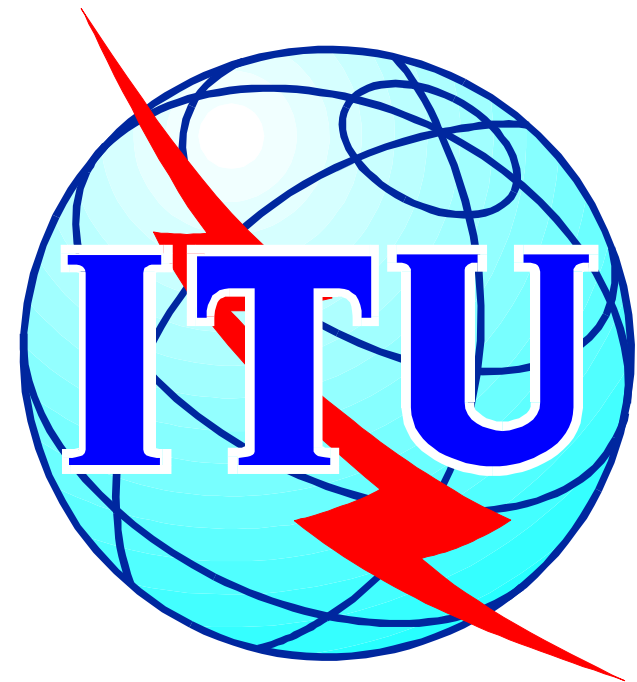
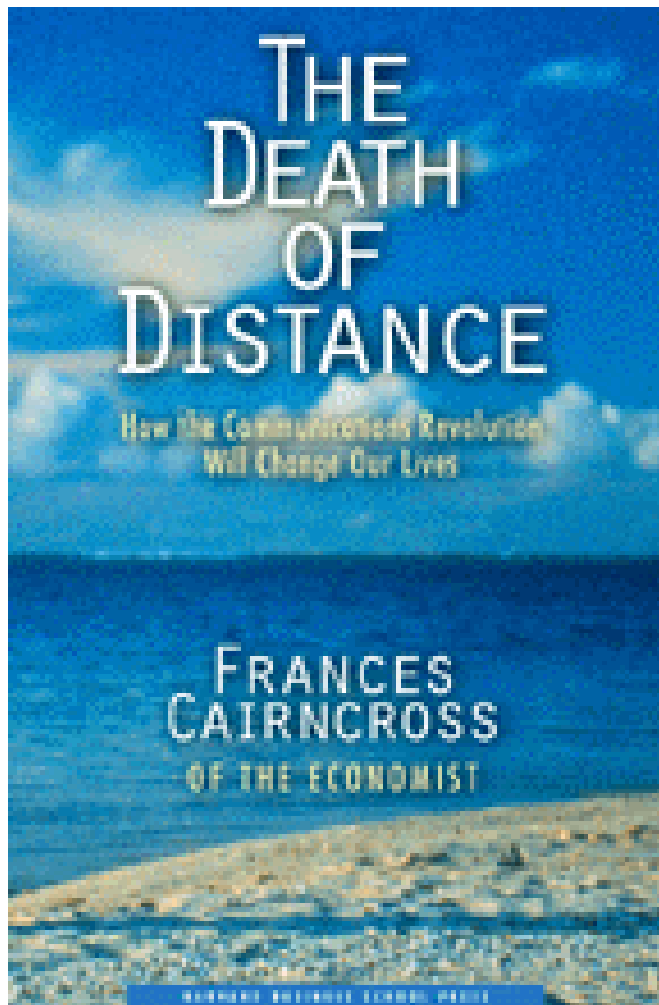


Pricing international services towards cost-orientation

**Dr Tim Kelly, ITU
Seminar on cost-
based tariffing, Delhi,
February 16-18, 1999**



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



“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.”

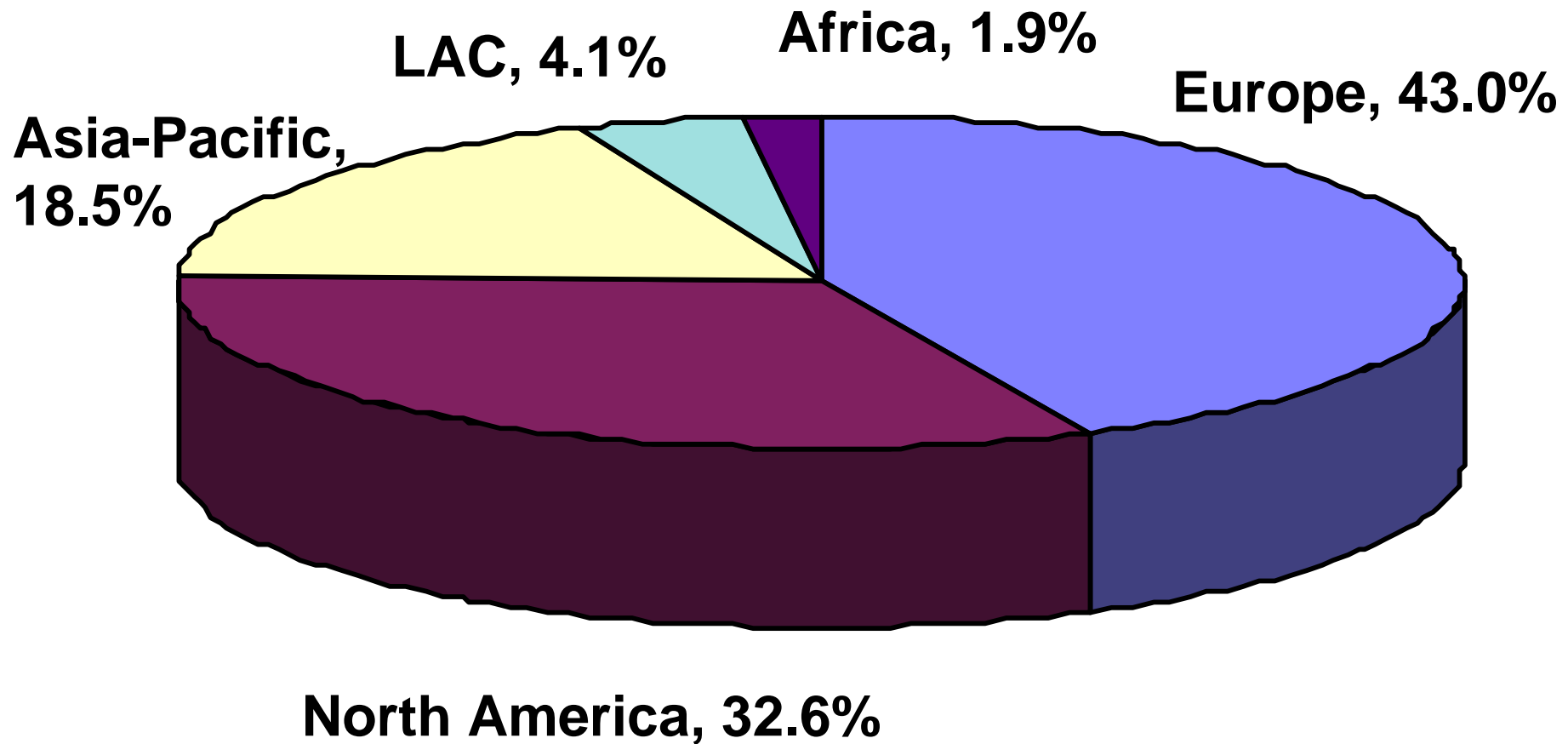
Frances Cairncross, “The Death of Distance”, 1997

Pricing international services towards cost-orientation

- **Understanding international market structures**
 - ⇒ **Competitive versus monopoly markets**
 - ⇒ **Call origination versus call termination**
 - ⇒ **Retail pricing versus wholesale pricing**
- **Cost drivers for international services**
- **Retail price trends**
- **Wholesale price trends**
 - ⇒ **Pressure for reform of accounting rate system**
 - ⇒ **Development of interconnect regimes**
 - ⇒ **Trading of telecom minutes**
- **The international services market in 2005**

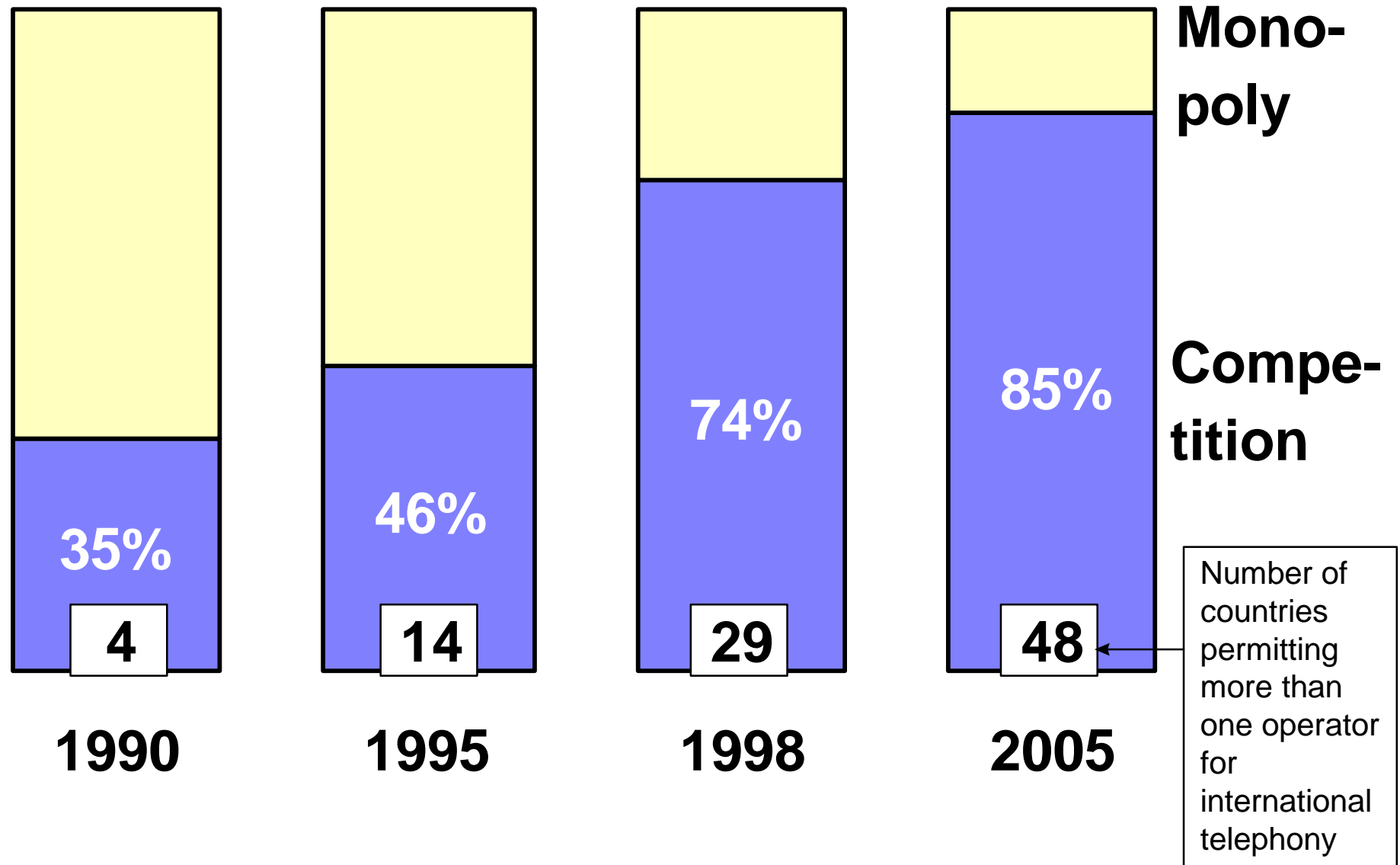
International traffic by origin, 1997

Global total, 81.8 billion minutes



Note: "LAC" = Latin America & Caribbean. Source: ITU/TeleGeography "Direction of Traffic" Database.

Percentage of outgoing international traffic open to competition



Note: Analysis is based on WTO Basic Telecommunications Commitments and thus presents a minimum level of traffic likely to be open to competitive service provision. *Source:* ITU, WTO.

Countries permitting competition in basic telecoms:

1990

**Japan
United Kingdom
United States**

1995

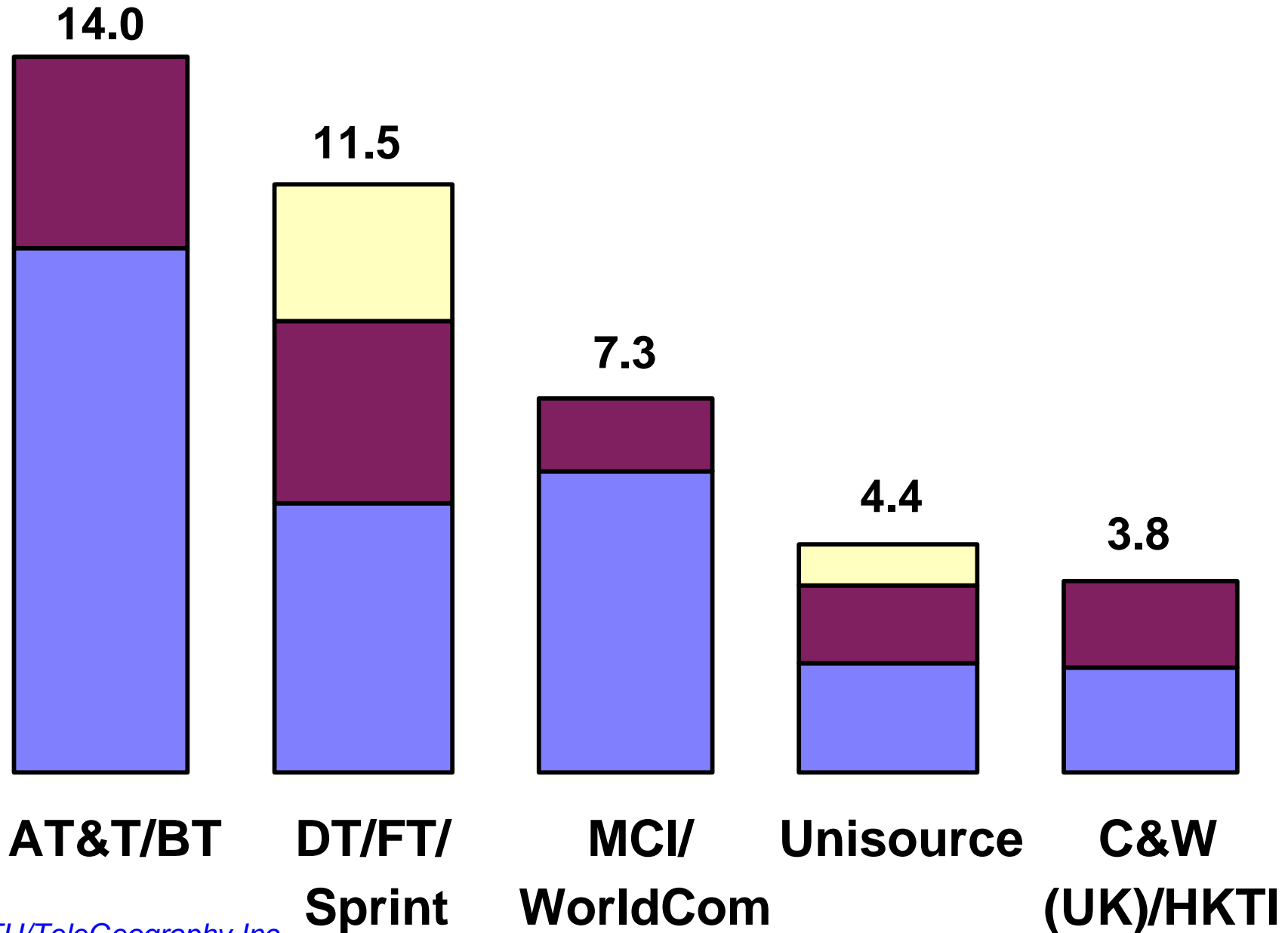
**Australia
Canada
Chile
Finland
Japan
Korea (Rep.)
New Zealand
Philippines
Sweden
United Kingdom
United States**

1998

**Australia
Austria
Belgium
Canada
Chile
China
Denmark
El Salvador
Finland
France
Germany
Ghana
Hongkong SAR
Israel
Italy
Ireland (Dec 98) plus others**

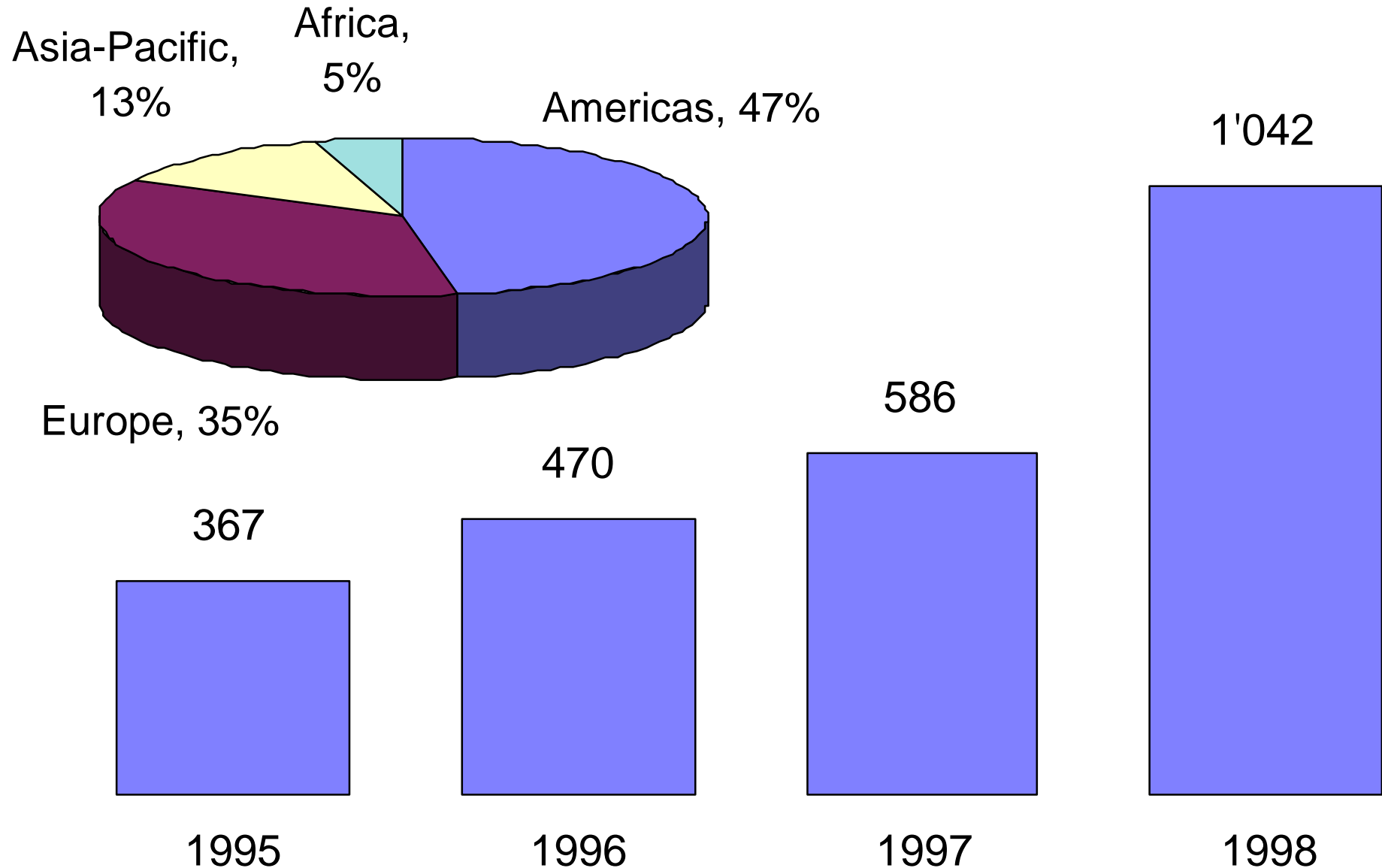
**Japan
Korea (Rep.)
Mexico
New Zealand
Netherlands
Norway
Philippines
Russia
Spain (Dec 98)
Sweden
Switzerland
Uganda
UK
USA**

Major alliances, ranked by billions of minutes of outgoing int'l traffic, 1997



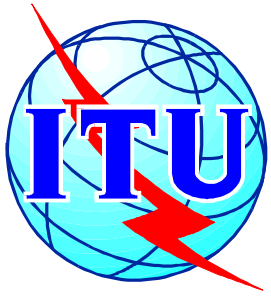
Source: ITU/TeleGeography Inc.

Growth in number of new international carriers, 1995-98, and their location, 1998



Source: TeleGeography, 1999.

Numbers relate to firms with license for facilities-based service or international simple resale in July of year.



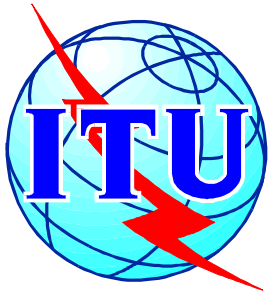
Market characteristics

Call origination

- Low barriers to entry (e.g., call-back)
- Customer = end-user
- Multiple technical possibilities (e.g., Telephone, mobile, Internet, satphone)
- Key to success is brand-name, customer loyalty, marketing and price innovation
- Major cost = billing

Call termination

- High barriers to entry (access network)
- Customer = PTO
- Limited technical possibilities (Telephone or mobile)
- Key to success is network coverage, quality of service, value-added interconnection
- Major cost = network creation & maintenance



Retail and wholesale: Different cost drivers

Retail

- **Costs of customer acquisition and marketing** ↑
- **Costs of billing, customer service, maintenance** ↑
- **Costs of service provision, including interconnection** ↓
- **Other operational costs** →

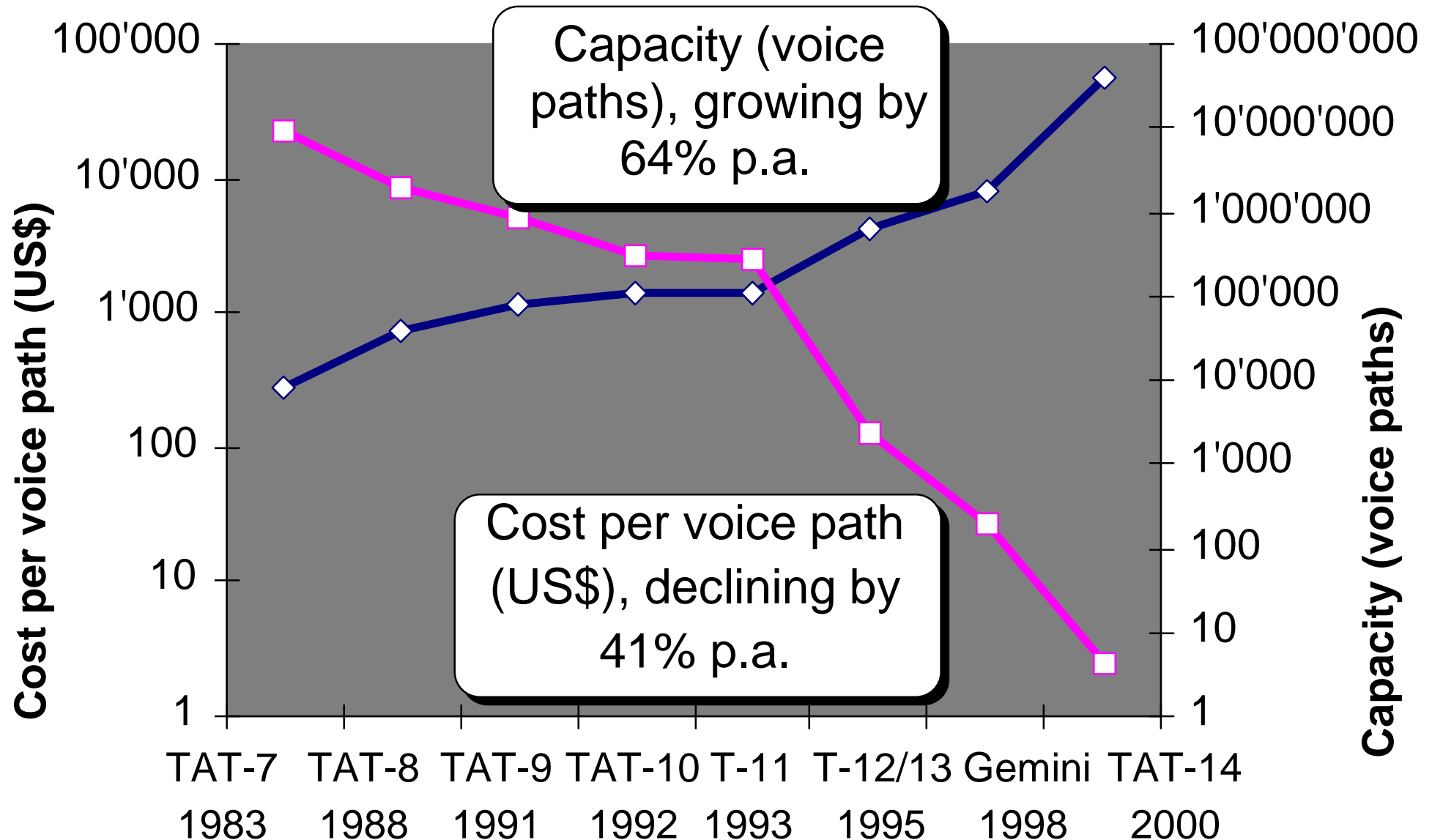
Tending to rise

Wholesale

- **Costs of international capacity (satellite, cable)** ↓
- **Costs of switching capacity** ↓
- **Costs of call termination, interconnection** ↓
- **Costs of billing, maintaining service quality** →
- **Other operational costs** →

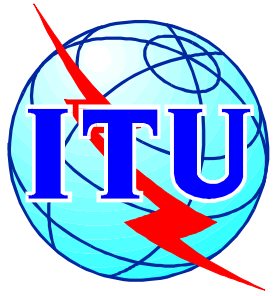
Tending to fall

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.

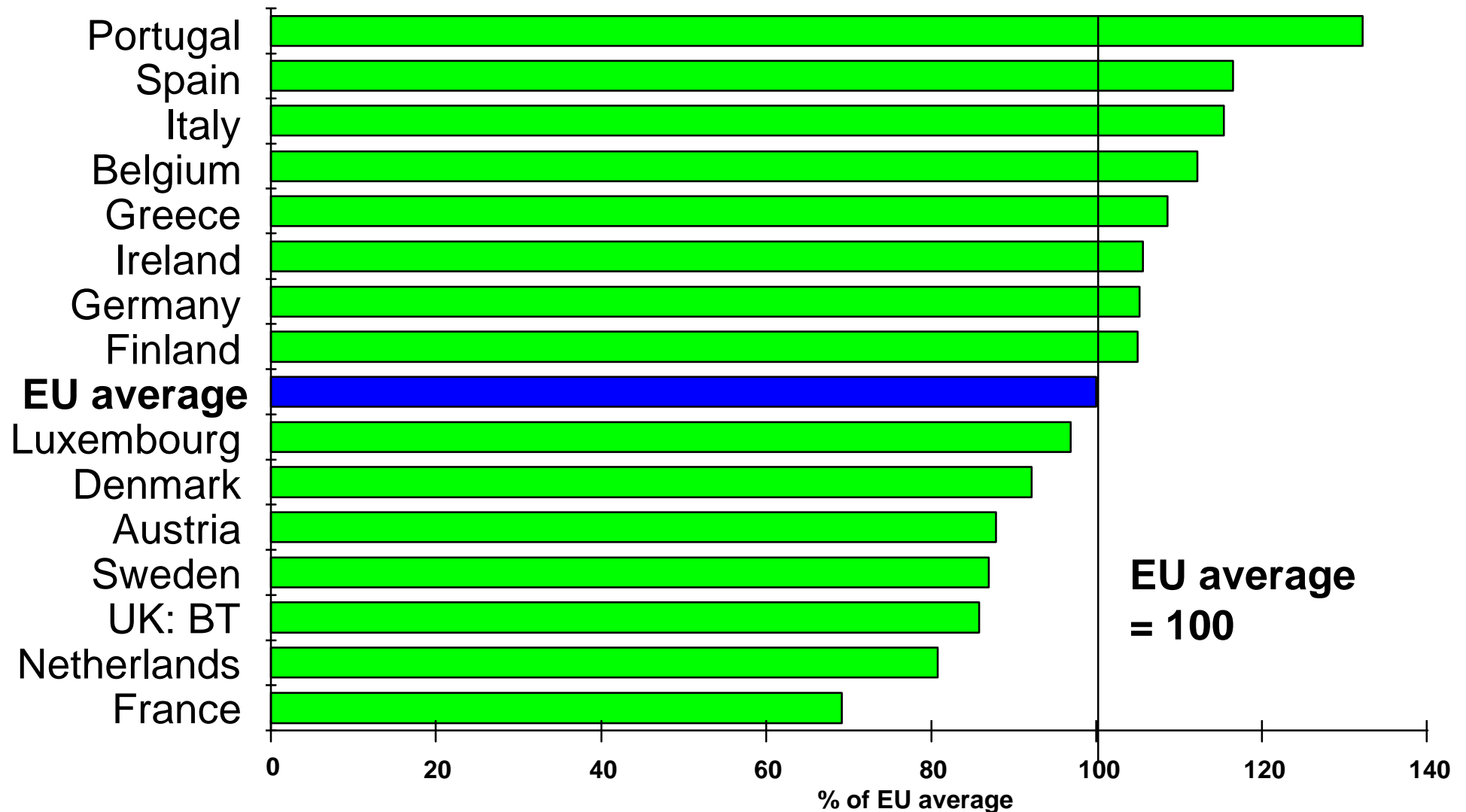


Retail price trends in competitive markets

- **Published prices stable or rising**
- **But**, big increase in the availability of discount minutes
 - ⇒ from established PTOs offering “loyalty schemes”
 - ⇒ from new market entrants
 - ⇒ from call-back service providers
 - ⇒ from Internet telephony service providers
 - ⇒ from calling cards and pre-paid calls
- **Elimination of distance and duration as significant cost causation factors**
- **“Purposeful price confusion”**

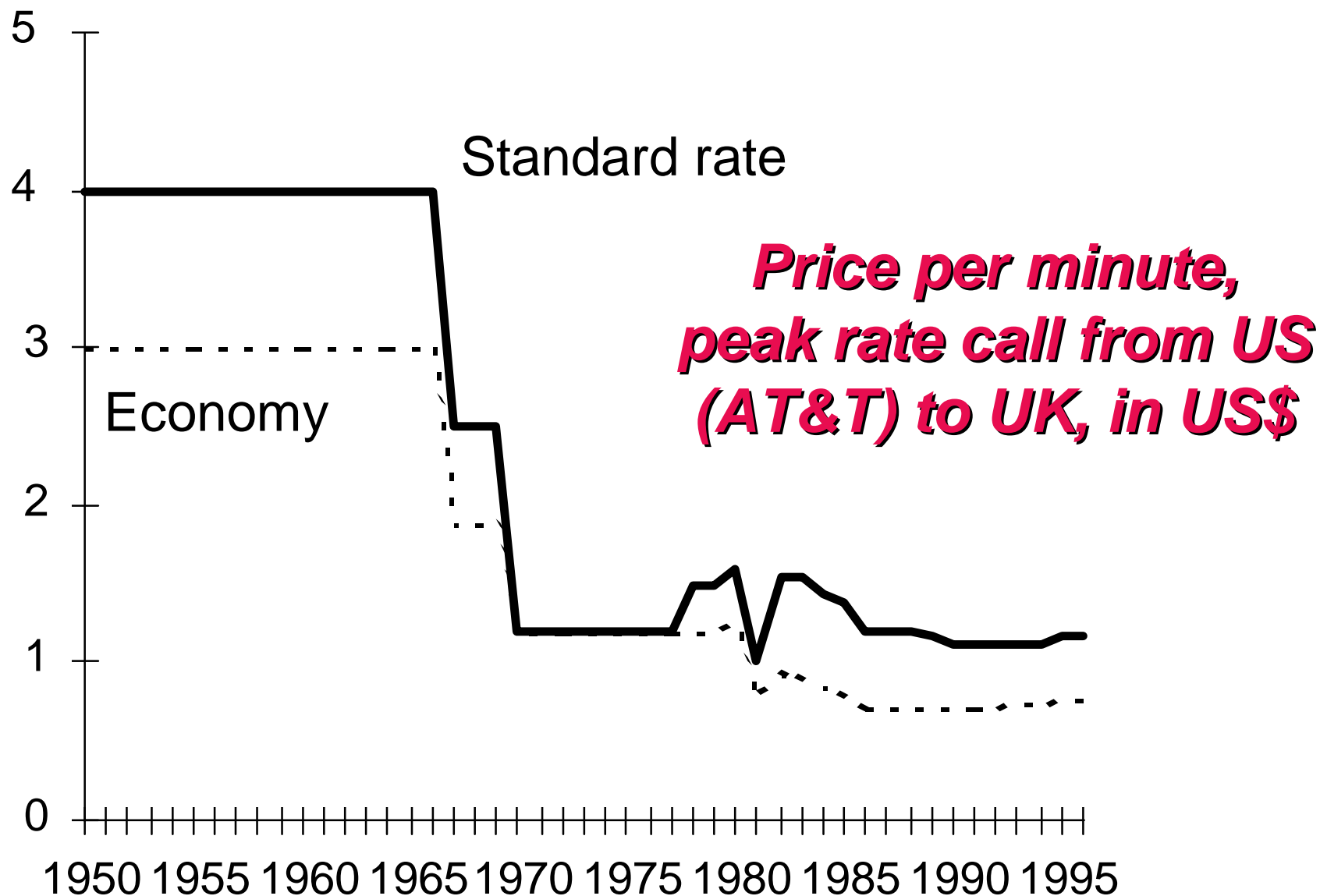
Even between developed countries, big differences persist

Business user calls, without tax, Feb. 1998



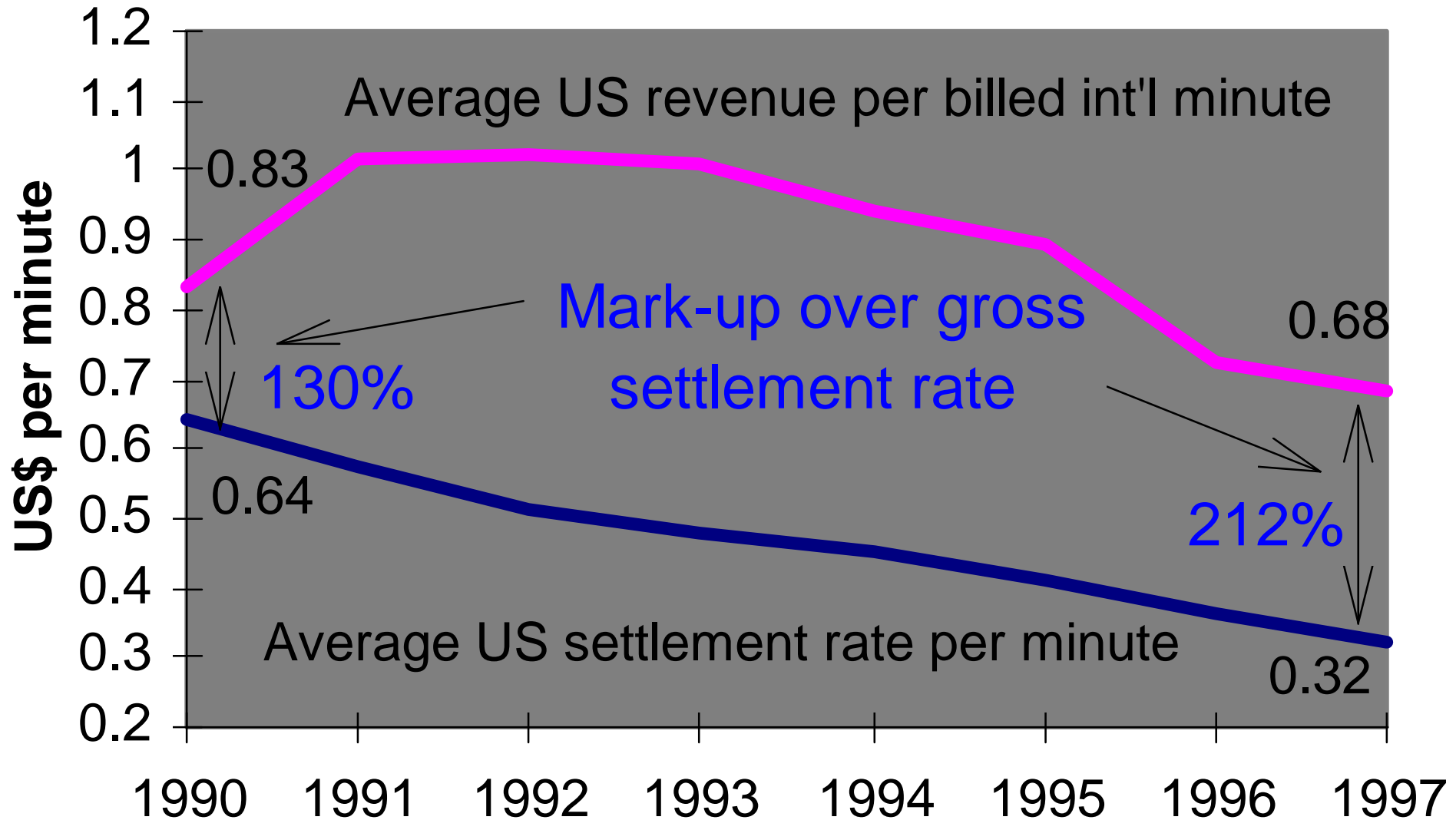
Source: OECD/EuroData Foundation, International call-pair methodology, for business users, weighted by pop.

Published price of international calls relatively stable over time



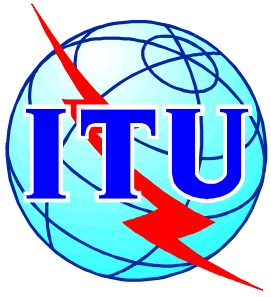
Source: FCC, quoted in ITU/TeleGeography Inc., "Direction of Traffic, 1996". Based on 3 minute call.

Gap between wholesale and retail prices is widening over time



Source: ITU, adapted from FCC.

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

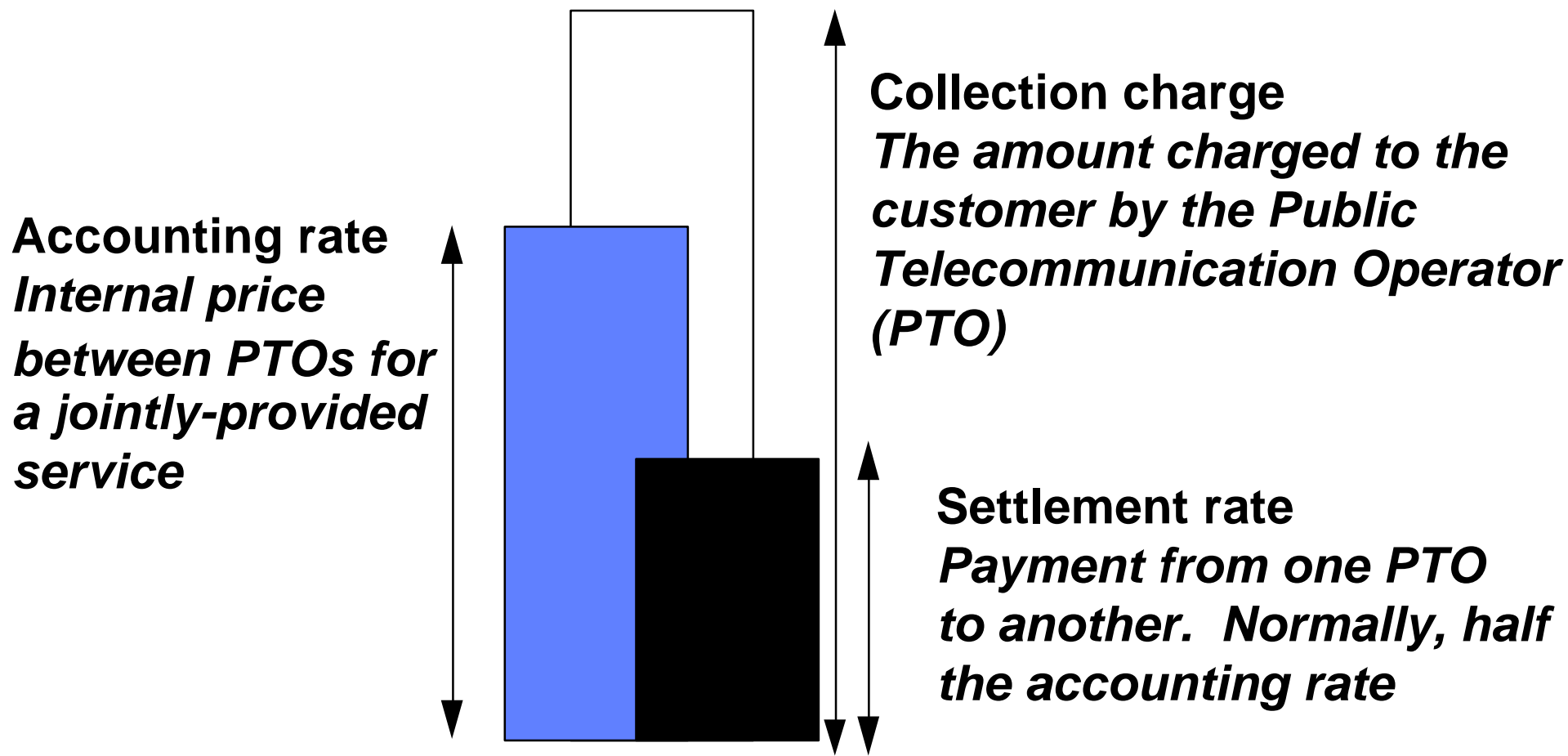


Wholesale price trends, in competitive markets

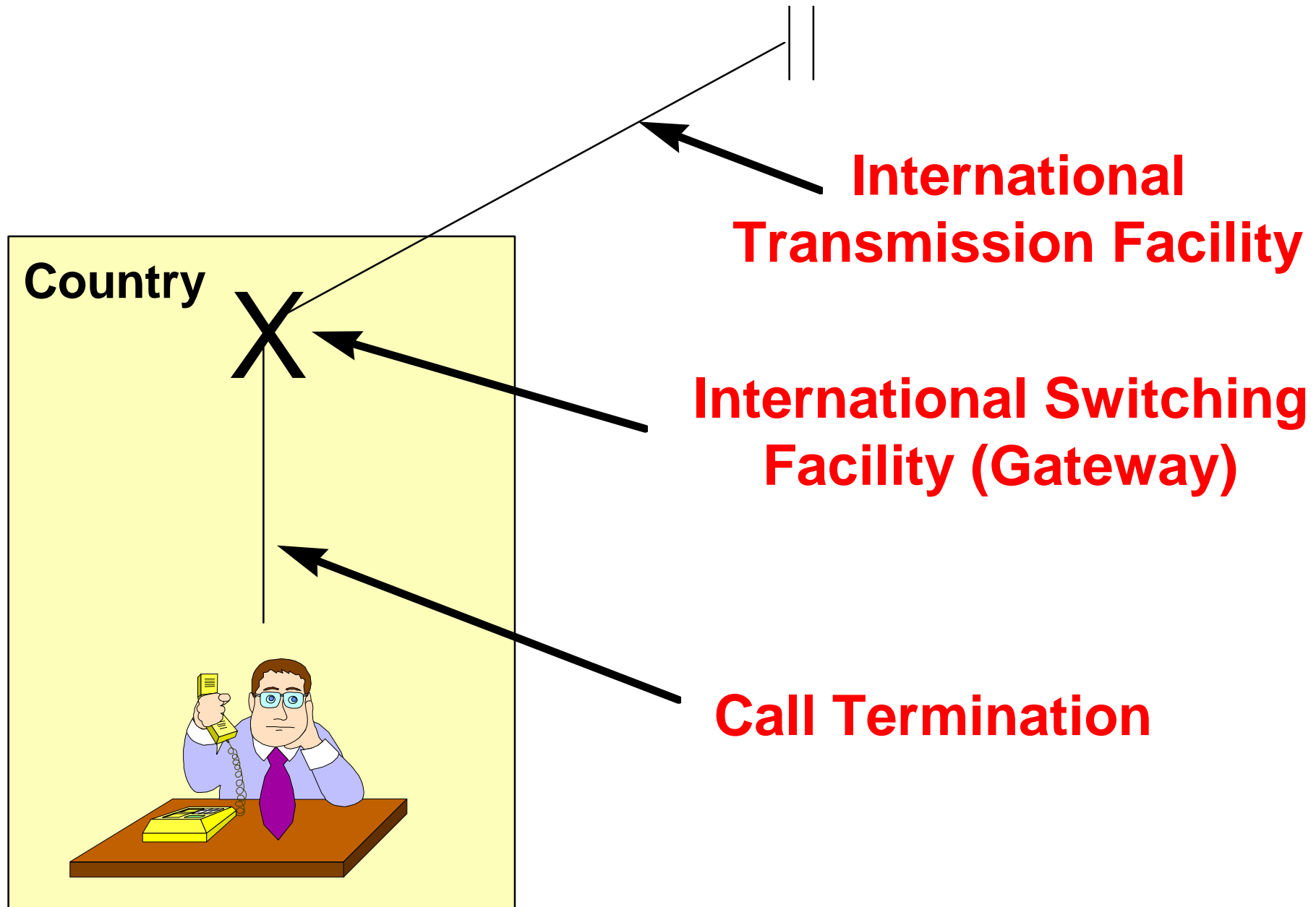
- **Accounting rates still used for majority of traffic relations**
- **Rate of reduction in accounting rates is accelerating fast (>15% p.a.)**
- **Variety of new options for remuneration**
 - ⇒ **End-to-end service provision (self-termination)**
 - ⇒ **Trading options for termination of minutes**
 - ⇒ **National interconnect / termination charge**
 - ⇒ **Hybrid networks (e.g., satellite, mobile, Internet)**
- **Increasing split between competitive and monopoly markets (developed/developing)**



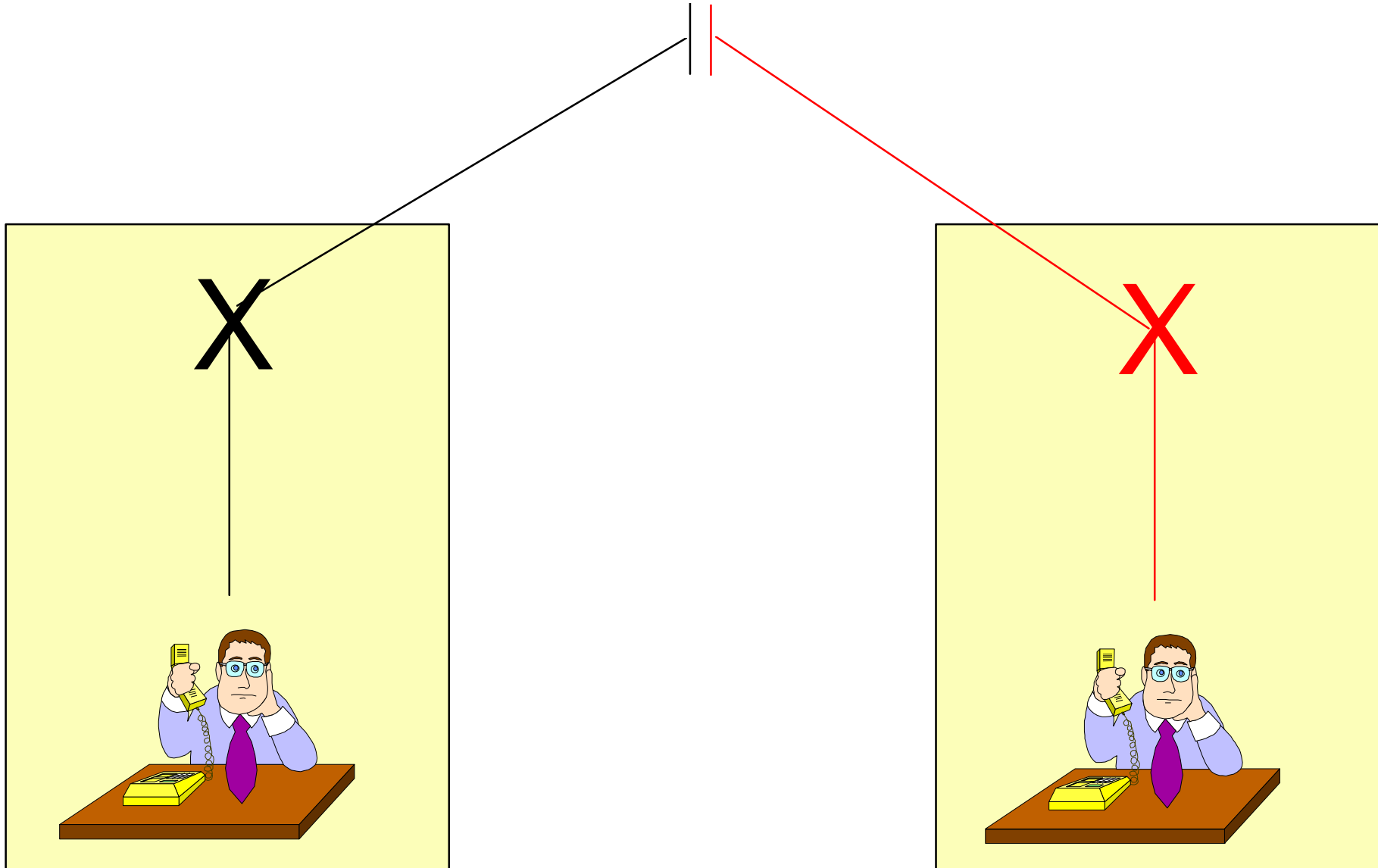
What are accounting and settlement rates?



What the accounting rate covers



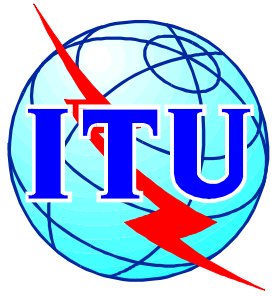
Traditional regime: Joint provision of service





Accounting rate characteristics

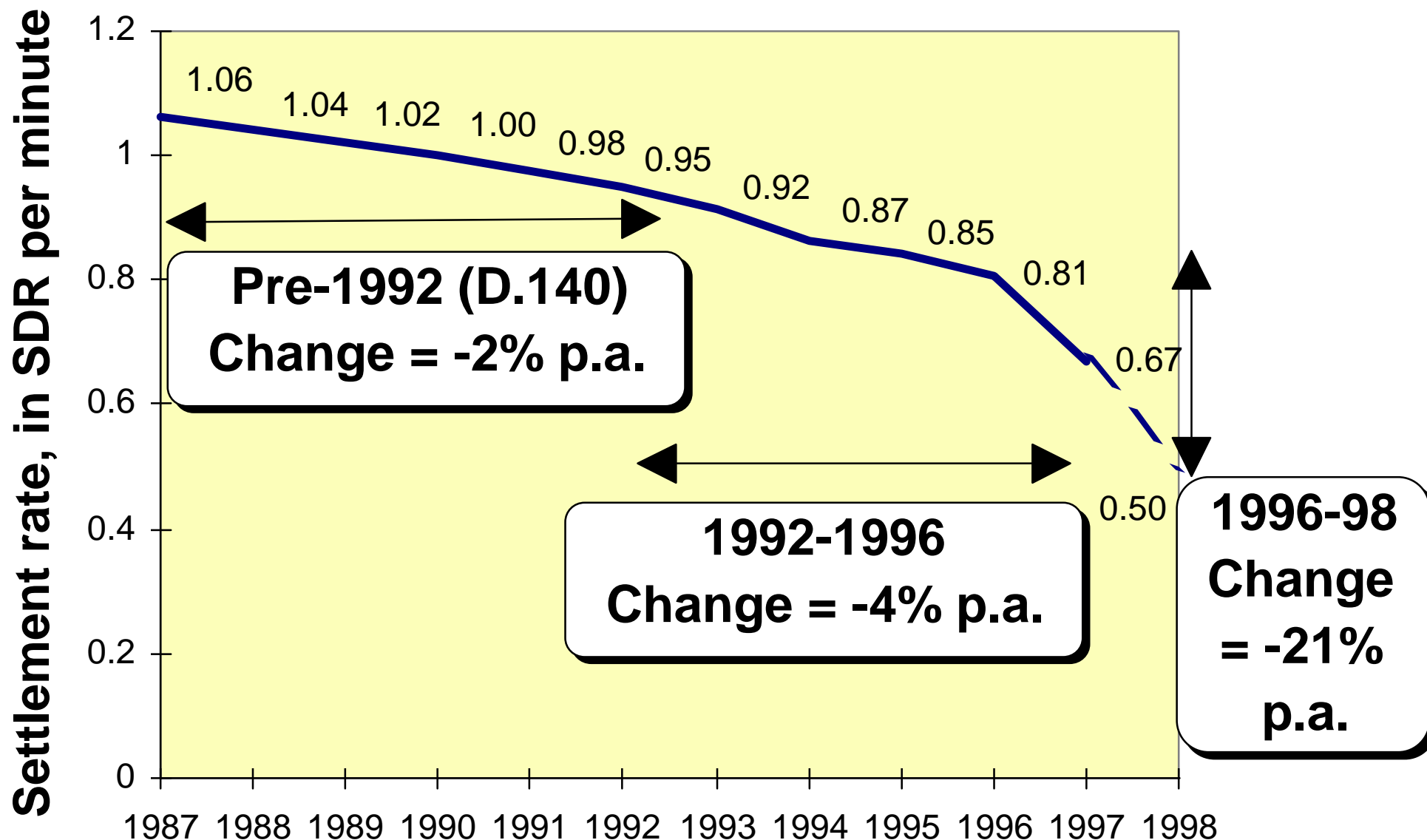
- **Negotiated bilaterally**
 - ⇒ **major operators have 200+ correspondent relations**
 - ⇒ **smaller operators use other transit operators**
- **Revenues are shared 50:50**
 - ⇒ **By implication, costs are assumed to be same**
- **General framework established by International Telecommunication Regulations & ITU-T Recommendation D.140**
- **Accounting rates excluded from WTO basic telecommunications agreement**



How are accounting rates currently implemented?

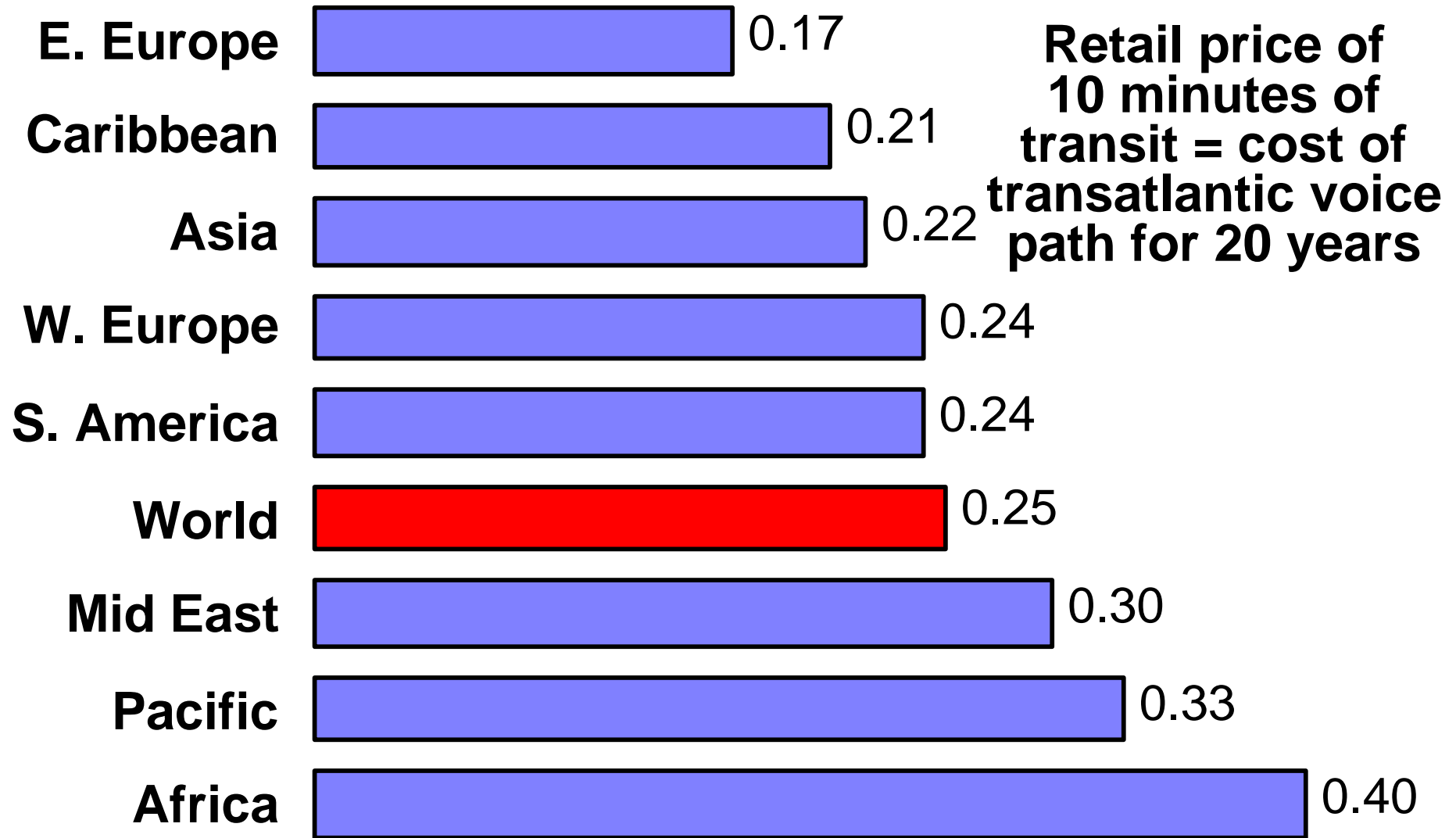
- **Four main existing options (D.150):**
 - ⇒ **Flat-rate price procedure (rare)**
 - ⇒ **Traffic unit price procedure (rare)**
 - ⇒ **Accounting rate revenue-division (common)**
 - ⇒ **Sender-keeps-all (rare)**
- **US International Settlements Policy**
 - ⇒ **50/50 split**
 - ⇒ **parallel rates among US carriers**
 - ⇒ **proportionate return of traffic**
- **Regional agreements (e.g., TEUREM, TAS)**

Global average settlement rates, in SDR per minute: *Accelerating rate of decline*



Source: ITU-T Study Group 3 (COM 3-53). 1998 estimate is a minimum projection based on D.140 Annex D.

But transit rates remain very high.
Transit rates from US in US\$ per minute



Note: These rates are based on the average revenue per minute derived from transit operations.
Source: Adapted from FCC Common Carrier Statistics Yearbook.

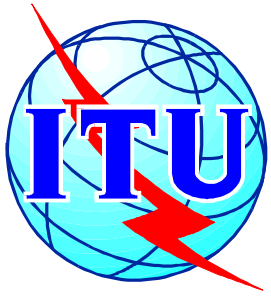
Market realities and developing country fears concerning accounting rates

If the rate of reduction is too low ...

- **Traffic will migrate to “least cost routes”**
- **Increasing volumes of traffic will flow outside the accounting rate system (e.g., via Internet)**
- **Local consumers will not benefit from lower call charges**
- **Foreign correspondents may refuse to pay for traffic terminated**

If the rate of reduction is too fast ...

- **There may be a sudden reduction in the volume of net settlement payments**
- **This may reduce the ability of the incumbent operator to finance its network build-out**
- **It may reduce the value of the operator ahead of possible privatisation**
- **National tariffs may need to increase to compensate**



An alternative approach: call termination charges

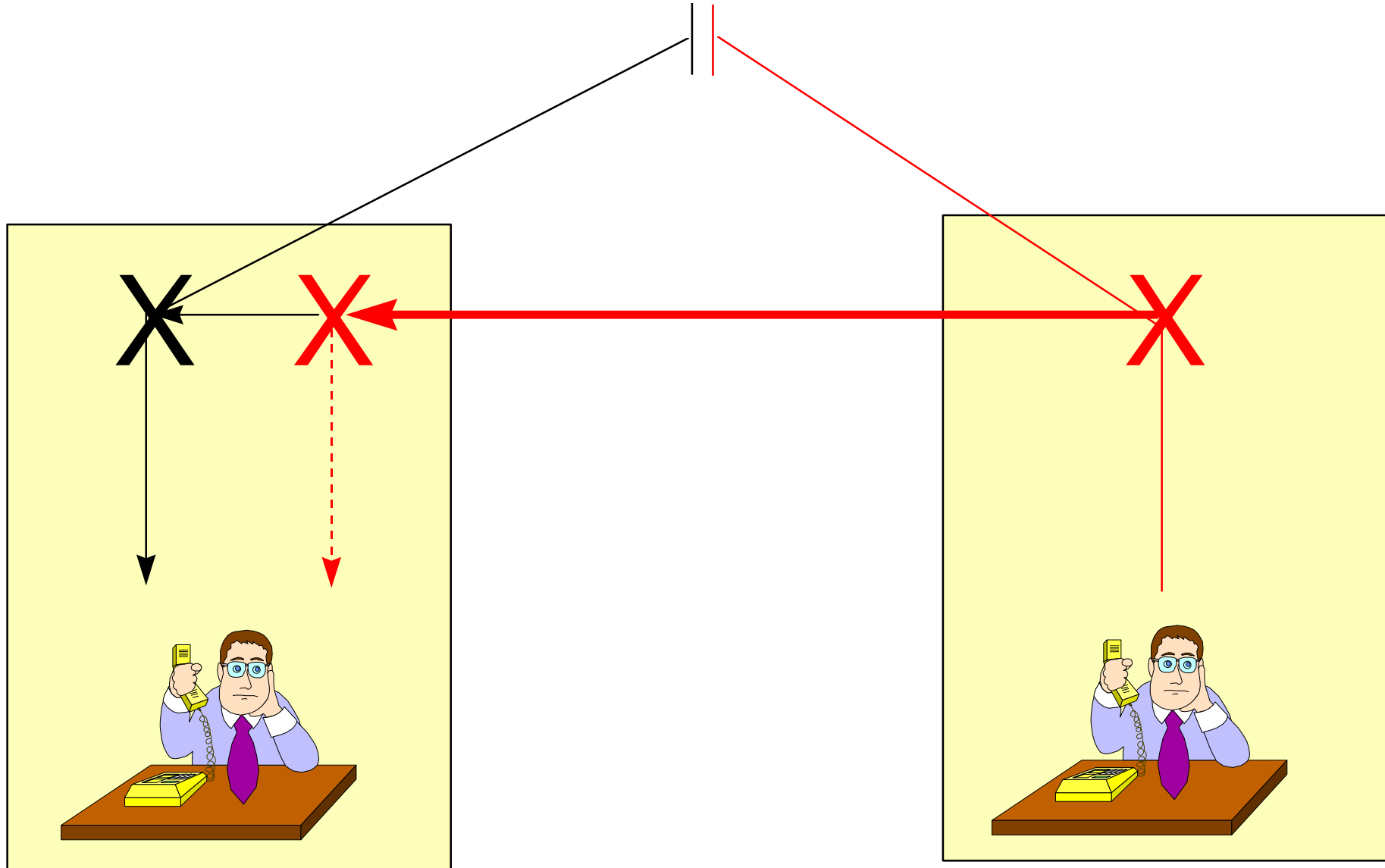
In a monopoly environment:

“a single charge applied to all incoming traffic under a traditional half-circuit regime, applied in a cost-oriented, non-discriminatory and transparent manner”

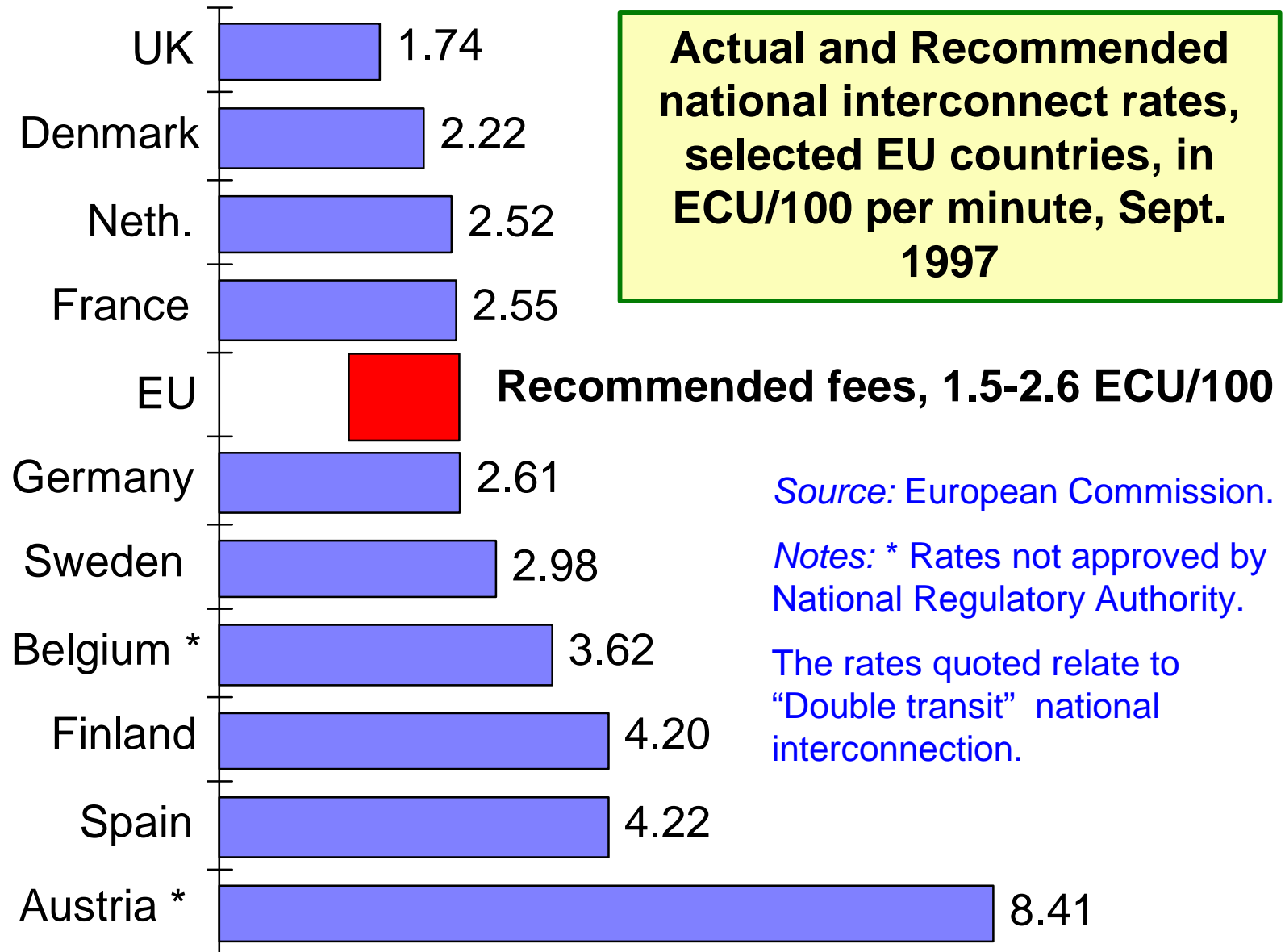
In a competitive environment:

“an unbundled termination charge broken down into the basic cost elements of international transmission, international gateway and national extension, and possibly an element of subsidy.”

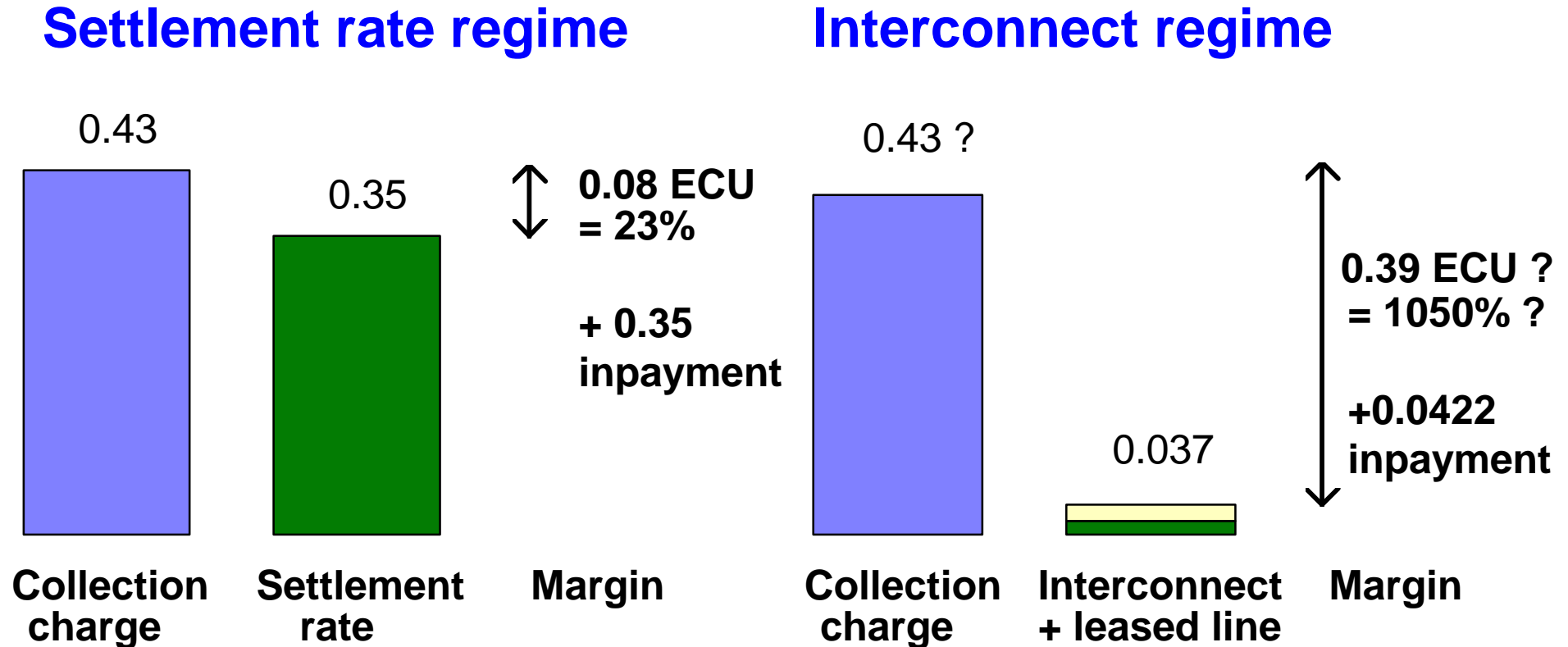
Emerging regime: Market entry and interconnection



Within EU, an interconnect regime is being implemented which is asymmetric

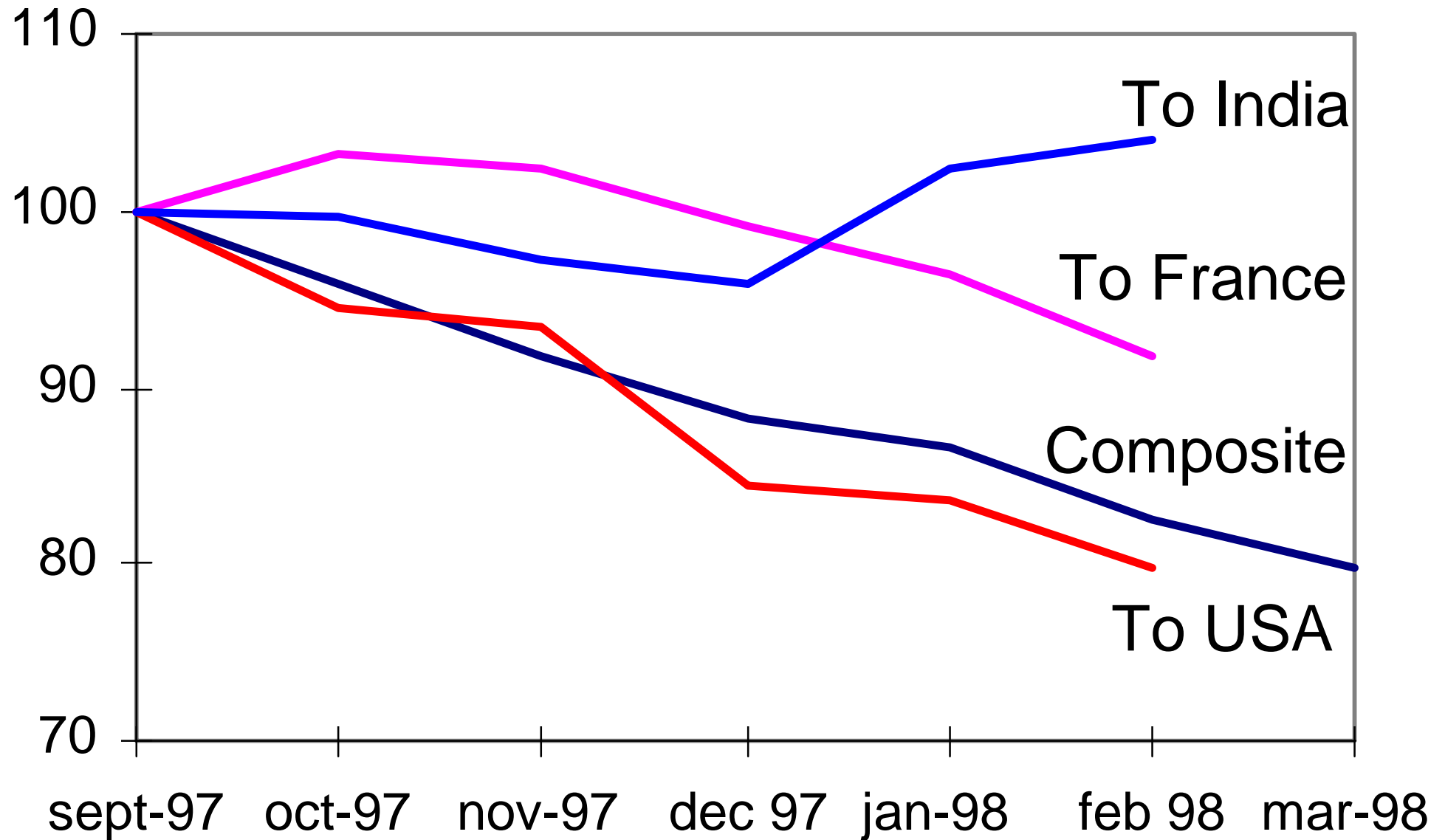


In the EU, interconnect fees are much lower than existing settlement rates



Note: The figures relate to the per minute retail and wholesale cost of a telephone call from Spain to the United Kingdom made under the existing settlement rate regime and a future interconnect regime.

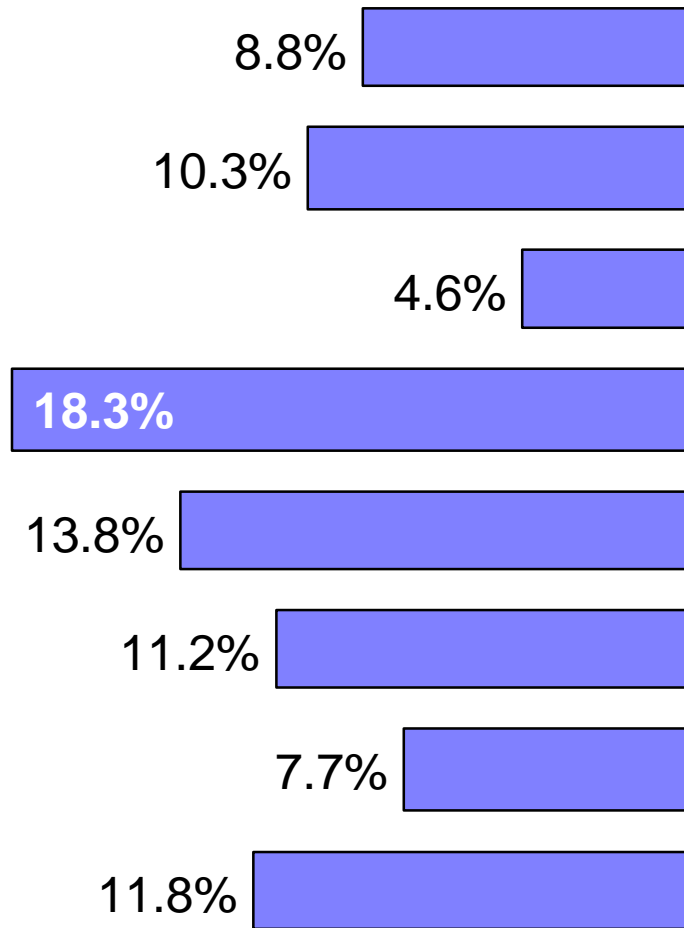
There is also a developing market in traded minutes: Spot-market prices from UK



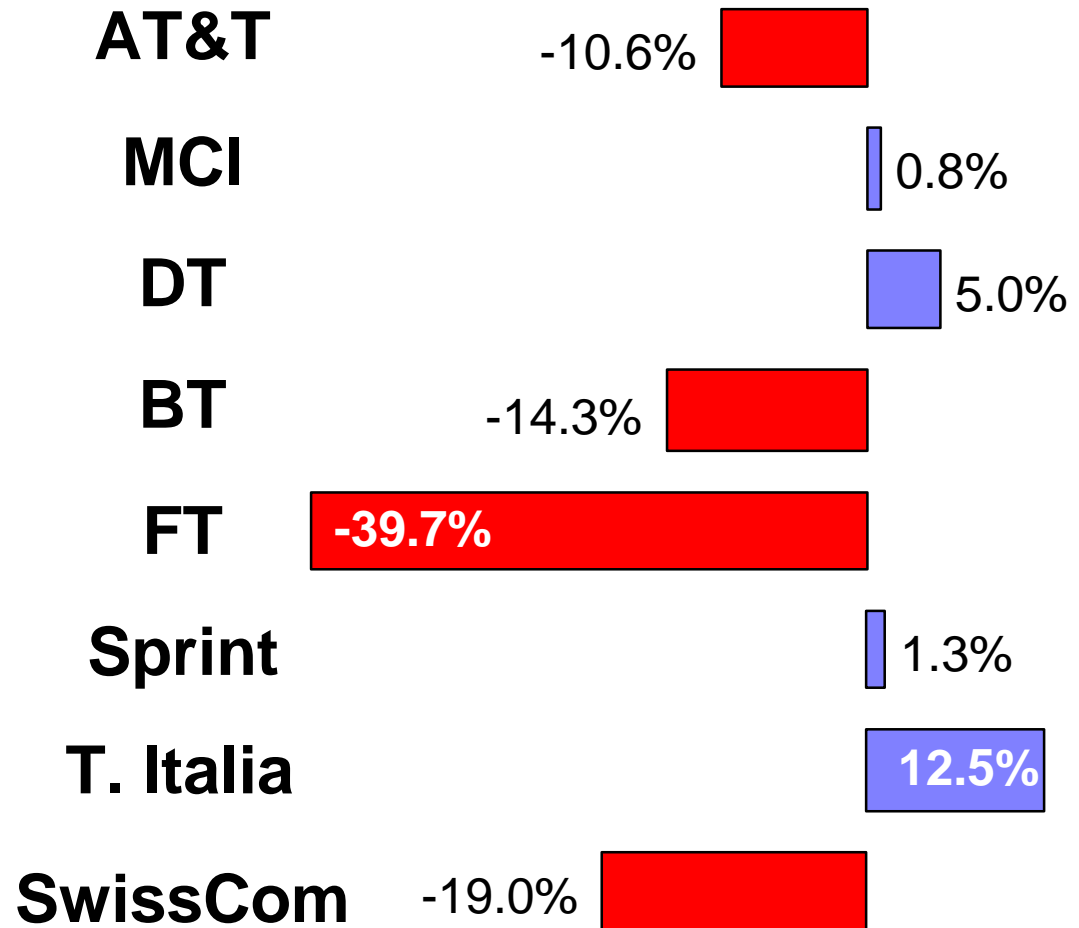
Source: Band-X. September 1997 = 100.

Top 8 international carriers, 1996/97

Growth in traffic



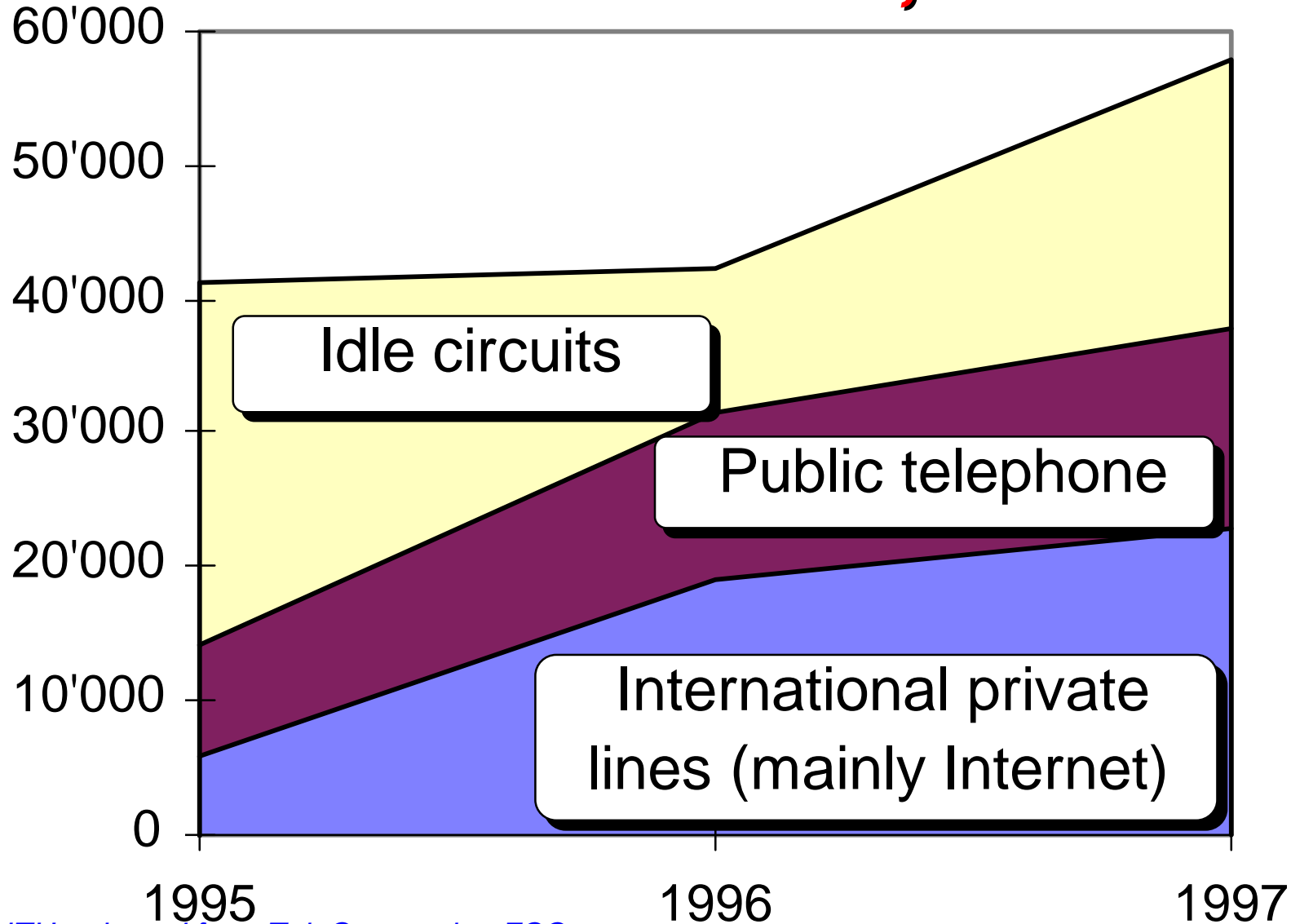
Change in int'l revenue



Source: ITU, TeleGeography Inc.

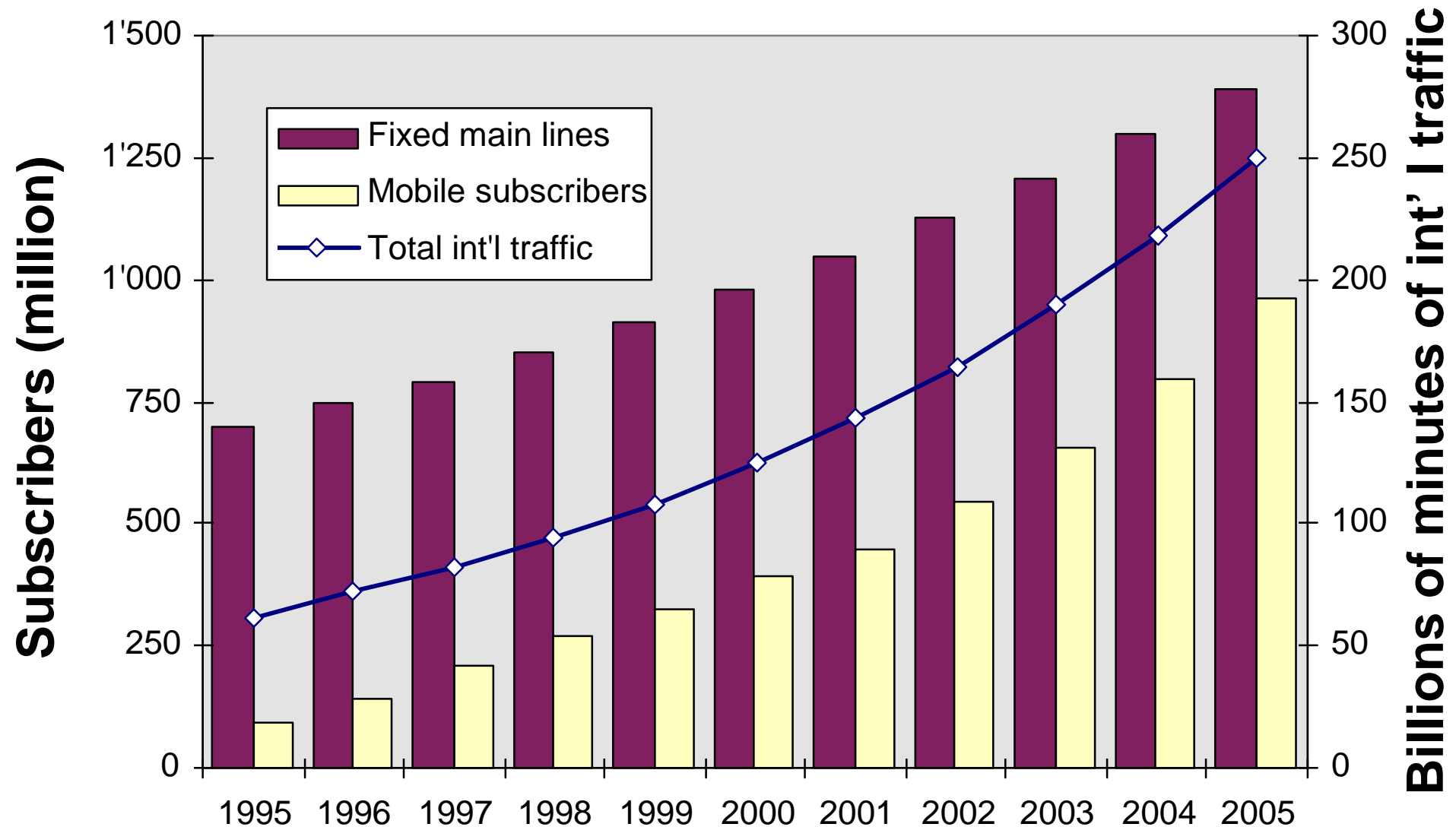
Note: Revenue change is based on dollar figures and may be different if expressed in local currency.

Internet taking an increasing share of international network capacity. Usage of int'l circuits between US & UK, 1995-97

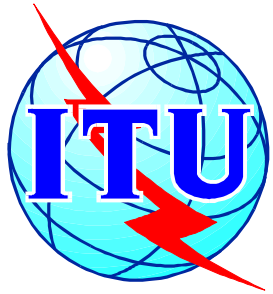


Source: ITU, adapted from TeleGeography, FCC.

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



Source: ITU.



The int'l telecoms market in 2005: Some educated guesses

- **The premium of an international call over a domestic call (currently >300%) will be <20%**
- **Traffic flows will be dictated by a small number of hubs connected to multiple fat pipes**
 - ⇒ **Major hubs in New York, London and Hong Kong?**
- **By 2001, less than 10% of int'l traffic will use accounting rate system**
 - ⇒ **Domestic interconnect fees will be dominant mode**
- **Major price cuts in international calls after 2002/2003**
 - ⇒ **Availability of new infrastructures**
 - ⇒ **Impact of Internet pricing model**