Revising the ITRs:

A View from the other Side of the Mirror

J. Scott Marcus

Director, WIK-Consult GmbH

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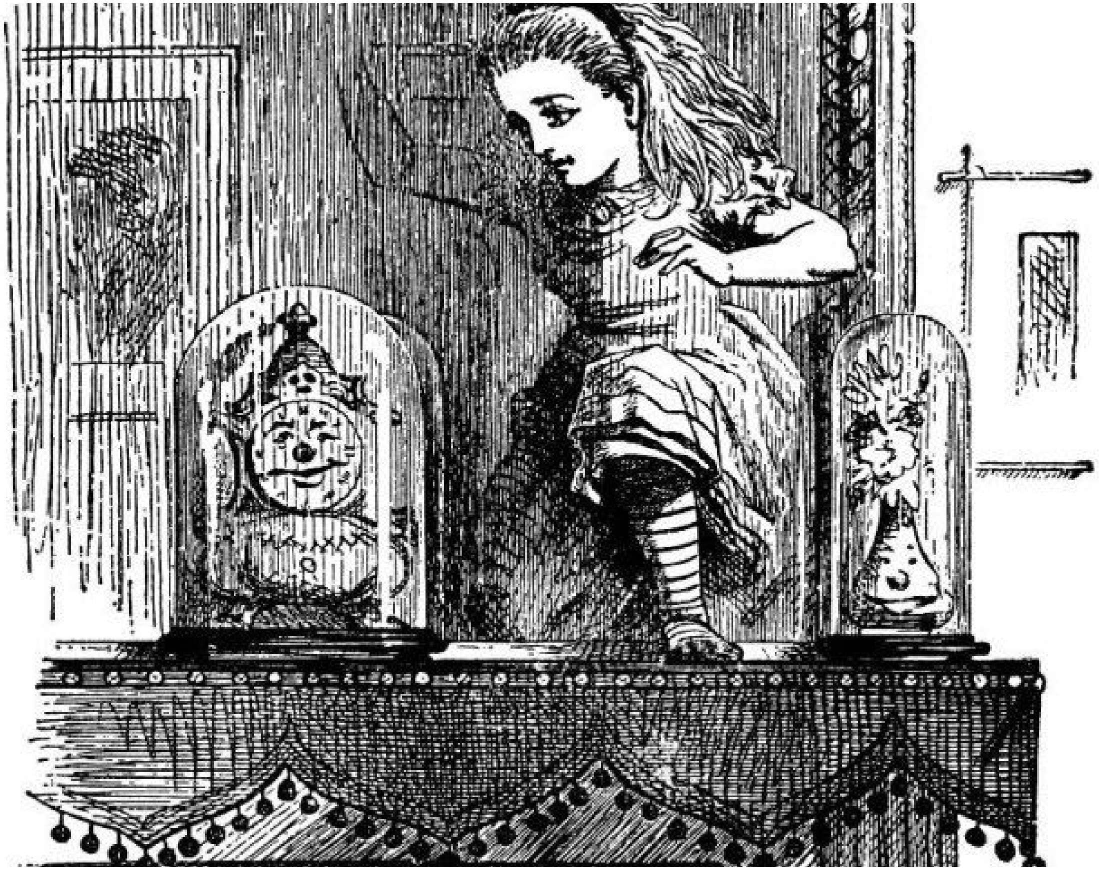


Through the Looking Glass,
and what Scott found there

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

A view from the other Side of the mirror

- The ITRs have been fairly effective to date in dealing with voice telephony, largely because they provide a flexible framework that is not more intrusive than is needed to deal with the limited number of voice telephony issues that they address.

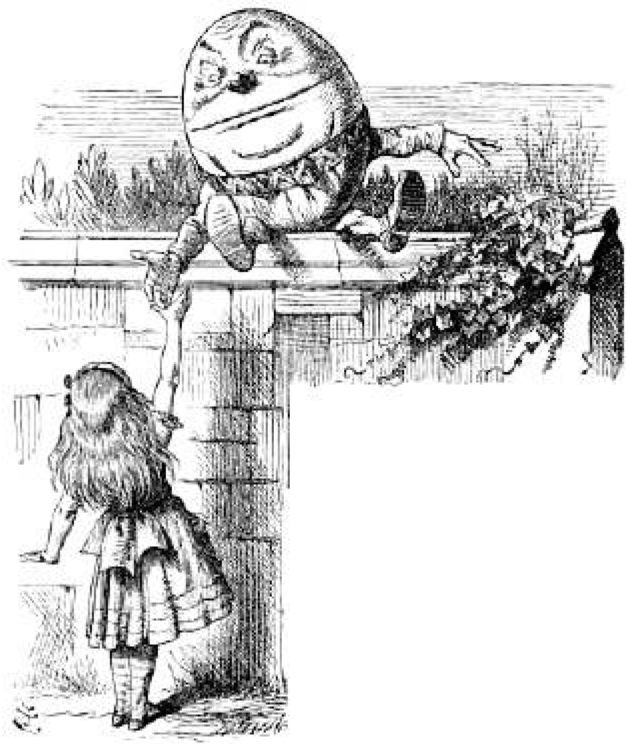
- A quite huge number of changes have been put forward.
  - Many of these serve to expand the ITU's authority, and to bring entities within the reach of the ITRs (and more generally the ITU) that historically were in one way or another exempted.
  - Some create new interconnection obligations that in our judgment are ill-advised.
  - Others extend the scope of the ITRs to deal with policy areas (including security, and child protection) that are normally dealt with in other fora, and in other ways.

What limits to authority are appropriate?

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

Historic ITU/ITR treatment of voice and data

- In terms of both technical standards and governance, the relationships and linkages between the Public Switched Telephone Network (PSTN) and the Internet are more complex and nuanced than many appreciate.
- Many technical standards are relevant to the Internet, some of which originate with the ITU.
- The ITRs have, however, never been applied to interconnection of data communications (including the Internet).
- The conscious decision not to impose explicit ITR guidelines on data services provided an ecosystem in which the Internet could develop, evolve, and innovate.



"When I use a word," Humpty Dumpty said, in rather a scornful tone, "it means just what I choose it to mean—neither more nor less."

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

Words matter

- The ITRs historically applied to “administrations or recognised operating agencies”.
  - A “recognised operating agency” provides international telecommunications or broadcasting to the public, and is recognised by the relevant national government as being subject to ITU rules.
  - A “recognised operating agency” could be either public or private.
- A proposed change to replace with “operating agency” would greatly increase the number and scope of services covered.

Many proposed changes, many implications

Affects
Parties / activitie

- Europeans should not support proposals that would not pass muster if put forward by a European institution.
  - Market mechanisms should be preferred to intervention unless a clear harm can be identified.
  - No intervention should be implemented unless it can be shown to be effective, efficient, and proportionate (i.e. no more intrusive than necessary) in dealing with the harm.
- The vast majority of the proposed changes to the ITRs that have been put forward to date fall far short of this standard.

Curiouser and curiouser …

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

Network Operators and Content Providers: Who Should Bear the Cost?

- ETNO proposal C-109:

  "Operating Agencies shall endeavour to provide sufficient telecommunications facilities to meet requirements of and demand for international telecommunication services. For this purpose, and to ensure an adequate return on investment in high bandwidth infrastructures, operating agencies shall negotiate commercial agreements to achieve a sustainable system of fair compensation for telecommunications services and, where appropriate, respecting the principle of sending party network pays."

Network Operators and Content Providers: Who Should Bear the Cost?

- ETNO has also stated (in a white paper):
  - "ETNO is not asking for increased regulatory intervention but aims to establish a reference for commercial negotiations."
  - "ETNO believes that the revised ITRs should acknowledge the challenges of the new Internet economy and the principles that fair compensation is received for carried traffic and operators' revenues should not be disconnected from the investment needs caused by rapid Internet traffic growth."
  - "The goals for the new interconnection models are: enable incremental revenues by end-to-end QoS pricing and content value pricing; …"

Network Operators and Content Providers: Who Should Bear the Cost?

- What can we say about:
  - The diagnosis on which this rests?
  - The suitability of the cure?

Network Operators and Content Providers: Who Should Bear the Cost?

- How rapid is Internet traffic growth?
- How are costs growing?
- What can we say about "fair" allocation of costs between the two sides of the market?
- How practical is content value pricing?

The perils of rapid growth in Internet traffic

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

Rapid growth in Internet traffic?

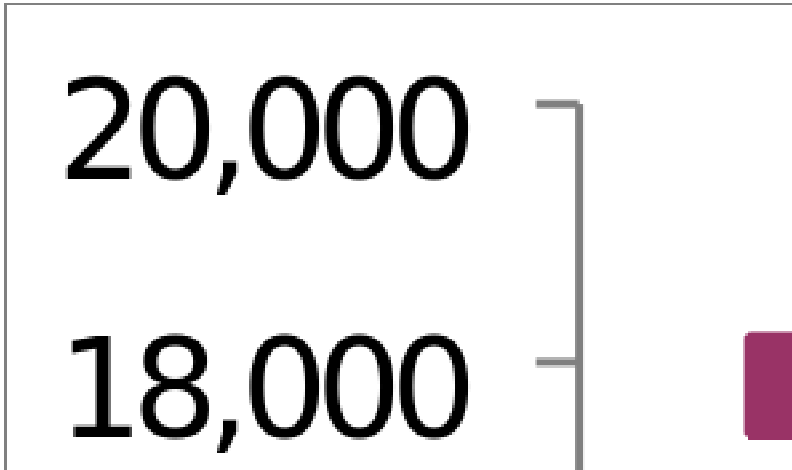
- Traffic continues to grow, but the global rate of growth in percentage terms is declining over time.

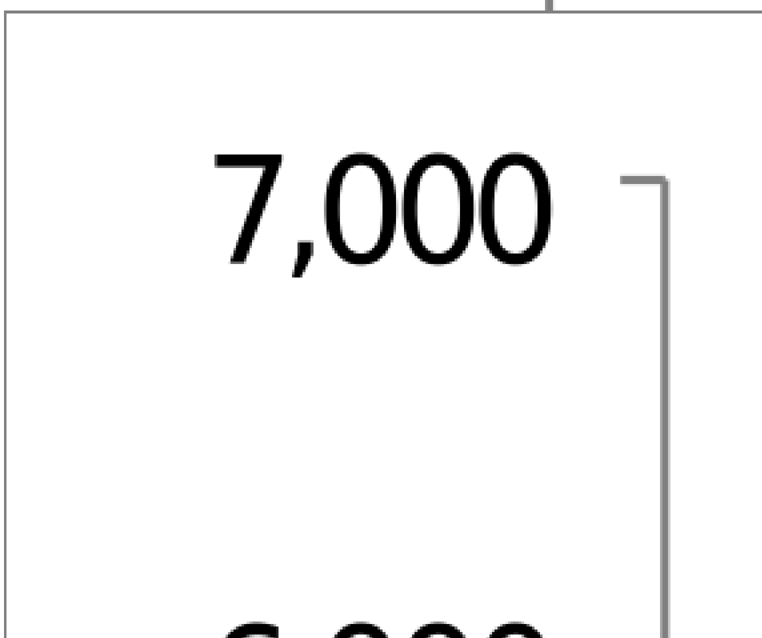
Source: Cisco (2012), WIK calculations.

Internet traffic growth drives increased investment needs

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

Rapid growth in investment needs driven by Internet traffic growth





Here we have the shipment quantities in Mbps and the price per Mbps (USD) for high end routers and for long haul DWDM optoelectronic equipment.

These are among the key cost drivers for Internet core and aggregation networks.

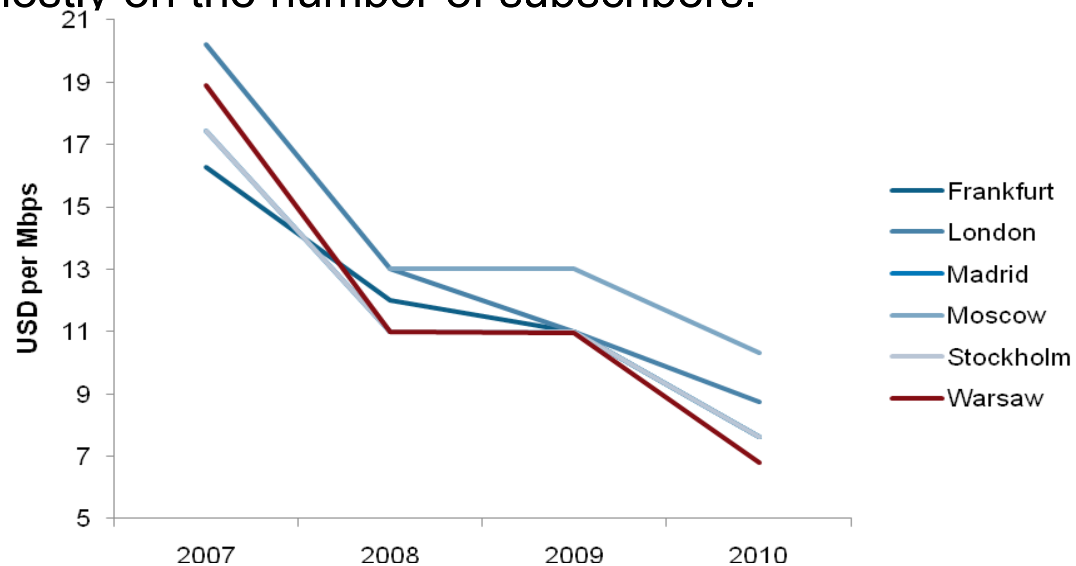
The growth in shipments generally tracks the Cisco projections.

The growth in *shipment volume* does not equate to a growth in *costs*, because the decline in unit costs is nearly in balance with it.

Source: Dell'Oro (2011), WIK calculations.

Rapid growth in investment needs driven by Internet traffic growth

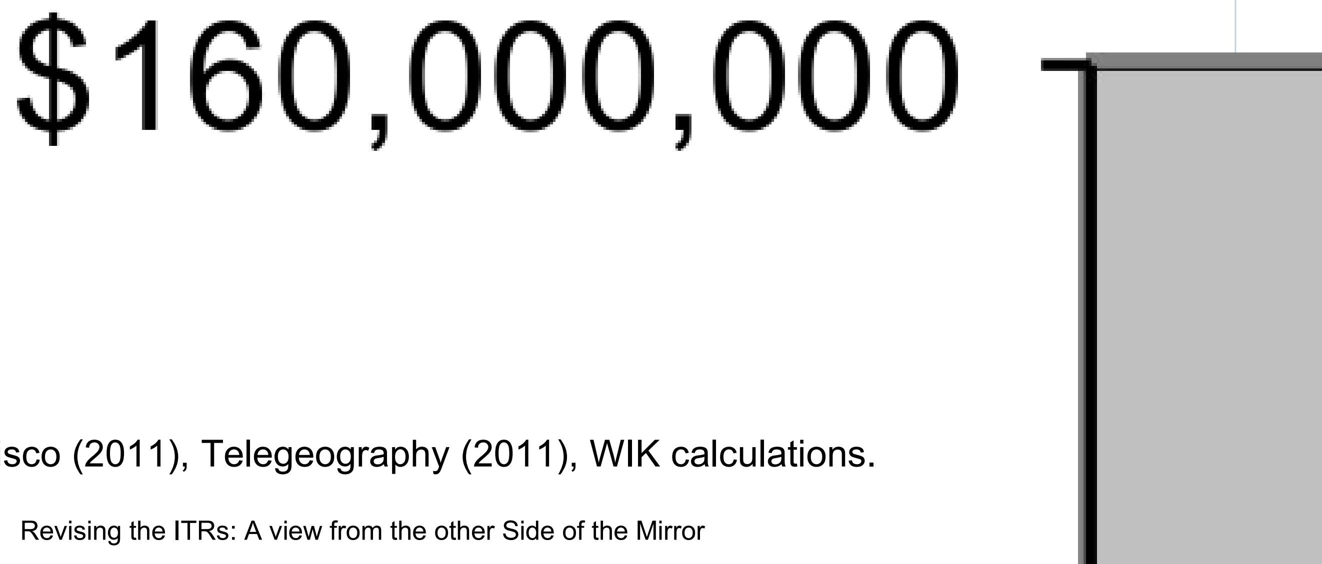
- Meanwhile, unit prices for global transit are declining rapidly.
- This decline reflects not only equipment costs but also circuits (over land and under water).
- Labour and other OPEX elements play only a small role, since they depend mostly on the number of subscribers.



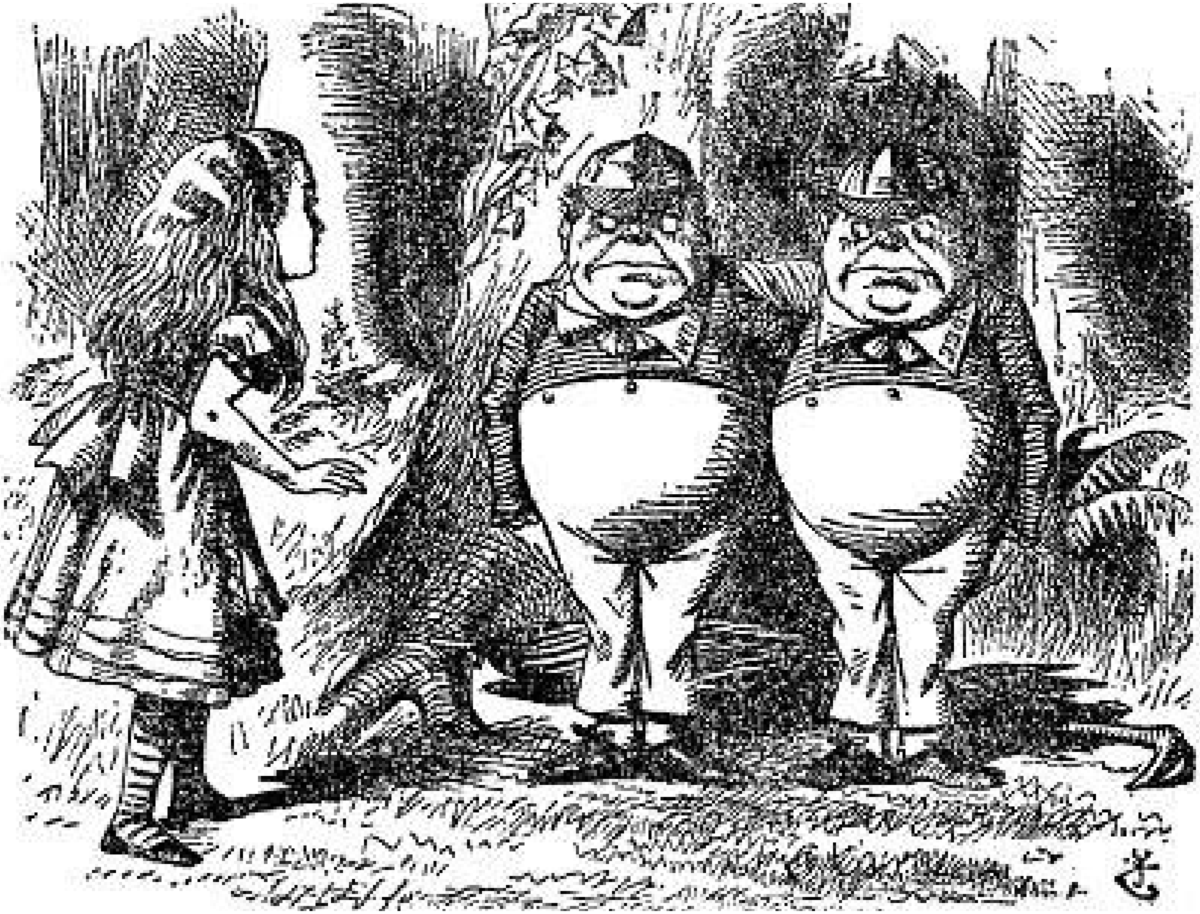
Source: Telegeography (2011), WIK calculations.

Rapid growth in investment needs driven by Internet traffic growth

- The monthly cost of carrying every bit of Western European Internet traffic, including growth, is declining (and small in any case).
- Any self-supply is presumably cheaper than buying transit.



Source: Cisco (2011), Telegeography (2011), WIK calculations.



Two-sided markets

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

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Two-sided markets

- A fairly new body of economic theory deals with two-sided markets (broadcast television, singles bars).
- The objective is to enhance societal welfare by maximizing participation and usage externalities.

Google

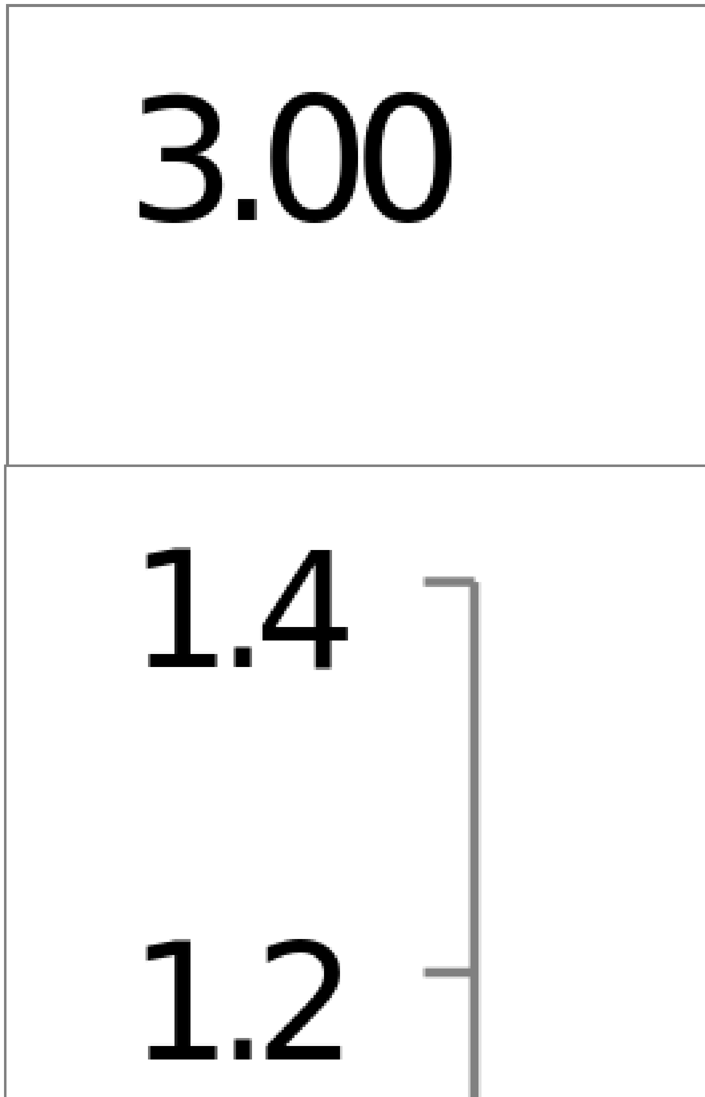
Two-sided markets: Price signals

- For many reasons, prices signals *should* be stronger to consumers than to content producers.
- Cost causation in the Internet is far more complex than in the traditional telephone network, but most decisions to consume content are made by the consumer.
- It is the consumer who decides to download a video – the content provider merely makes the content available.
- It is therefore entirely appropriate that the consumer be subject to stronger price signals than the content provider.

Two-sided markets: Price signals

- A large fraction of the cost of data transmission and receipt is associated with last mile access.
- The consumer decides how fast a broadband access is desired, and pays accordingly.
- The same is true of the content provider, but access benefits from huge economies of scale. Large content providers benefit from economies of scale in nearly all aspects of their operation.
- Once the access facility is in place, costs are largely independent of the volume of data. Truly usage-dependent costs typically represent a small fraction of the total costs of data transmission and receipt.
- For consumers to pay higher unit prices for data transmission than large content providers is not an anomaly. It is an expected and desirable result.

Two-sided markets and consumer WTP



Total fixed broadband subscriber revenue is increasing at a rate that reflects the growth in subscribership.

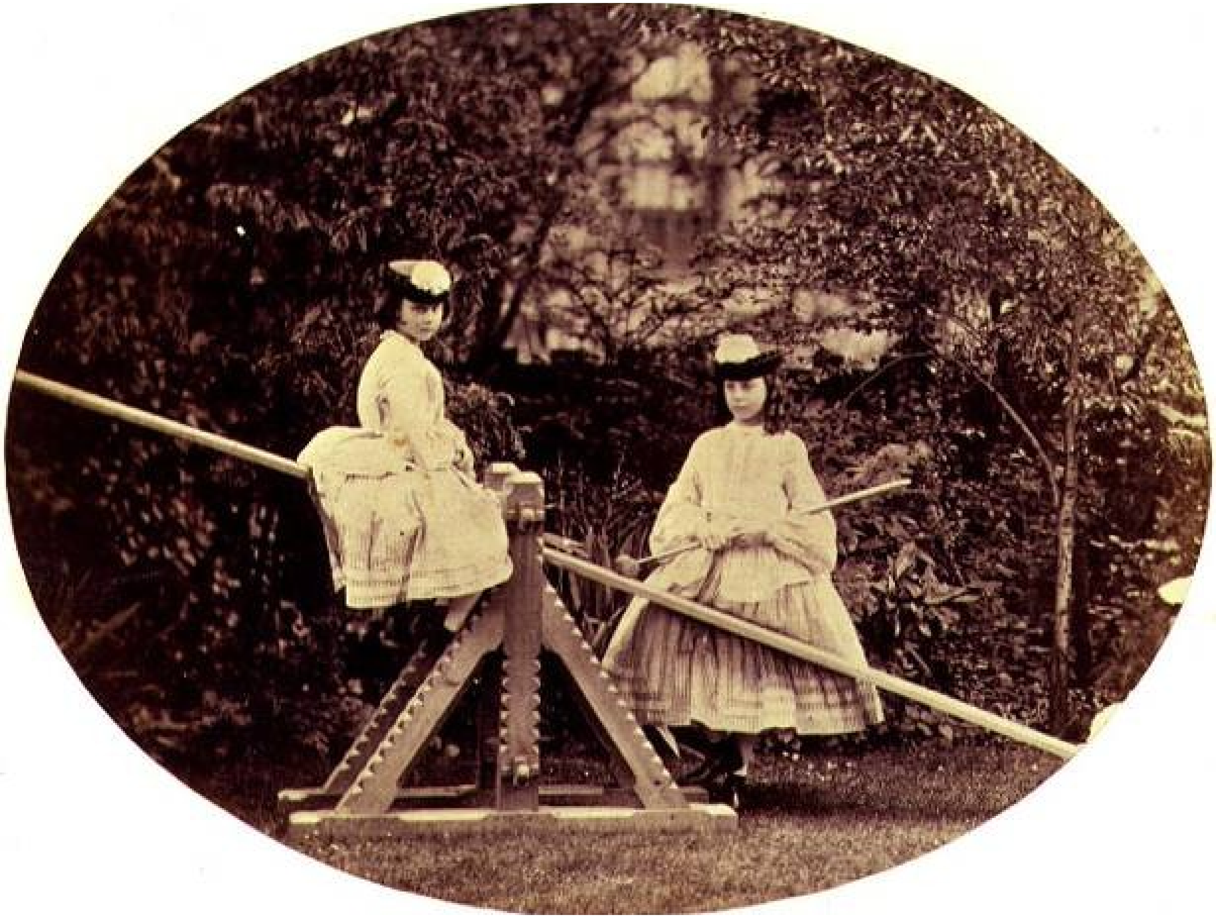
Fixed broadband subscriber revenue per subscriber (ARPU) is fairly steady.

The retail unit price is stable because underlying costs are stable.

Prices seem to move in both directions.

The end of unlimited mobile flat rates in the US demonstrates that prices can increase, even under a flat rate.

Source: IDATE data (2011), WIK calculations.



Two-sided markets: rise and fall in balance?

Alice Liddell and her sister

Two-sided Markets: balance of effects

- It is fairly clear that an increase in the wholesale payment between network operators will result in an *increase* in the retail price for *sending* traffic.
- In general, one might expect a corresponding decrease in retail prices for receiving traffic.
- Where competition is weak – as if often the case in developing countries – the net-inbound network operator will not pass the savings on to consumers.
- Sending Party Network Pays (SPNP) can result not just in welfare transfer, but also in substantial welfare loss.

Curiouser and curiouser …

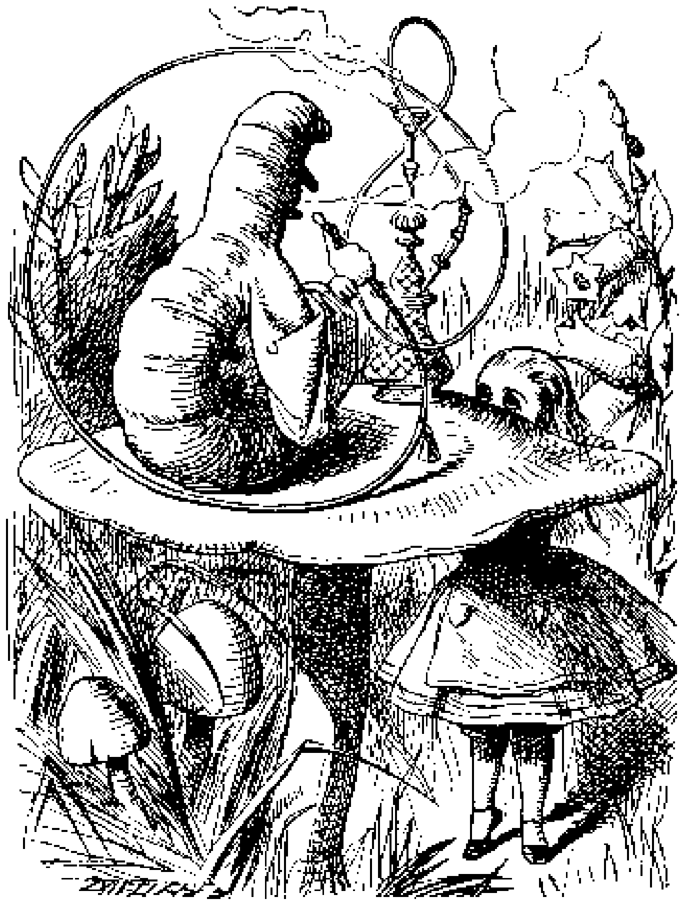
… with apologies to John Tenniel and Charles Lutwidge Dodgson.

Pricing based on the value of content carried

- “These commercial agreements are based on the value of the information, not the bits.” – interview with ETNO Chair
- Reflects a desire to return to the good old days of monopoly pricing?
  - In an effectively competitive market, pricing based on value cannot be viable.
  - Competitors would respond by gaining market share by pricing based on their cost to deliver the service.

Curiouser and curiouser …

- ETNO claims that it is seeking a commercial, negotiated outcome to enable differentiated Quality of Service (QoS) in the Internet, not a regulated solution.
- The ETNO member network operators could have implemented differentiated QoS through voluntary bilateral commercial negotiations at any time in the past fifteen years or so, with or without the support of the ITU.
- This was attempted in the US in the late nineties. There was no regulatory impediment.
- Why have ETNO members not already implemented negotiated solutions?



What on earth were they thinking?

… with apologies to John Tenniel and Charles Lutwidge Dodgson.

Concluding observations on the ETNO proposal

- The diagnosis
  - There is no market failure to “correct”.
  - If costs were truly increasing for all market players (as may be the case for mobile networks), network operators should have no difficulty in raising their prices to end users.
  - A two-sided market perspective does not necessarily suggest that there is anything wrong with current arrangements.
- The cure
  - Is this a cure?

Is there a way forward?

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wik-Consult GmbH
Postfach 2000
53588 Bad Honnef
Tel 02224-9225-0
Fax 02224-9225-68
eMail info@wik-consult.com
www.wik-consult.com