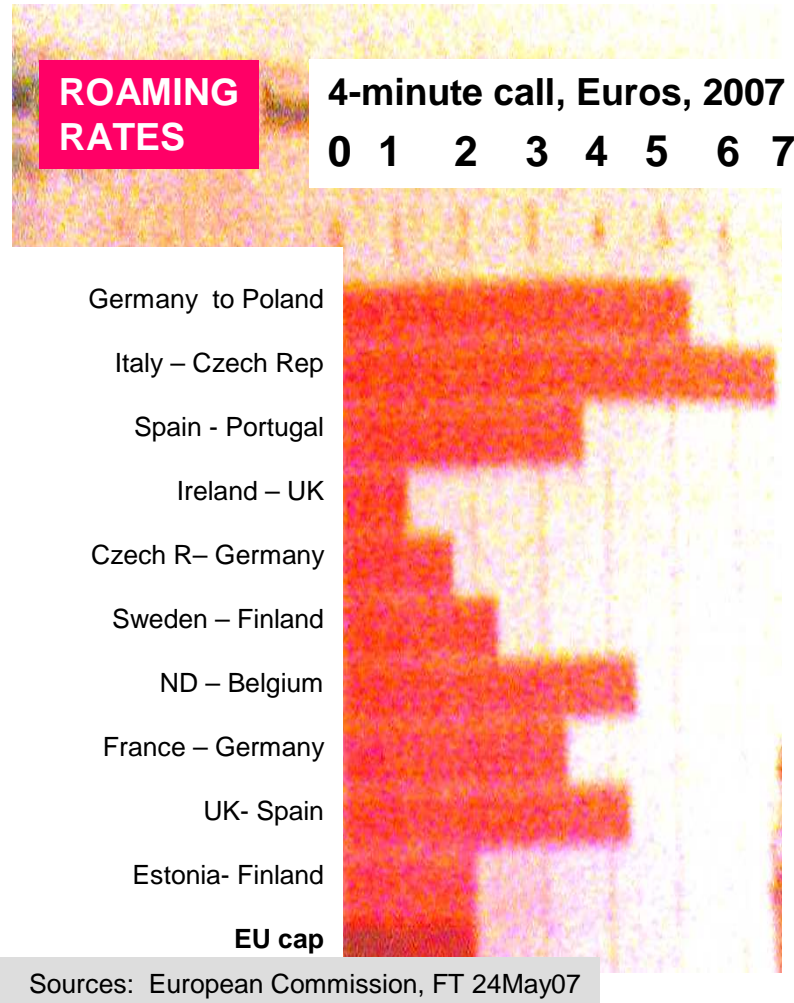


APPROACHING ROAMING CHARGES PRAGMATICALLY

Simon Forge, SCF Associates Ltd

Following a study for European Parliament's committee on Industry, Research and Energy (ITRE) with briefing for European Parliament, Jan 2007, a Technical-Economic note on Technical Aspects, Transparency, and Data and Proposed EU Regulation of Roaming, Communication 11 SEP 2013

The beginning of the end of roaming - EP vote 2007



European Parliament cut roaming rates
23 May 2007- near unanimous, capped at :-

- 0.49 Euros to make a call in EU
- 0.24 Euro/minute for incoming call
- Implemented from mid-August 2007

By July 2012:

- 0.29 Euros to make a call in EU
- 0.08 Euro/minute for incoming call
- 0.09 Euro per SMS
- 0.70 to download /browse Internet, in kB)



Does a cross-EU call
really cost so much
more than a
DOMESTIC national
call for voice or data?

Domestic Charge

- calling party pays

**Roaming
Charge**

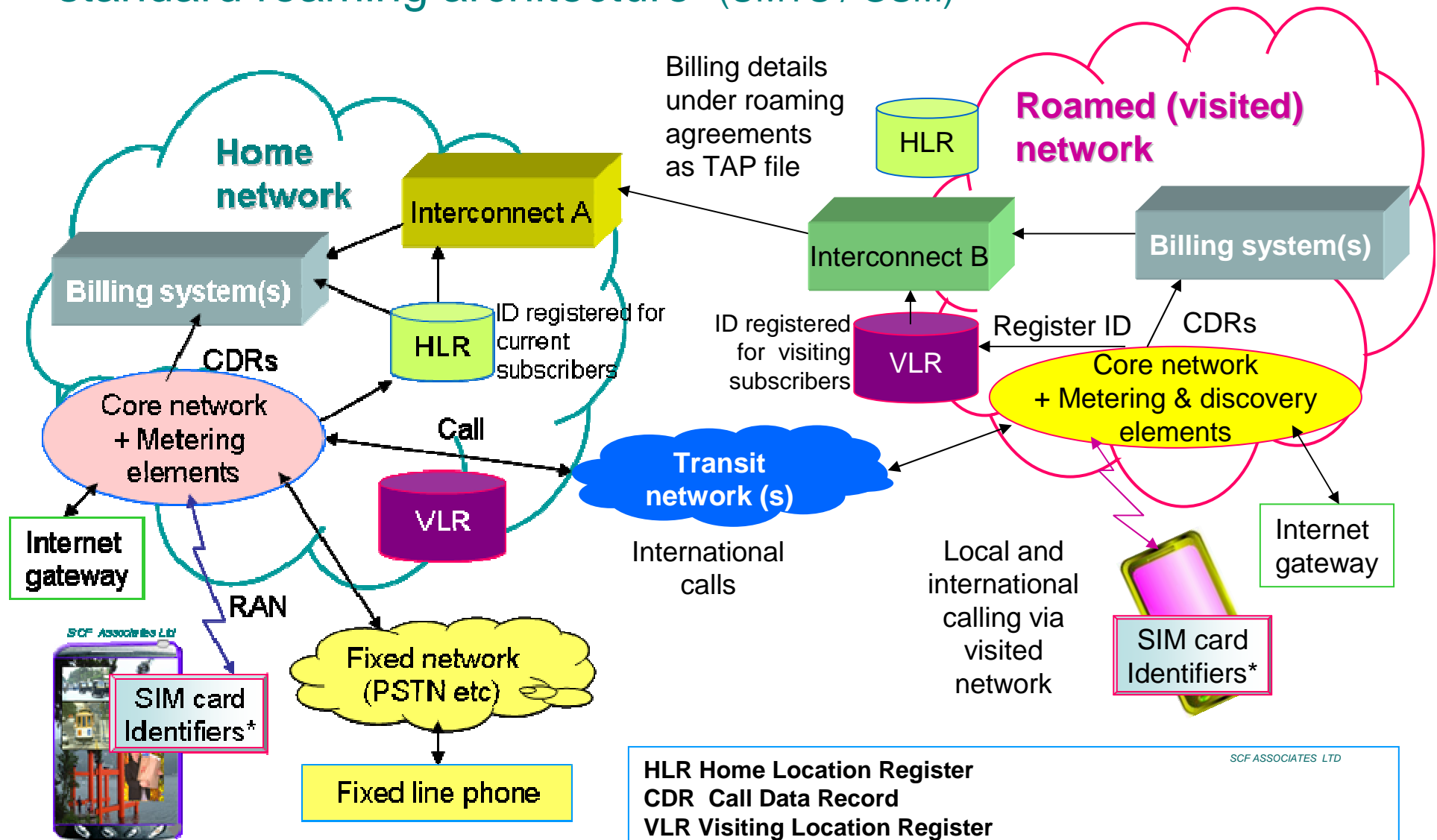
- up to 4 times
domestic or more
- both calling
and called party
pay

The cost basis for international mobile roaming (IMR) charges

- Examine using a bottom-up view of assets employed compared to domestic operations:-
 - Network assets
 - CDR management
 - Business support systems (billing and customer care assets)

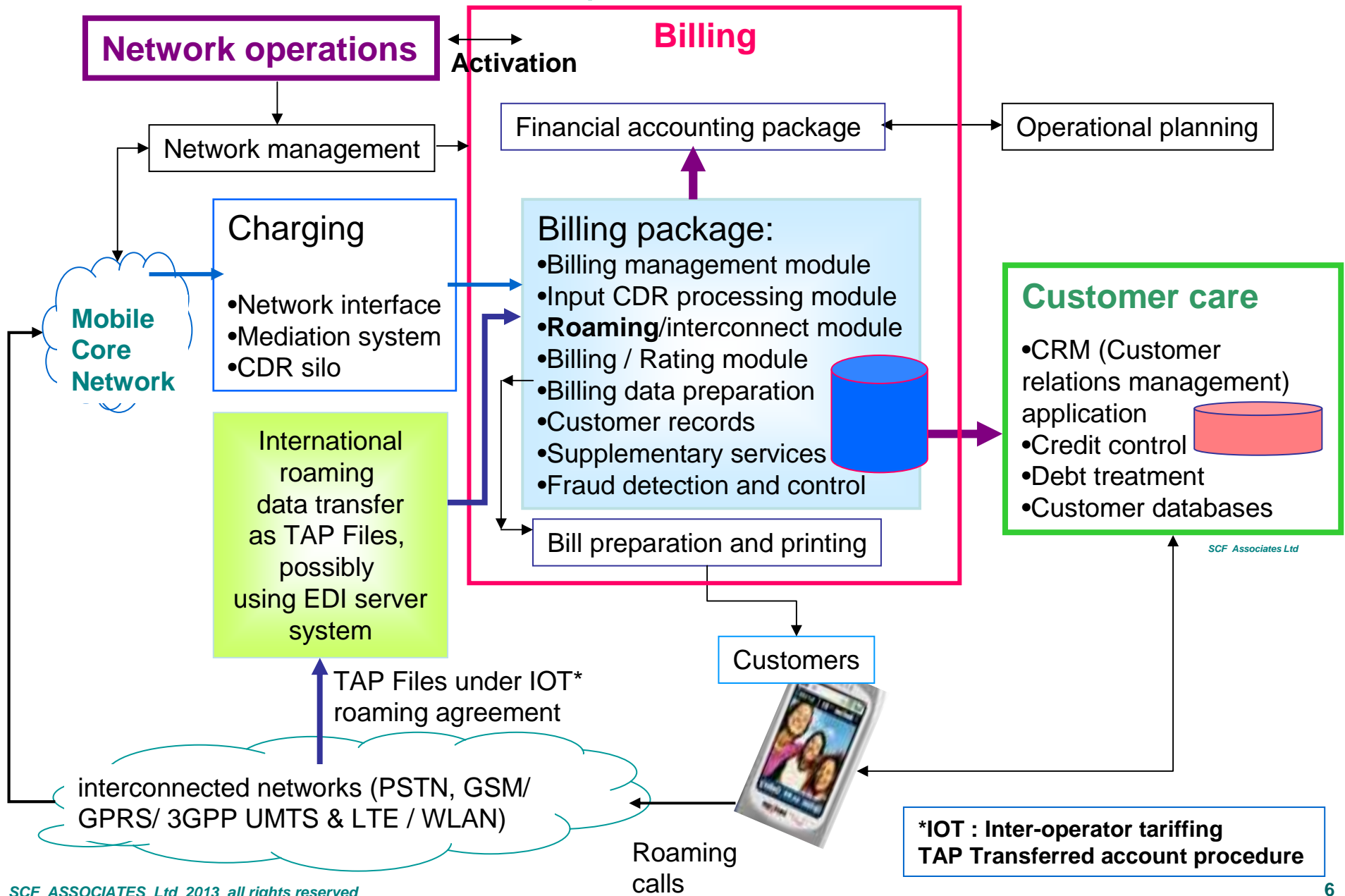
- Discussion of whether the latter tends to show that the cost of IMR is:-
 - often inflated, and
 - may not justify the wide variance in surcharges by operator and by country

Simplified mobile roaming infrastructure follows standard roaming architecture (UMTS / GSM)



HLR Home Location Register
 CDR Call Data Record
 VLR Visiting Location Register
 TAP Transferred Account Procedure
 SIM Subscriber Identification Module
 * Specifically IMSI - International mobile subscriber identifier

Inside each MNO – there are the charging, billing and customer care business processes via the BSS



Today, MNOs use various options for cutting basic Opex and Capex when moving to EU-wide operations

- Consolidation of national BSS data centres and OSS NOCs to one or 2 pan-European centres, especially useful for advanced services (data and media, online transactions for shopping etc). Also has lower energy cost profile - may be 10% - 30% of Opex
- Outsourcing – using the billing systems and other BSS components from large MNOs with spare capacity – especially useful for MVNOs
- Offshoring – especially for customer care

Actually 2 roaming markets

wholesale negotiated between MNOs and fixed line carriers on bilateral terms

Where regulatory controls need to be applied –
using the domestic market price as reference
(and the latest EC single market Communication is aimed at, Sept 2013)



Regulatory control has been applied hoping savings would be passed on into retail market – some hope !

- while the wholesale market is just as open to collusion between operators to fix prices as the retail market

EC Legislative Package SEPT 2013: roaming as part of larger industry reforms

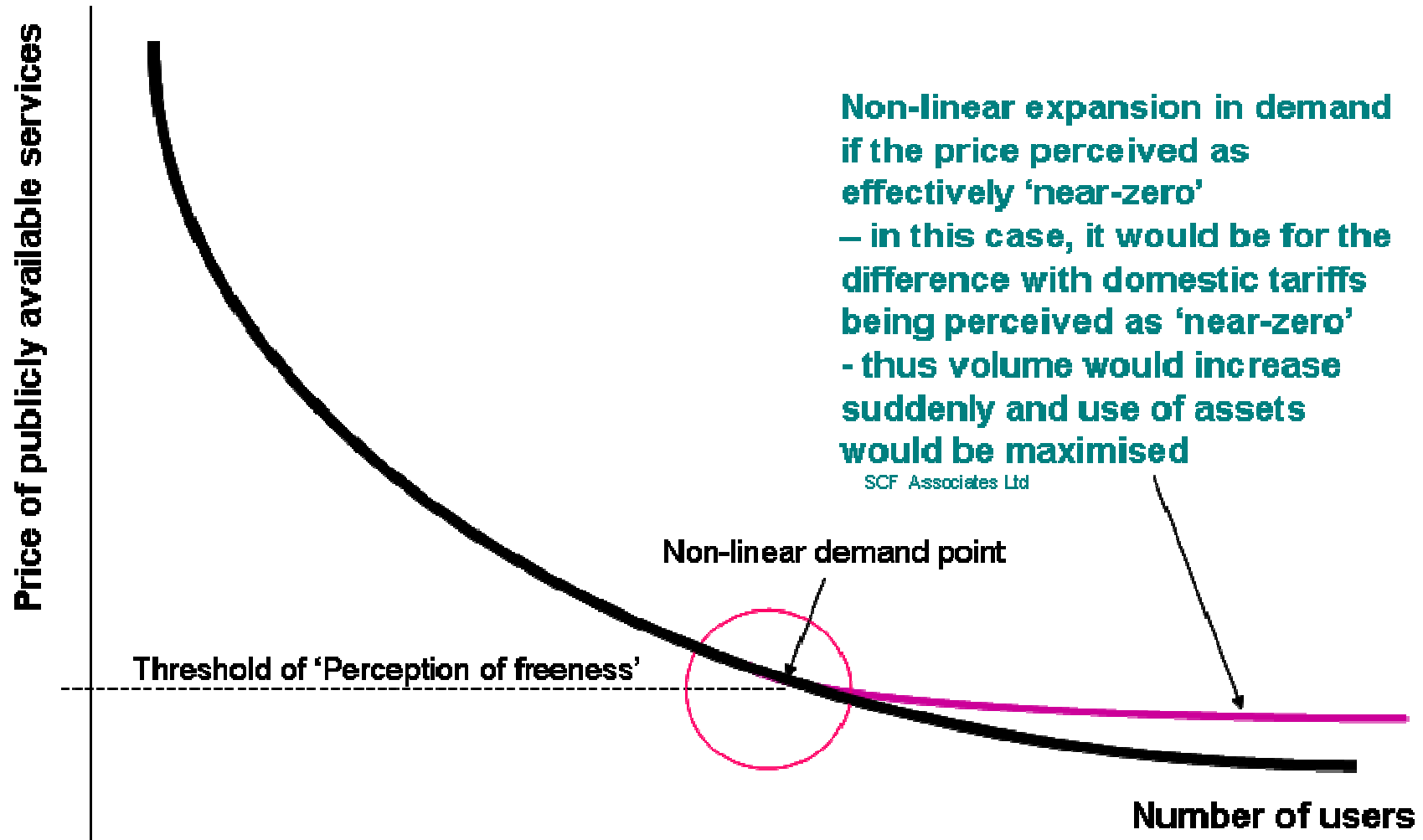
- *Connected Continent: Building a Telecoms Single Market* , 11 SEPT 2013

For intra-EU roaming:-

- Remove called-party payments (ie on incoming calls) from 01 July 2014
- Outbound, mobile-to-mobile calls Intra-EU capped at €0.19/minute + VAT
- Target - phase out roaming charges altogether **in 2016**
- BUT MNOs largely free of European roaming regulation, if they extend their domestic plans/bundles from 2014 so that **by 2018 at latest**, customers charged at domestic rates* for voice and data across all EU MS – offer 17 country package
- Transition from July 2014 ('glidepath') allowing operators to adapt either the number of plans they offer, or the number of countries they cover at domestic rates.
- In practice, MNOs have a choice, either:-
 - 1) Offer plans that apply everywhere in the European Union ("**roam like at home**"), with prices driven by domestic competition, *or*
 - 2) Permit customers to "decouple": ie opt for a separate roaming provider who offers cheaper rates (without buying new SIM card).
- Cap prices of EU-wide calls at the level of long-distance calls within an MS
- Mobile licences in one EU member state valid in 28 MS - carriers have to charge the same service rates in every EU country, forming alliances in MS where they do not operate ie *mandating the creation of operator alliances for Pan-European service plans*

* <http://ec.europa.eu/digital-agenda/en/node/67489/#roaming>

Future roaming trends : indicated by DUPUIT curves* for public services demand – expansion in Intra- EU traffic



At a certain price point, demand departs non-linearly as the 'perception of freeness' is reached. Confirmed for telecoms services from studies by Donald Kridel, 1990, Univ Missouri.

**De la mesure de l'utilité des travaux publics, 1844*