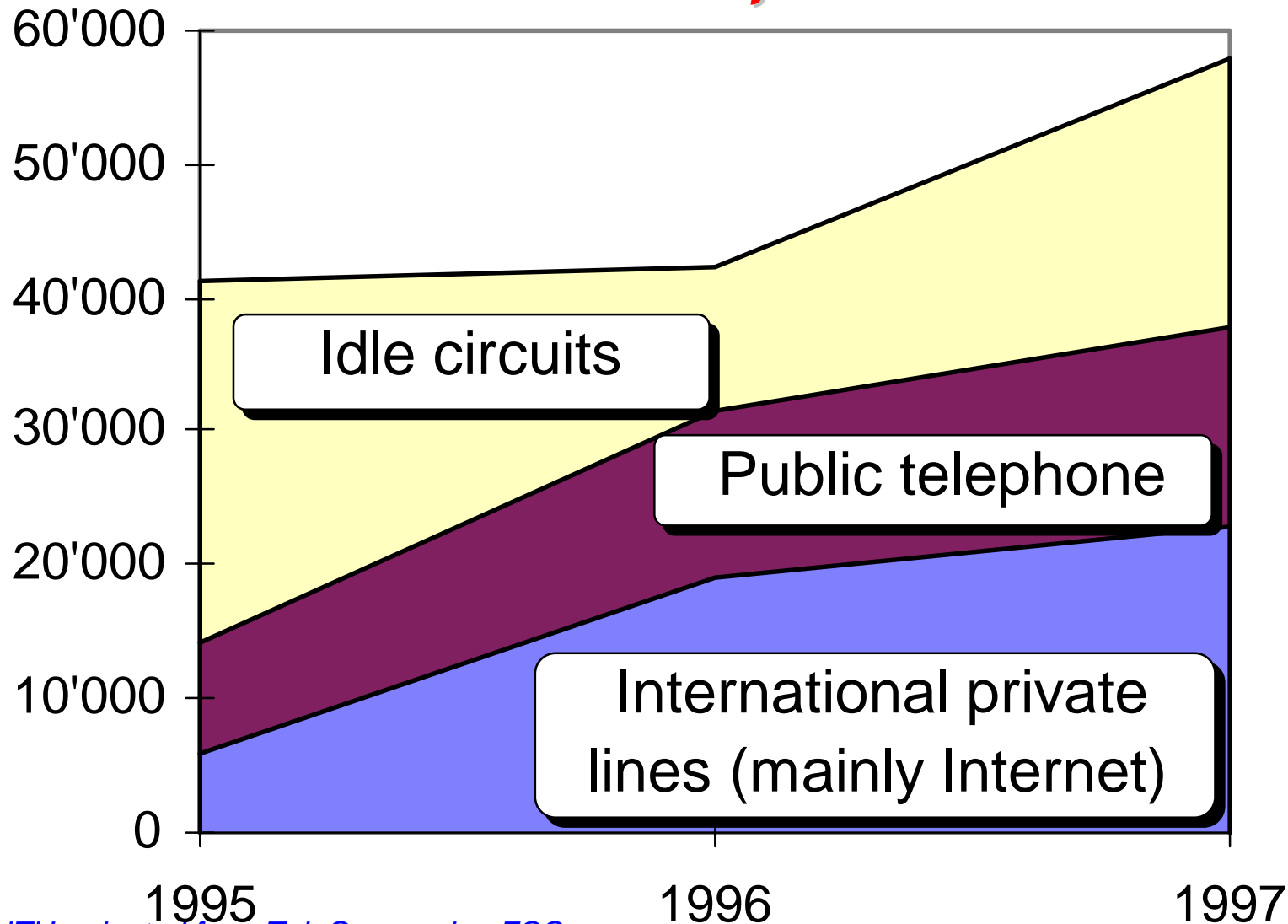
- **Measure megabytes?**

- ⇒ Would seem to be a logical evolution from minutes for measuring mixed data/voice/video flows
- ⇒ **BUT**, in IP networks, traffic rarely flows end-to-end

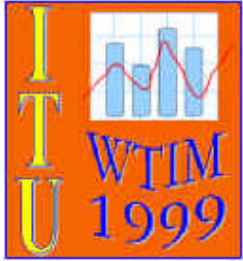
- **Measure circuits?**

- ⇒ Best technology-neutral measure of capacity
- ⇒ **BUT**, does not measure end-to-end interaction

Circuit capacity shows shift from Telephone to Internet. Usage of int'l circuits between US & UK, 1995-97



Source: ITU, adapted from TeleGeography, FCC.

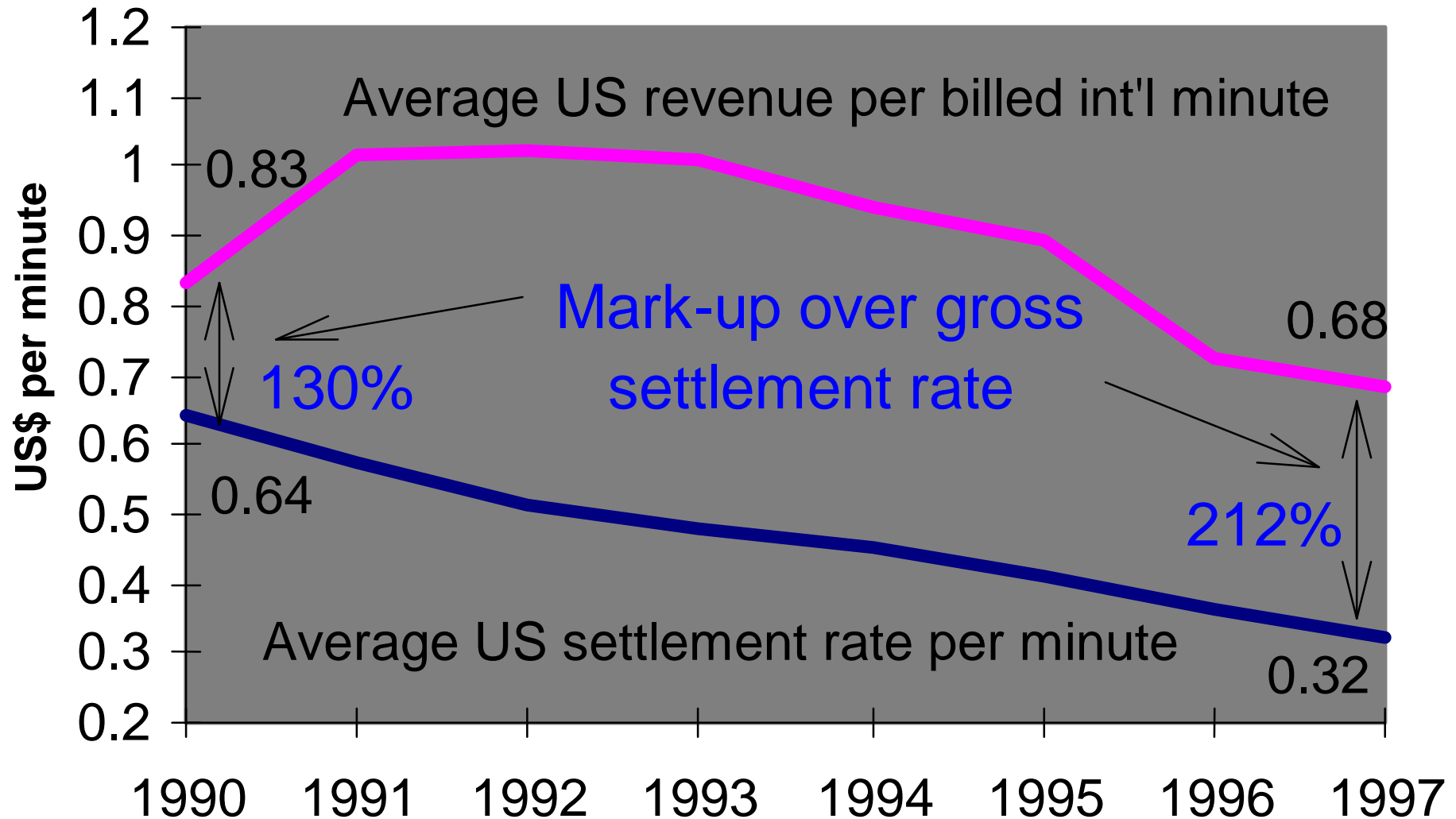


International traffic and tariff statistics

What should we measure? Tariffs

- **Measure retail prices?**
 - ⇒ Retail prices (e.g., 3 minute call from X to Y) are the indicator of most relevance to consumers
 - ⇒ **BUT**, widespread availability of discounts, offers & surcharges makes headline prices less relevant
- **Measure wholesale prices?**
 - ⇒ Settlement rates have traditionally set floor for telecom prices. Wholesale prices mirror settlement rates.
 - ⇒ **BUT**, emerging paradigm is for national interconnect
- **Measure revenue per minute of traffic?**
 - ⇒ Effectively captures differences in availability of discounts
 - ⇒ **BUT**, only limited data is available

Divergence over time between retail and wholesale prices. USA, 1990-97

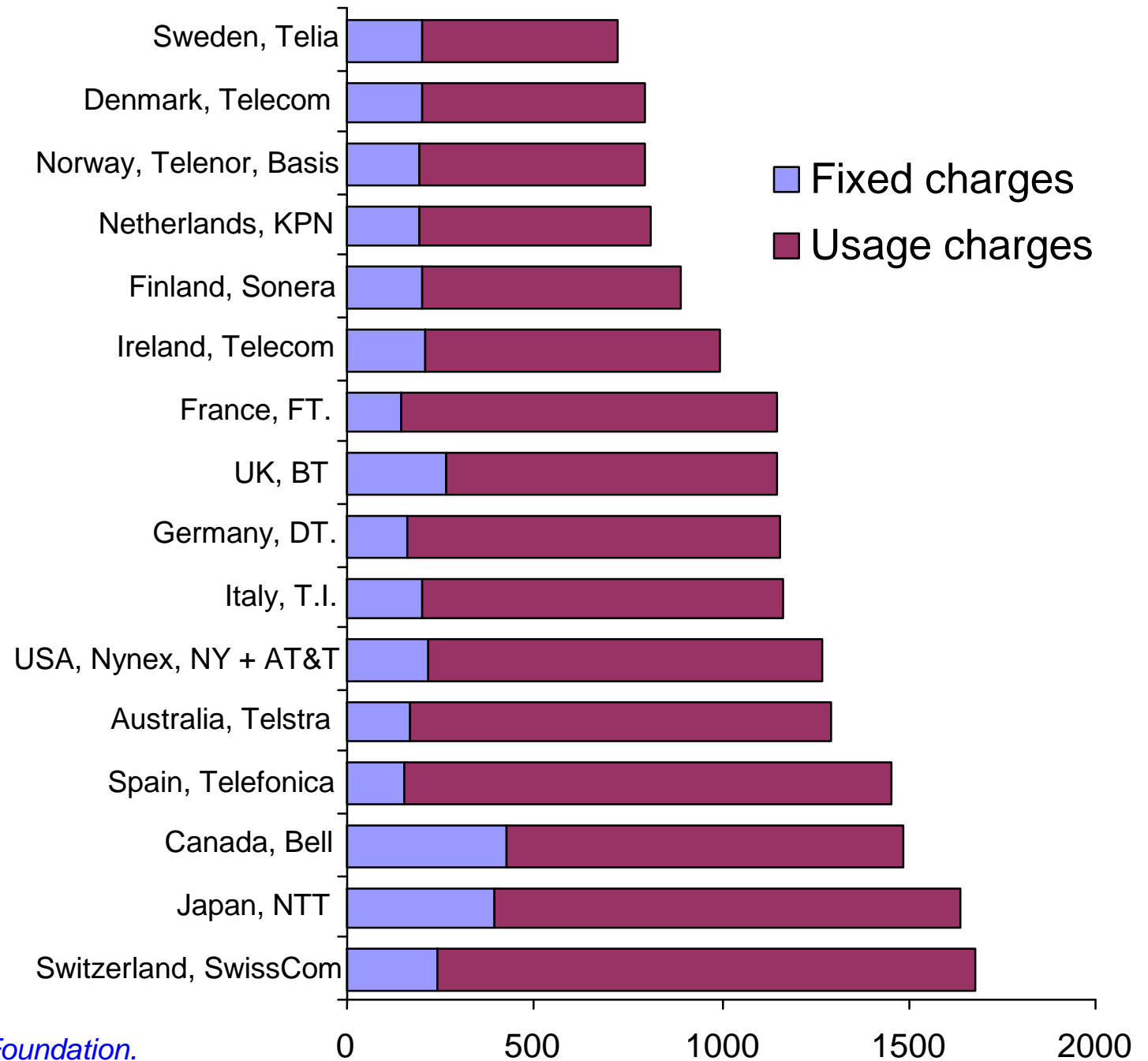


Source: ITU, adapted from FCC.

Note: "Average US revenue per billed minute" = total int'l IMTS revenue divided by total outgoing int'l minutes.

Tariff baskets

National business basket, Feb 1999 in US\$



Source: OECD/Eurodata Foundation.



International traffic and tariff statistics

Data collection questionnaire

- **Incoming and outgoing traffic minutes to major (top 20) traffic destinations**
 - ⇒ **by country**
 - ⇒ **(where necessary, by carrier, if no aggregated statistics exist)**
 - ⇒ **by year**
- **Peak and off-peak cost of a 3 minute direct-dialled call to major destinations**
 - ⇒ **for major carriers**
 - ⇒ **by year**
 - ⇒ **in local currency**
- **Published settlement rate data (e.g., US, UK, NZ)**



International traffic and tariff statistics

ITU/TeleGeography activities

- **Publications**

- ⇒ “Direction of Traffic” report and database
- ⇒ “TeleGeography” annual report
(<http://www.telegeography.com>)

- **ITU-T Study Group 3 Focus Group**

- ⇒ Analysis of settlement rates, transit rates
(<http://www.itu.int/intset/focus/index.html>)
- ⇒ Use of “average of lowest 20%” to define indicative target rates
- ⇒ 13 country case studies commissioned by ITU, CTO, EU (<http://www.itu.int/wtpf/cases/index.htm>)

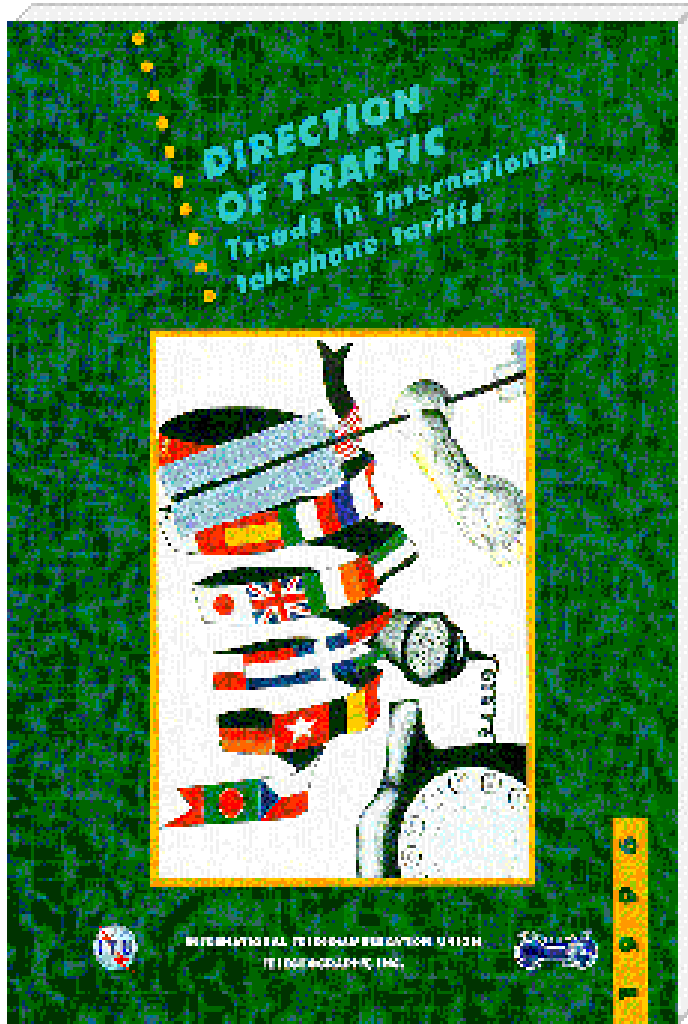
- **ITU Asia-Pacific Regional Office**

- ⇒ Tariff comparisons for Asia-Pacific region



International traffic and tariff statistics

“Direction of Traffic”



- 1994: Trends in international telephone traffic
- 1996: Trends in international telephone tariffs
- 1999: Trading Telecom Minutes (*forthcoming, July 1999*)

For more information: <http://www.itu.int/ti/publications/index.htm#TRAFFIC96>