

**INTUG**

**Managing QoS, Bogota 5 xi 2004**  
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# Quality of service

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**ASUCON**

# INTUG content

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- about INTUG
- information
- billing
- service and SLAs
- regulation
- conclusions

# INTUG what is INTUG?

- members
  - national associations (e.g., ASUCOM)
  - corporations
  - individuals
- activities
  - ITU and WTO
  - OECD
  - APEC TEL, CITEL  
and the European Union

# INTUG our aims

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- real and effective competition
- genuine choice for users
- lower prices
- higher quality
- more innovative services
- constructive co-operation with
  - international bodies
  - governments
  - regulators

# INTUG priorities

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1. open access to global mobile networks
2. regulatory best practice
3. liberalization
4. universal access
5. broadband
6. leased lines
7. IP telephony
8. numbering

# INTUG Quality of Service (QoS)

- end-to-end network service at all times
- much more important because of:
  - the range of new services
  - the diversity of offers
  - the need to chose between competing offers
  - the need to evaluate performance of contracts
  - the complexity of inter-working of networks
  - the need for a network security
  - the move towards ubiquitous networks
- regulation of services and offers

# INTUG QoS bodies

- International Telecommunication Union (ITU-T)
- International Organization for Standardization (ISO)
- Internet Engineering Task Force (IETF)
- European Telecommunications Standardization Institute (ETSI)

# INTUG QoS issues

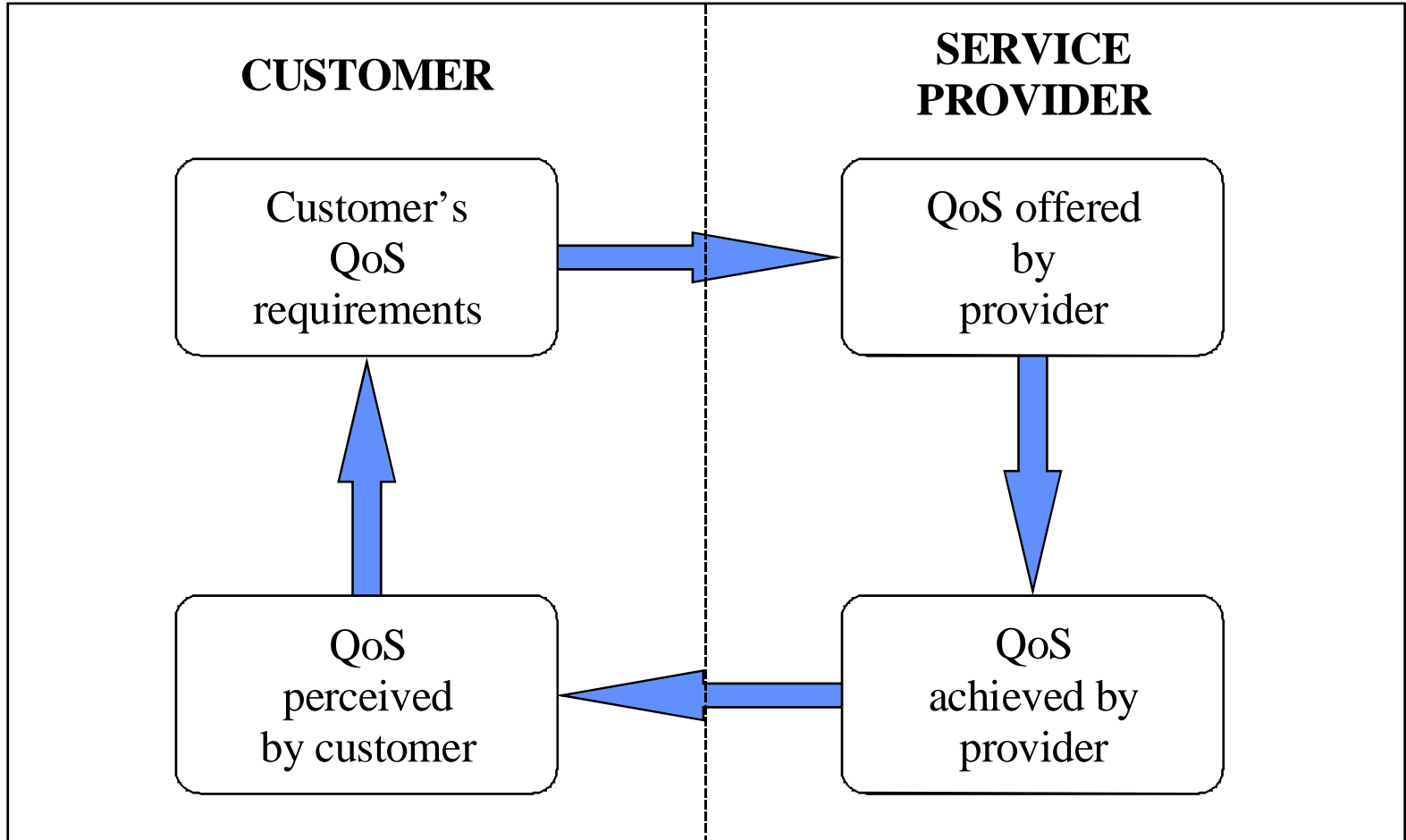
- inaccurate publicity materials and invoices
- GSM coverage claimed but never delivered
- SMS sent and billed, but not received
- ADSL:
  - speeds quoted but not delivered
  - unspecified but high contention ratios
  - ports blocked
- IP managed services
- VoIP with non-traditional performance
- bundling of VoIP, ADSL and TV
- spam delivered without being asked



# INTUG customers and QoS

- not the best imaginable quality, but:
  - features meeting user expectations at an agreed price
  - by a service provider committed to a pre-determined level of performance (technical, customer support and billing)
- defined in a contract and/or licence
- evaluated against criteria such as:
  - speed
  - accuracy
  - availability
  - reliability
  - security
  - simplicity
  - flexibility

# INTUG



# INTUG perceptions of quality

- surveys of operators and vendors
- surveys by consultants and specialists
  - technologies
  - services
  - brands
- surveys by user groups:
  - UK CMA Annual Survey
  - France AFUTT <<observatoires>>

# INTUG France - problems Sept 2004

1. Connexion impossible (*Internet*)
2. Résiliation de contrat (*Internet*)
3. Résiliation anticipée sur les contrats (*Mobile*)
4. Facturation : kiosque (*Fixe*)
5. Présélection non sollicitée (*Fixe*)
6. Résiliation de contrat (*Fixe*)
7. Erreurs de facturation (*Mobile*)
8. Résiliation de contrat (*Mobile*)
9. Erreurs de facturation (*Internet*)
10. SAV - ligne coupée (*Fixe*)

# INTUG prices

- affordability is a major consumer issue
- the QoS aspects are:
  - availability of information
  - comprehensibility
- tariff comparisons provided in:
  - consumer magazines
  - reports by consultants
  - specialist benchmarking services
- regulation where there is abuse of dominance (e.g., leased lines)

# INTUG choice and QoS monitoring

- if the QoS data are available for a range of providers then the customer can choose the “best” offer
- users can trade off QoS and price
- business customers require Service Level Agreements (SLAs)
  - which must be enforceable in court
- monitoring the real QoS provided

# INTUG billing issues

- long history of:
  - inaccurate billing
  - incomprehensible and incompatible formats
- network errors:
  - signalling and routing errors
  - failed connections
- computational errors :
  - signalling
  - timing
- attribution to the wrong customer account
- discrepancies with published or contracted tariffs
- mobile operators adding electronic payments
- increasing problems of “scams”

# INTUG possible improvements

- internal process controls:
  - certification of counting-validation process
  - internal sampling control
  - claim monitoring and feedback
- external audits:
  - accounting
  - control on real communications
  - control on test samples
- standardization
- regulation
  - including mandatory publication



# INTUG parameters

- accounting:
  - absence of “ghost” communications
  - completion of the communication to the requested recipient
  - actual duration
  - charging to the actual account
- validation:
  - no error on validation parameters
  - no error on tariffs :
    - fixed, mobile, cards
    - data (Internet fixed & mobile, SMS, MMS, etc)
    - third party billing

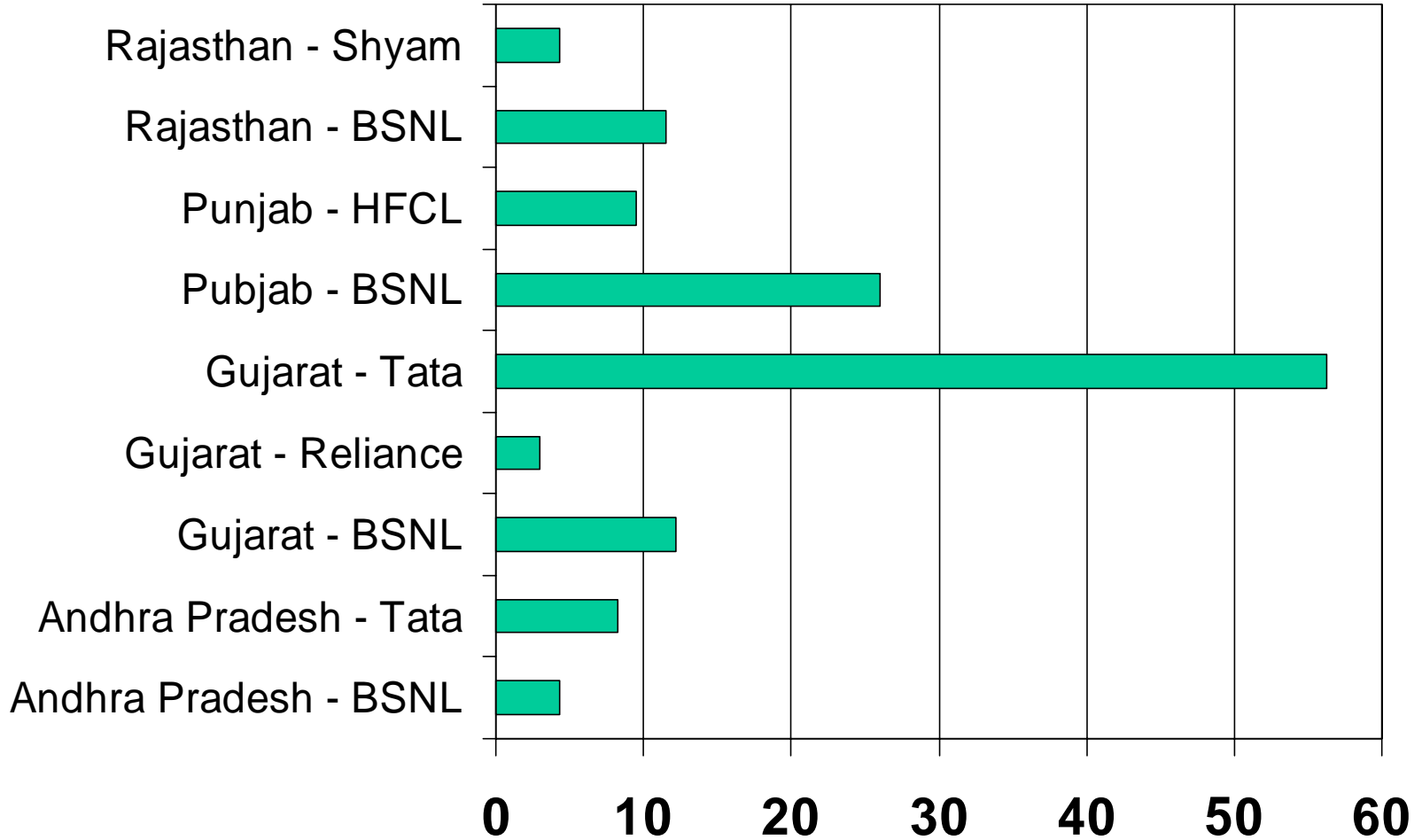
# INTUG regulation

- specification of:
  - QoS data
  - format and time of publication
- in order to:
  - ensure compliance with licences
  - facilitate comparisons
  - ensure market is working properly
- mandatory publication

# INTUG India - MTTR

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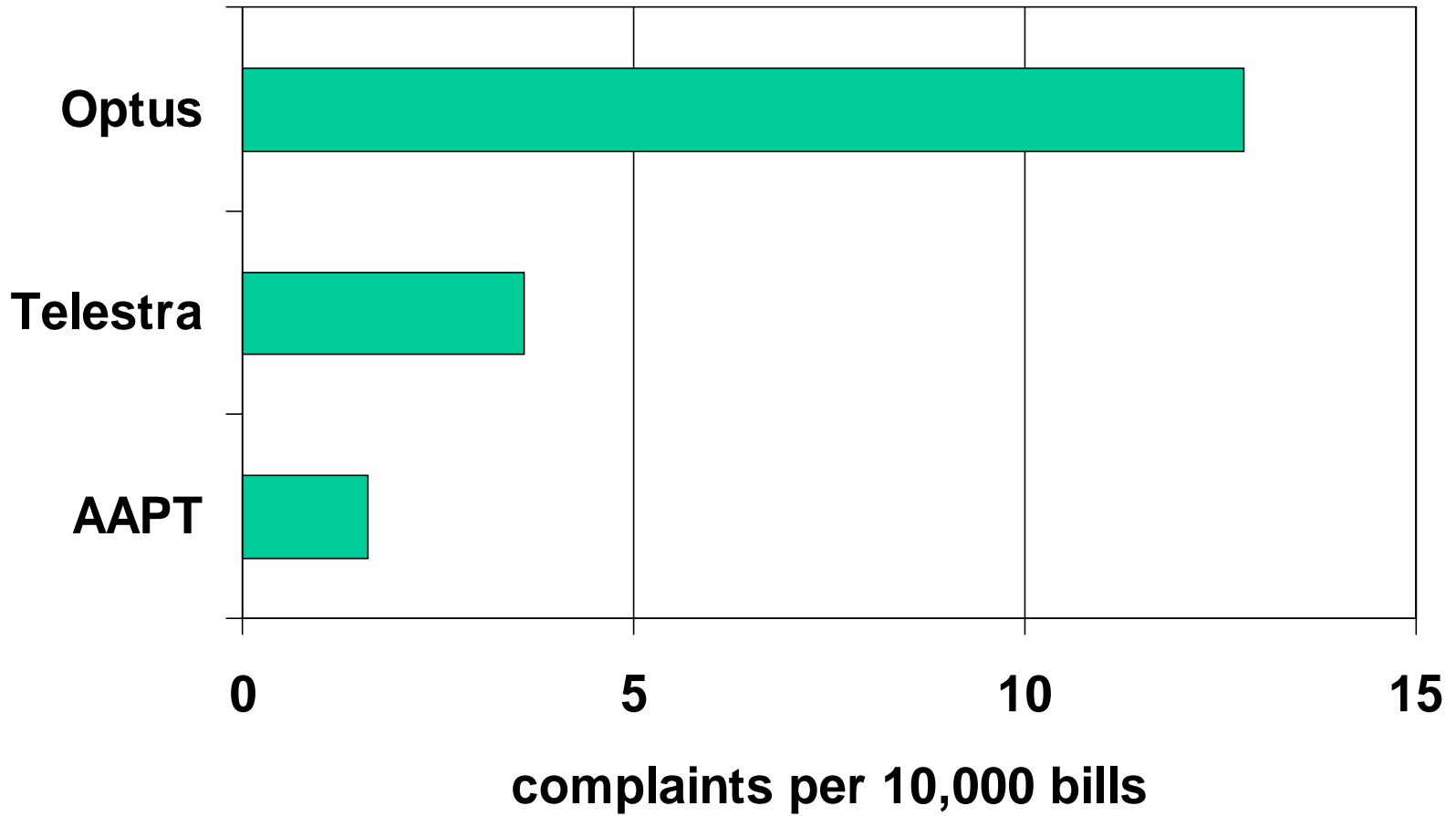
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Source: TRAI

# INTUG Australia - billing errors

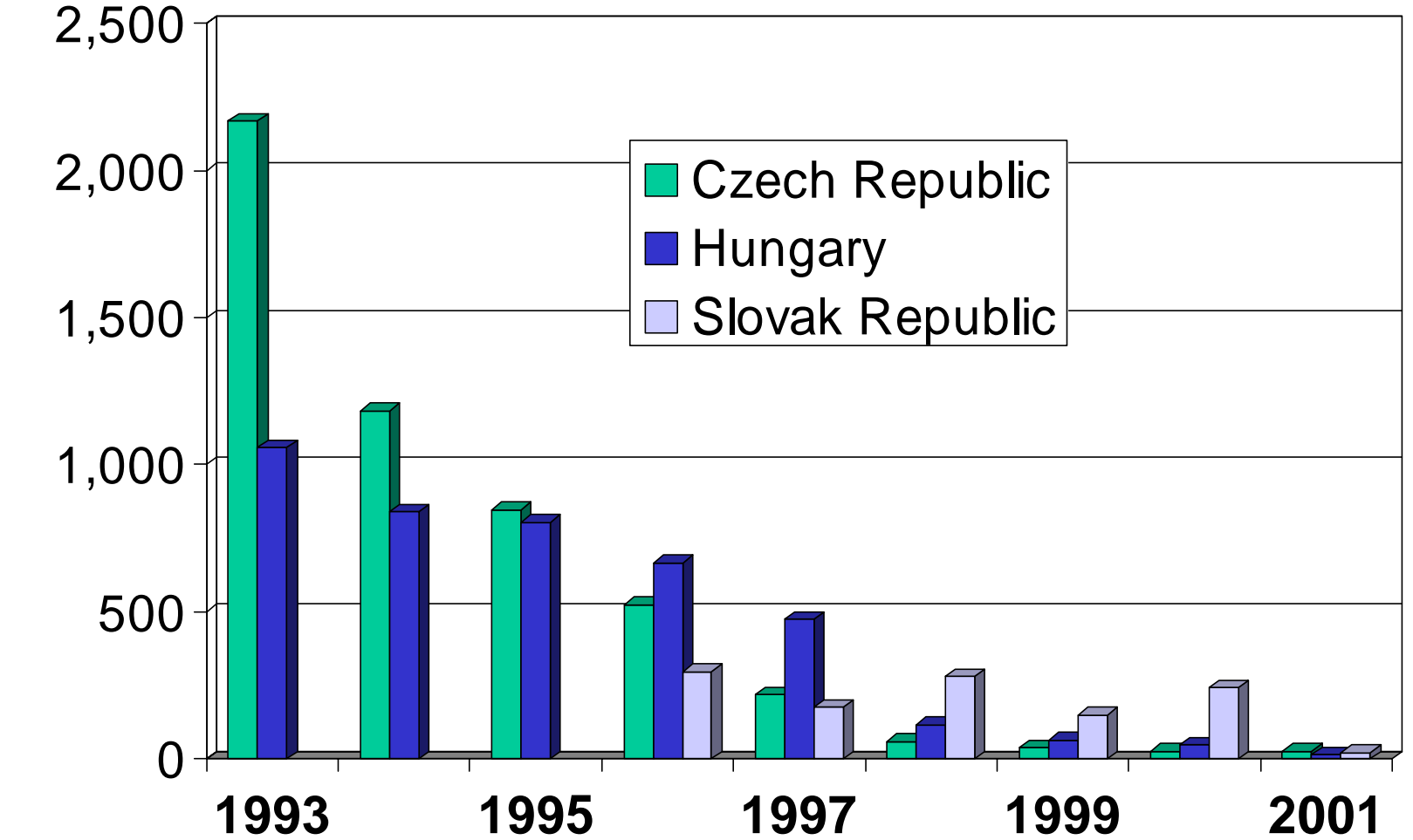
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Source: ACA  
Telecoms performance report.

# INTUG **Waiting for a phone**

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Source: OECD.



# INTUG European Union

- Universal Service Directive
  - publication of QoS results by NRAs
  - parameters, definitions and measurement methods.
- Framework Directive
  - list of standards and specifications for the provision of telecommunication services
- national transpositions into regulations

# INTUG EU QoS parameters

- supply time for initial connection
- fault rate per access line
- fault repair time
- unsuccessful call ratio
- call set up time
- response times for operator services
- response times for directory enquiry services
- proportion of coin and card operated public pay telephones in working order
- billing correctness complaints

# INTUG EU - leased lines

- long standing benchmark prices
- also publication of the provision of leased lines to new entrants:
  - delivery period
  - repair time
  - service availability
- publication had immediate effects on countries that were performing poorly



# INTUG number portability

- prerequisite for a competitive market
- important QoS parameters
- provision of information
- complexity of process
- comparisons between countries
  - average number of days
  - average number of ported numbers

# INTUG conclusions

- complex issues:
  - sometimes unnecessarily so
- information is essential:
  - for business and personal customers:
    - to select the most appropriate service
    - to enforce contracts
  - for regulators
    - to ensure quality thresholds are met
    - to benchmark with other countries
    - to compare operators and regions

# INTUG thank you

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