
ITU Arab Regional Workshop on Mobile Roaming: National & International Practices

Commercial Considerations of Mobile Roaming

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Roamingwise

Agenda

- Wholesale / Retail Pricing
- Structure of Roaming Costs
- EU Regulated Roaming Tariffs
- Current effect on European Operators



Wholesale / Retail Pricing

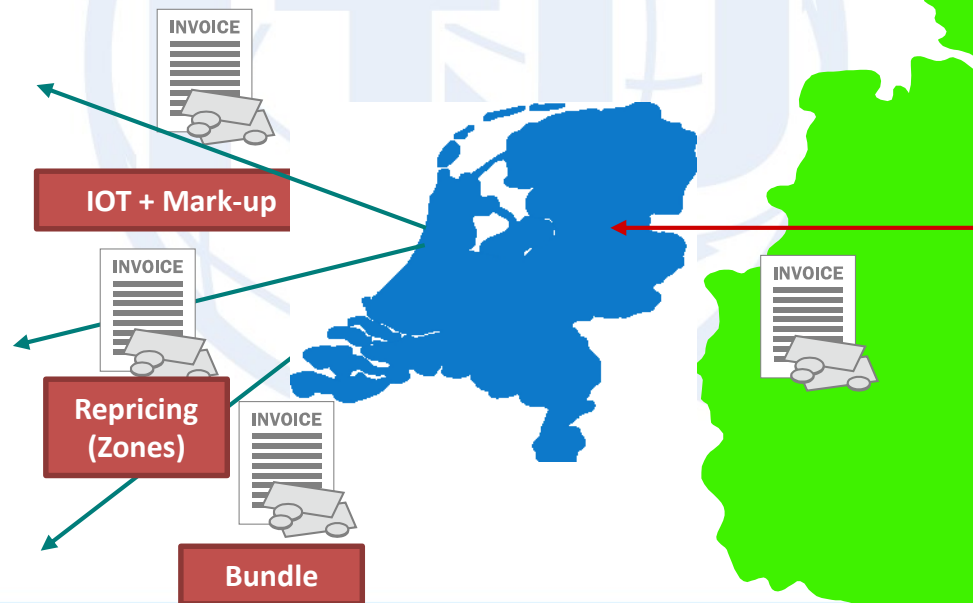
Home Network's subscriber



Wholesale (Inter Operator Tariff - IOT)

Home Network
HPMN

Visited Network
VPMN



Stability of IOTs

- An IOT will be valid (for the applicable roaming relation(s)) for a minimum period of six calendar months
- The only exceptions to this rule are either Unscheduled Changes or temporary price reductions

Unscheduled Changes:

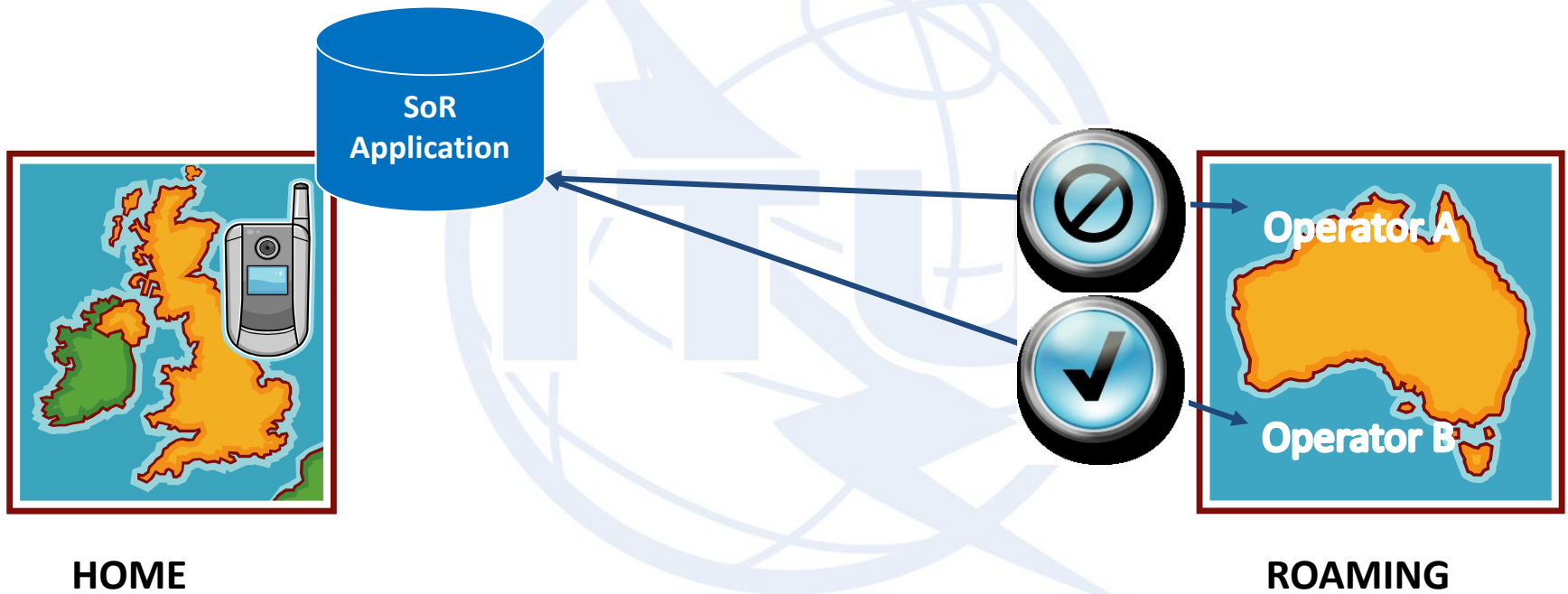
- Regulatory or government requirements
- Introduction of new services
- Changes in interconnection costs

IOT Discount Negotiation

- Wholesale roaming rates are determined by inter-operator tariffs (IOTs) which provide a non-discriminatory tariff and which provide the benchmark for negotiating wholesale rates.
- As a result of IOT Discount Negotiation the final outcome may differ from the IOT level since it may take into account volume of traffic. In many cases traffic can be steered via a Traffic Steering Tool.



Traffic Steering



Traffic steering has allowed mobile network operators to negotiate better wholesale terms

Example Mark-up Model

Roaming Service Tariff


Russia

Network Operator	Frequency Band ⁽¹⁾	Network Code	International Access Code	Country Code	Time Difference with HK	Incoming Call (HK\$/min)	Calling Local (Fixed Lines in Same City) (HK\$/min)		Calling HK via '138' (HK\$/min)	Calling HK via IDD (HK\$/min)	Sending SMS (HK\$) ⁽⁴⁾	Receiving SMS (HK\$) ⁽⁴⁾	Peak Hour ⁽⁵⁾		Local Customer Hotline	
							Peak	Off-Peak					Local Outgoing	Int. Outgoing		
BWC (FECS-900) (6)	900	250-12	810 or +	7	+2:00	15.80	4.13	2.88	15.80	27.18	25.12	0.90	Free	Mon-Fri 0800-2200	Mon-Fri 0800-2200	8 423 245 65 07
Beeline (KB Impuls) (6)	900 & 1800	250-99	810 or +	7	-5:00	15.80	11.27	11.27	15.80	48.88	48.88	2.91	Free	--	--	8 495 258 8888
MTS (6)	900 & 1800	250-01	810/811/+	7	-6:00/+2:00	15.80	10.98	10.98	15.80	60.24	60.24	2.68	Free	--	--	8 800 333 0890
MegaFon	900 & 1800	250-02	810 or +	7	-6:00/+2:00	15.80	9.87	9.87	15.80	34.90	34.90	2.25	Free	--	--	0500
NCC	900	250-03	810 or +	7	-5:00	15.80	4.71	2.40	15.80	39.63	27.00	0.23	Free	Mon-Fri 0800-2000	Mon-Fri 0800-2000	8 8312 300004
NTC	900 & 1800	250-16	810 or +	7	+2:00	15.80	4.06	3.53	15.80	33.90	31.16	1.98	Free	Mon-Fri 0800-2300	Mon-Fri 0800-2300	8 4232 510 510
Tele 2	1800	250-20	810 or +	7	-3:00	15.80	4.22	3.14	15.80	40.73	39.74	1.08	Free	Mon-Fri 0800-2000	Mon-Fri 0800-2000	+78632 415000
Uraltel	900 & 1800	250-39	810 or +	7	-3:00	15.80	5.83	4.08	15.80	35.99	35.99	1.06	Free	Mon-Fri 0800-2000	--	100*

- The tariff listed here is for reference only, and may vary depending on exchange rate fluctuation, tax & the price changes by the visited networks.
 - When receiving incoming calls abroad, or making calls back to Hong Kong or other countries via "138" Roaming Service, charges will be calculated on 1-minute-per-unit basis.
 - When using "138" Roaming Service, roaming charges apply once the call set up from our system is received, regardless of whether the called line is busy or has no answer.
 - If you dial "138" to call another destination (other than Hong Kong) while roaming abroad, the charge for "Calling HK via "138"" plus the charge for IDD001 Service from Hong Kong to that destination would apply. For details on the IDD001 charges please refer to PEOPLES "IDD Service" leaflet.
 - If you make IDD calls to another destination while roaming abroad, the charge would depend on individual countries and your called destination.
 - The charges of outgoing local calls may vary, subject to the destination or networks (fixed/mobile) used by the recipient.
 - If the handset cannot be connected to a local network automatically overseas, customers should manually select the suitable roaming network using the network selection function.
 - When roaming abroad, with our Voice Mailbox, IDD001 and Call Forwarding services, you can simply forward your calls to voice mailbox 62386238 before leaving Hong Kong. You can choose to forward all your calls, or only when you cannot answer the phone, cannot be reached or when the line is busy.
Two-way roaming charges would be levied on all calls successfully forwarded to voice mailbox 62386238 (except when "All Call Forwarding" is selected). Customer can cancel the call forwarding function anytime via handset by pressing ##002#(send) according to individual needs. Please refer to leaflet or visit PEOPLES website for details.
 - To avoid incurring unnecessary roaming charges caused by Call Forwarding ("No Answer", "Unreachable" or "Busy") when you are overseas, you are advised to de-activate the conditional Call Forwarding functions, or press ##002# to cancel all Call Forwarding functions, before leaving Hong Kong.
 - If customers successfully connect to voice mailbox or Customer Care Hotline of PEOPLES by pressing short codes such as 218 or 888 in overseas, charges will be applied as IDD calls back to Hong Kong (When roaming abroad, short codes availability is dependent on local networks).
 - The availability of certain services while roaming abroad depends on the local network operators.
- For coverage details, please call 2945 8888.
 - Customers are required to use compatible handset while roaming in US, Canada, and most destinations in North and South America (GSM 850 or GSM 1900). For GSM 900 roaming, customers are required to use a dual band handset. For roaming in Japan (3G) Vodafone, customers are required to use 3G compatible handset. (Vodafone is formerly called J-Phone).
 - For roaming in Japan (PDC) or South Korea, customers are required to rent a Japan (PDC) or Korea (CDMA) handset from PEOPLES Customer Care Centre. Also, customers are required to register IDD001 service.
 - The availability of "No Answer", "Unreachable" and "Busy" Call Forwarding depends on local network operator.
 - Both roaming and local SMS charges apply. Some roaming operators require IDD001 subscription to send SMS. Customers are advised to subscribe IDD001 service before leaving Hong Kong.
 - All the time zones refer to local time and are set by visited network operators. Time zones other than the above-mentioned are considered off-peak hours.
 - Support Calling Number Display for incoming call from Hong Kong, but the availability of the service may still depend on the local network operator.
 - The chargeable call duration begins when the customer hits the "send" button on the handset and ends when the customer hits the "end" button on the handset. The outgoing call may be charged by roaming network even if the call is unanswered, picked up by network's system message, or if the other number is busy.
 - Called party not reachable, busy, unsuccessful call attempts and system announcements will be charged.
 - To make a local call in Kyrgyzstan via MegaFon network, please press: 810 996 (area code) (telephone number).
 - Applicable to Seoul area and other selected cities.
 - The Roaming Tariffs listed represent the charges incorporating the maximum level of taxes in respective areas (Canada Rogers Wireless: Prince Edward Island; USA T-Mobile: Illinois). Lower charges may apply in other areas within the same country.
 - "Local Call" rate is applicable to calls between 2 roaming customers on the same vessel.
 - "Local Call" rate is applicable for calls to the USA.
 - "Local Call" rate is applicable for calls to phone number with Country Code "+88232".
 - "Local Call" rate is applicable for calls to Italy.
 - This service is provided by Italy TIM, thus certain roaming usage may be displayed as Italy TIM as the roaming destination of the bill.
 - For further information on vessels supporting Maritime Roaming, please [click here](#).
 - AeroMobile provides roaming services on Emirates Airline and Malaysian Airline. Service may not be applicable to flights to/from Hong Kong; please consult respective airline for updated details of roaming service availability.
 - "Local Call" rate is applicable for calls to phone number with Country Code "+88299".

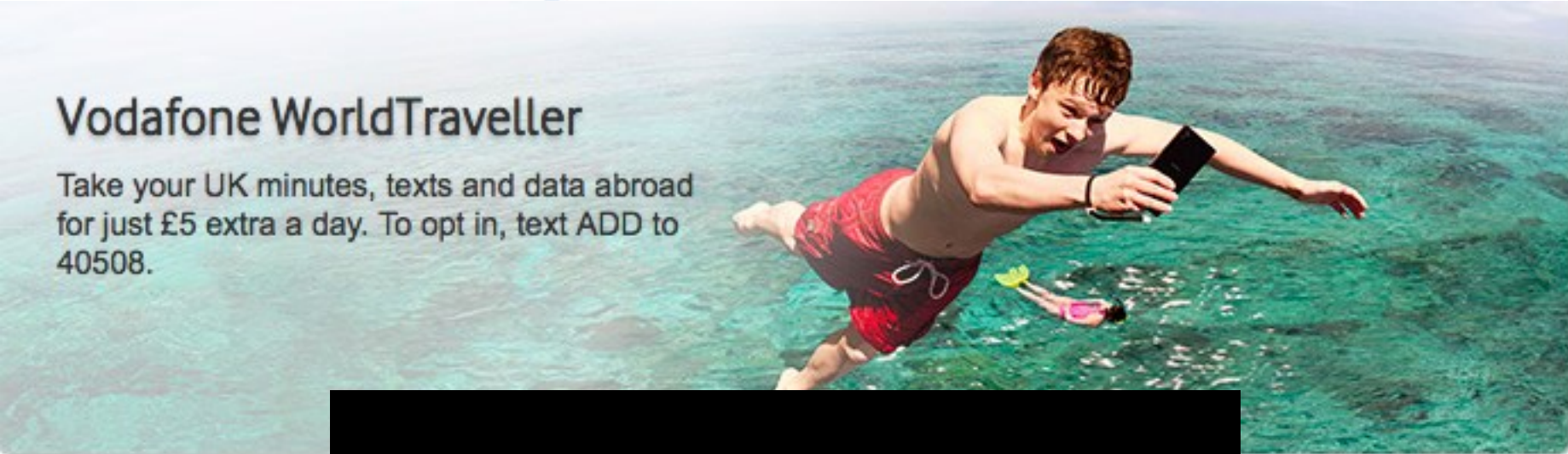
Example Re-pricing Model

Ho
HP

Tariff Example			
Tariff Zone	Country or region	Call mainland China (excl. Hong Kong, Macao and Taiwan)	Receive calls
		Yuan / minute	
1 Yuan Zone	Hong KONG  , Taiwan, South Korea, Singapore, the United States and other 3 countries or regions	0.99	0.99
2 Yuan Zone	France, Germany, the United Kingdom, Malaysia, Thailand and other 22 countries or regions	1.99	1.99
3 Yuan Zone	Japan, Brazil, India, the Philippines and other 141 countries or regions	2.99	1.99 or 2.99

ited Network
VPMN

Example Roaming Bundle



Vodafone WorldTraveller

Take your UK minutes, texts and data abroad for just £5 extra a day. To opt in, text ADD to 40508.

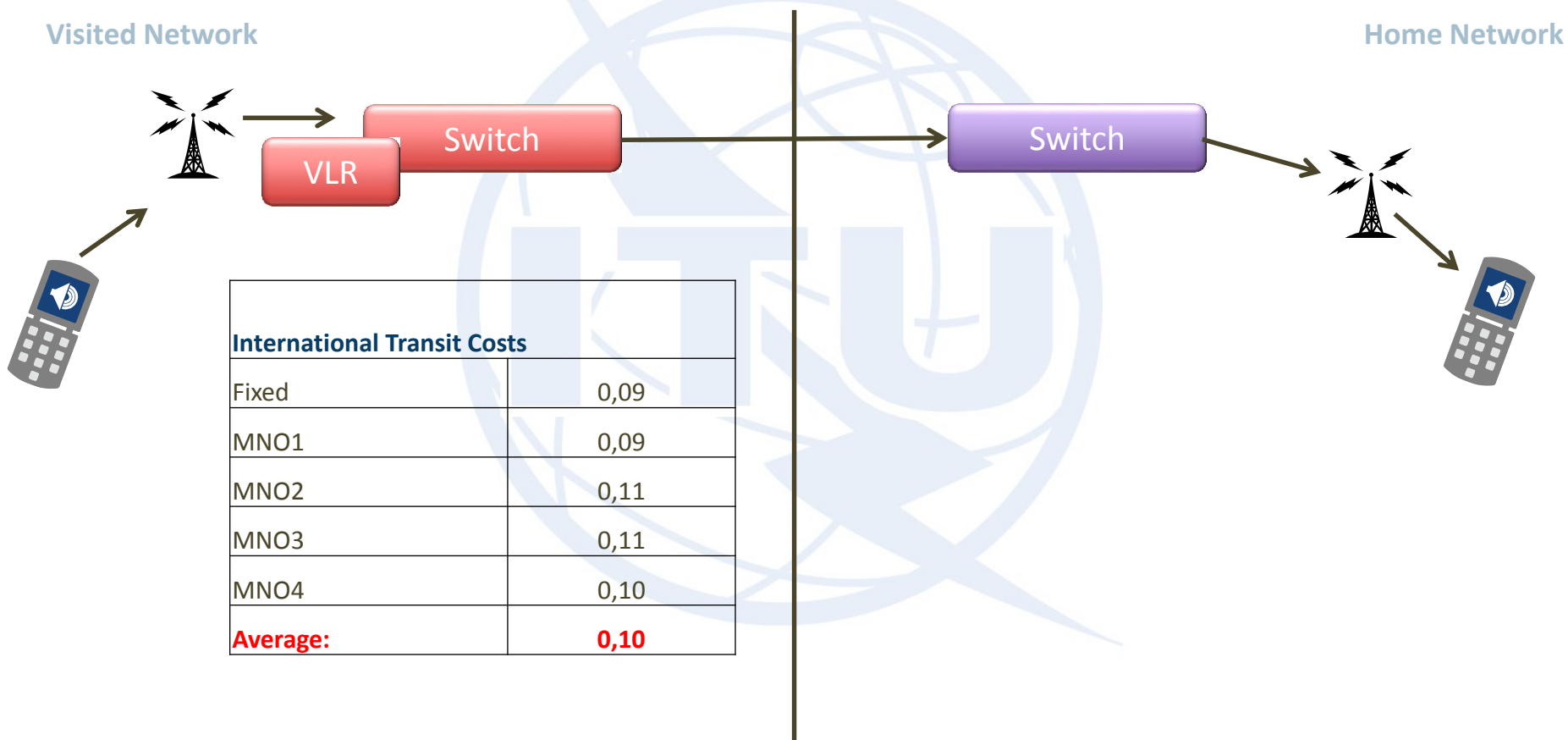
Structure of Roaming Costs



Outbound / Inbound – Where is the Profit?

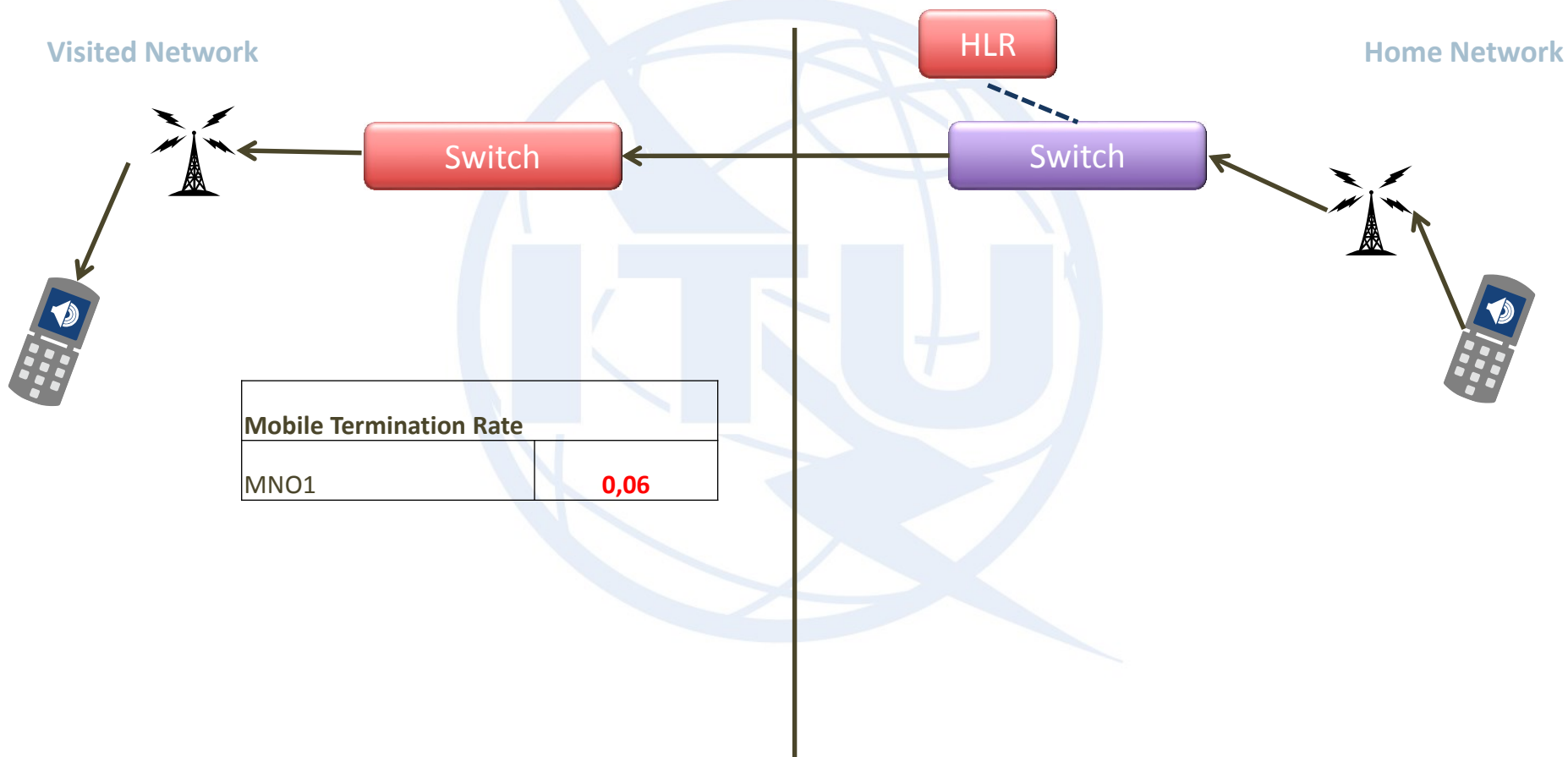


Costs – Inbound Originating back Home



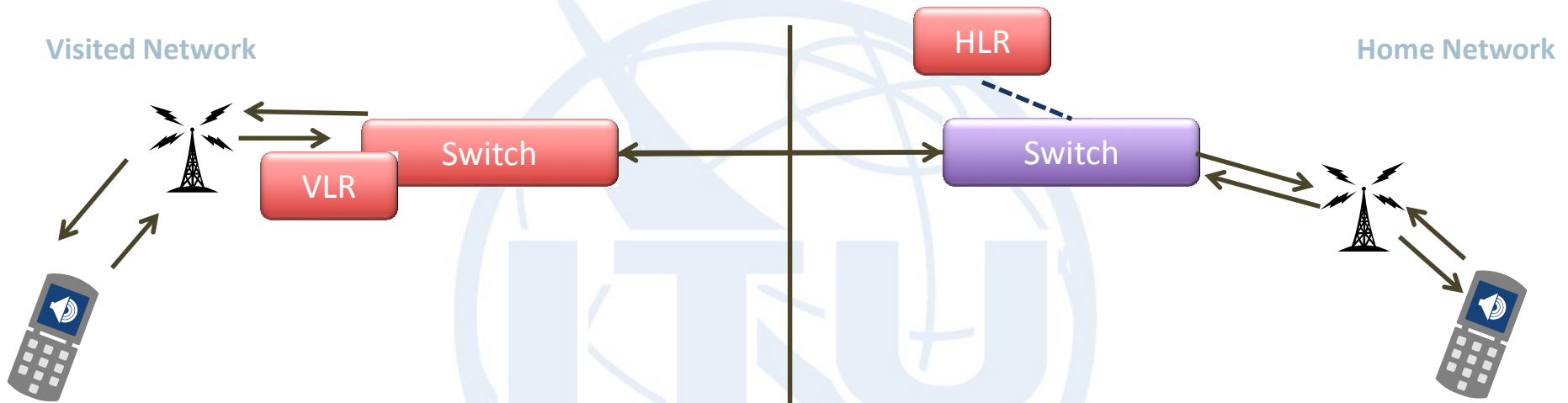
IOT Originating should not be lower!

Revenue – Inbound Terminating Call from Home



Charge IOT terminating Call?

IOT VPMN / Retail Rate Home Network



IOT	
MOC back home	0,50
MTC	0

Retail Rates Home Network	
MOC back home	0,70
MTC	0,35

Inbound Roaming KPN Netherlands

- Visited Network Inbound Originating Call: $0,50 - 0,10 = 0,40$
- Visited Network Inbound Terminating Call: $0 + 0,06 = 0,06$

Outbound Roaming Zain Sudan

- Home Network Outbound Originating Call: $0,70 - 0,50 = 0,20$
- Home Network Outbound Terminating Call: $0,35 - 0,06 = 0,29$

Other costs

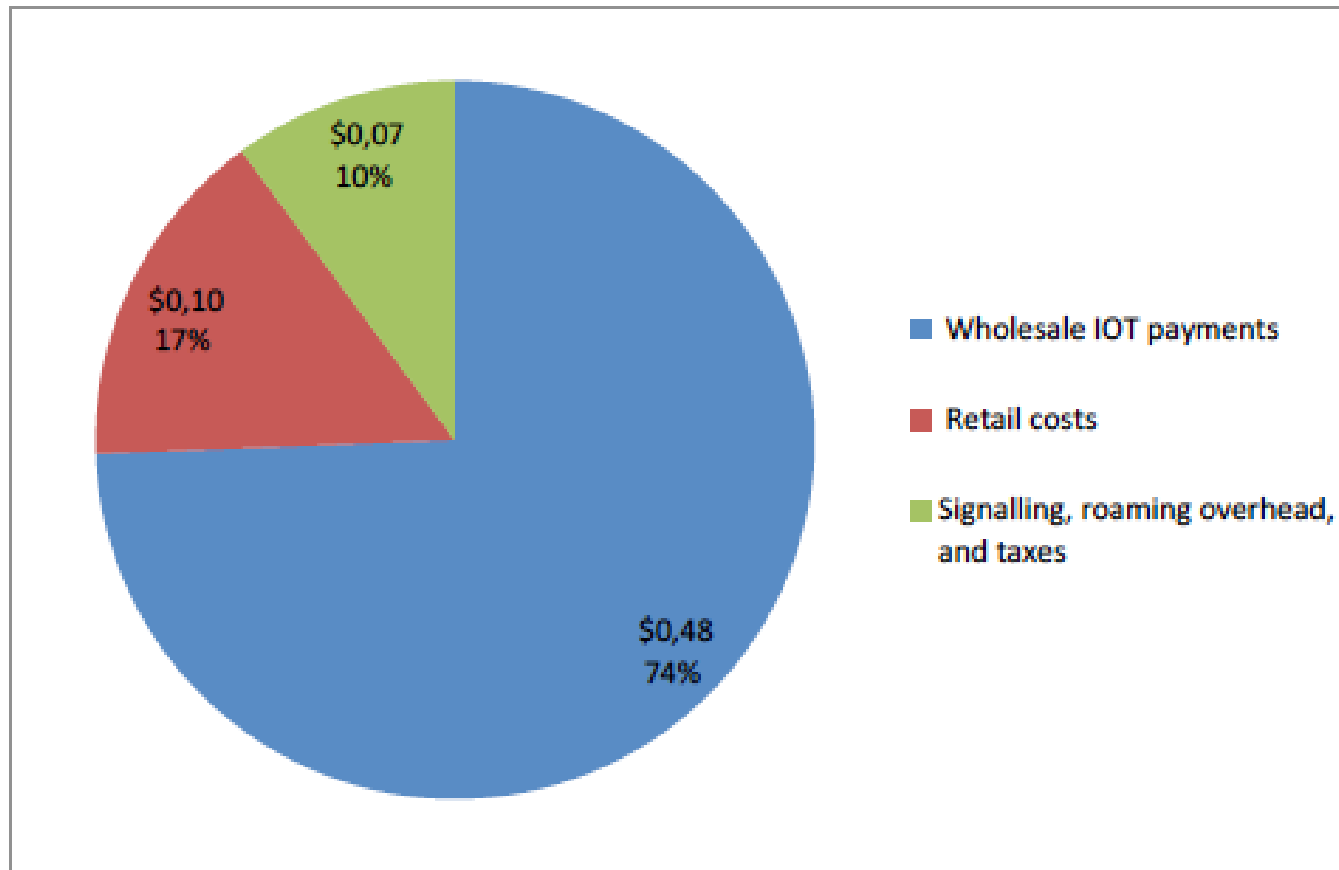
- Interconnection costs (International Transit Rate / Mobile Termination rate)
- Roaming infrastructure shared with domestic services:
 - Billing System
 - Radio network for visitors
 - Fraud Management System
 - Prepaid (Roaming) Billing System
- International Signalling costs:
 - Implementation, management and operations of an international signalling network
 - Payments to signalling link providers
 - Increased signalling traffic on own network for location updates, authentication, authorisation, etc.



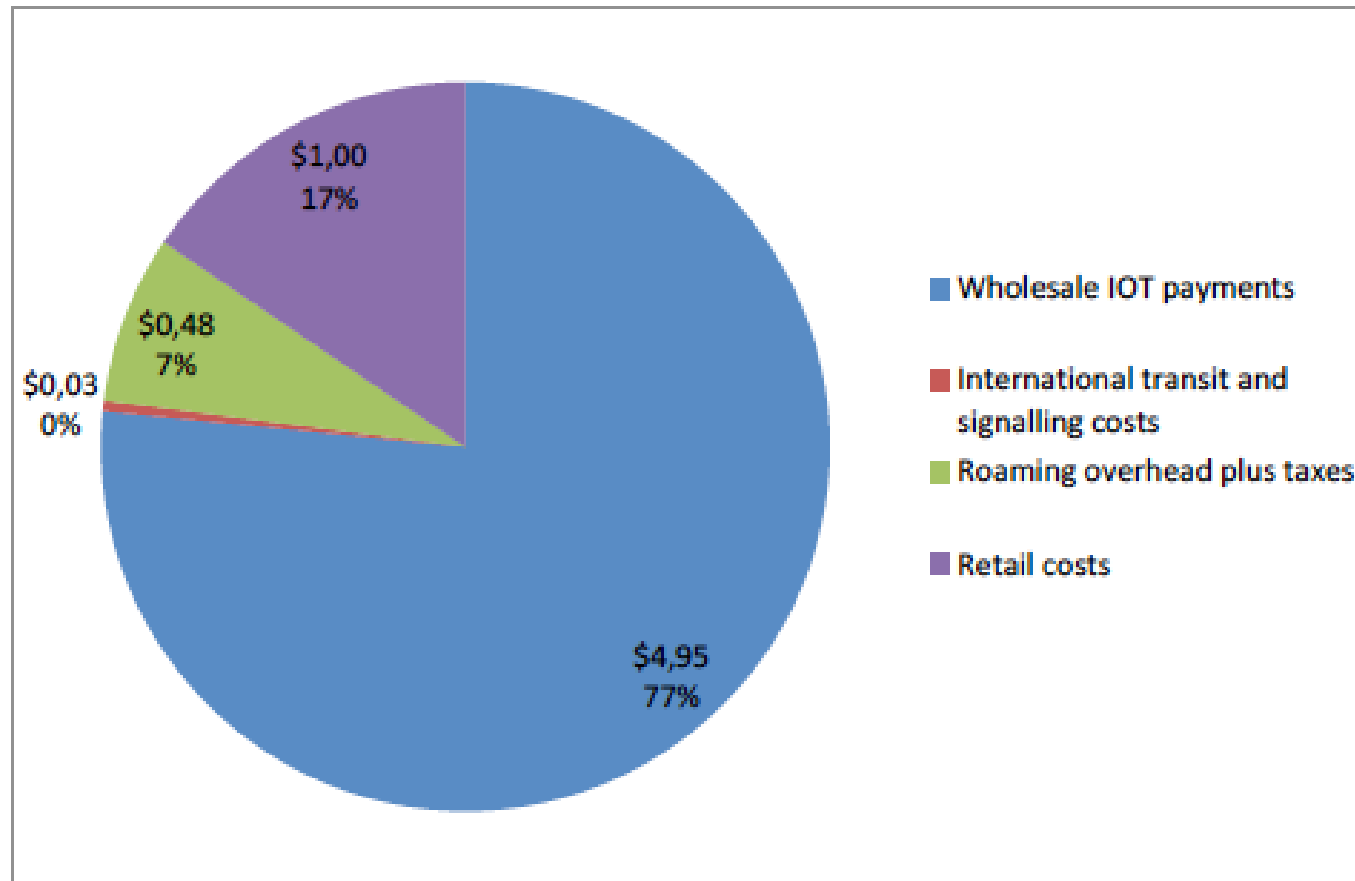
- Other elements that are specific to roaming include:

- Payments to roaming clearing houses
- Dedicated roaming teams for coordination and management of the roaming service with numerous roaming partners
- Reaching and maintaining bilateral roaming agreements
- Technical and Billing test teams during the launch process, updating and trouble shooting
- Management and operations of the roaming billing
- Fraud prevention
- Network expansion in targeted areas with high visitor concentration
- Roaming specific communications and marketing costs

Calls made to GCC member states other than the visited country



Costs of international mobile data to the home network



EU Regulated Roaming Tariffs



EU Roaming Regulation – Start

2005: the European Commission launched a consumer website on roaming tariffs, which exposed roaming prices of up to EUR 12 for a four-minute voice call. The European Commission estimated voice roaming calls were on average 3 to 4 times more expensive than domestic outgoing calls, 2.5 times higher for SMS and 25 to 35 times higher for data.



Why has it been difficult to find solutions for lowering high roaming pricing?

- First, users in a country usually choose their mobile service provider on the basis of the best offer or post-paid or prepaid.
- Second, even if users are aware of the roaming prices (and they are usually not), roaming is not a major consideration for them.
- Third, when travelling, a mobile user cannot usually choose his/her international roaming service provider.



Roaming Regulation in EU

1 July 2007 - Roaming Regulation I

- 'Eurotariff' - Pricecaps for calls made and received in the EU

1 July 2009 - Roaming Regulation II

- Reducing voice calls further + introducing caps on SMS pricing + per second basis charging

1 July 2010:

- Reducing 'bill shock' by cut-off mechanism once data roaming bill reached 50 euros
- Operators to send SMS once subscribers reached 80% of agreed limit

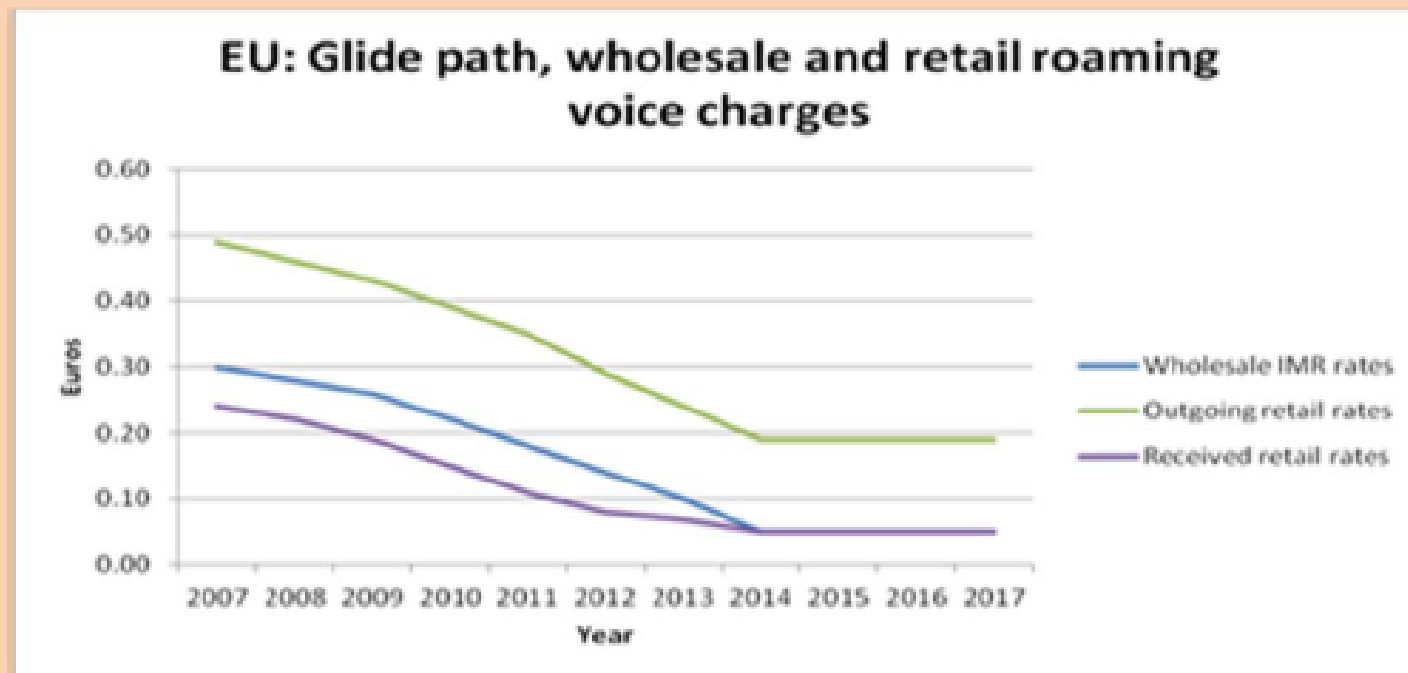
1 July 2012 - Roaming Regulation III

Regulated Roaming Tariffs EU

Retail caps	1-7-2011	1-7-2012	1-7-2013	1-7-2014
Outgoing Calls	0,35	0,29	0,24	0,19
Incomig Calls	0,11	0,08	0,07	0,05
Sms	0,11	0,09	0,08	0,06
Data		0,70	0,45	0,20
Wholesale caps				
Voice	0,18	0,14	0,10	0,05
Sms	0,04	0,03	0,02	0,02
Data	0,50	0,25	0,15	0,05

Tariffs in Euro, excl. VAT, per minute, per sms of per MB

Figure 4: EU regulated wholesale and retail roaming voice charges



Source: <http://ec.europa.eu/digital-agenda/en/telecoms-rule>

Termination rates in the EU

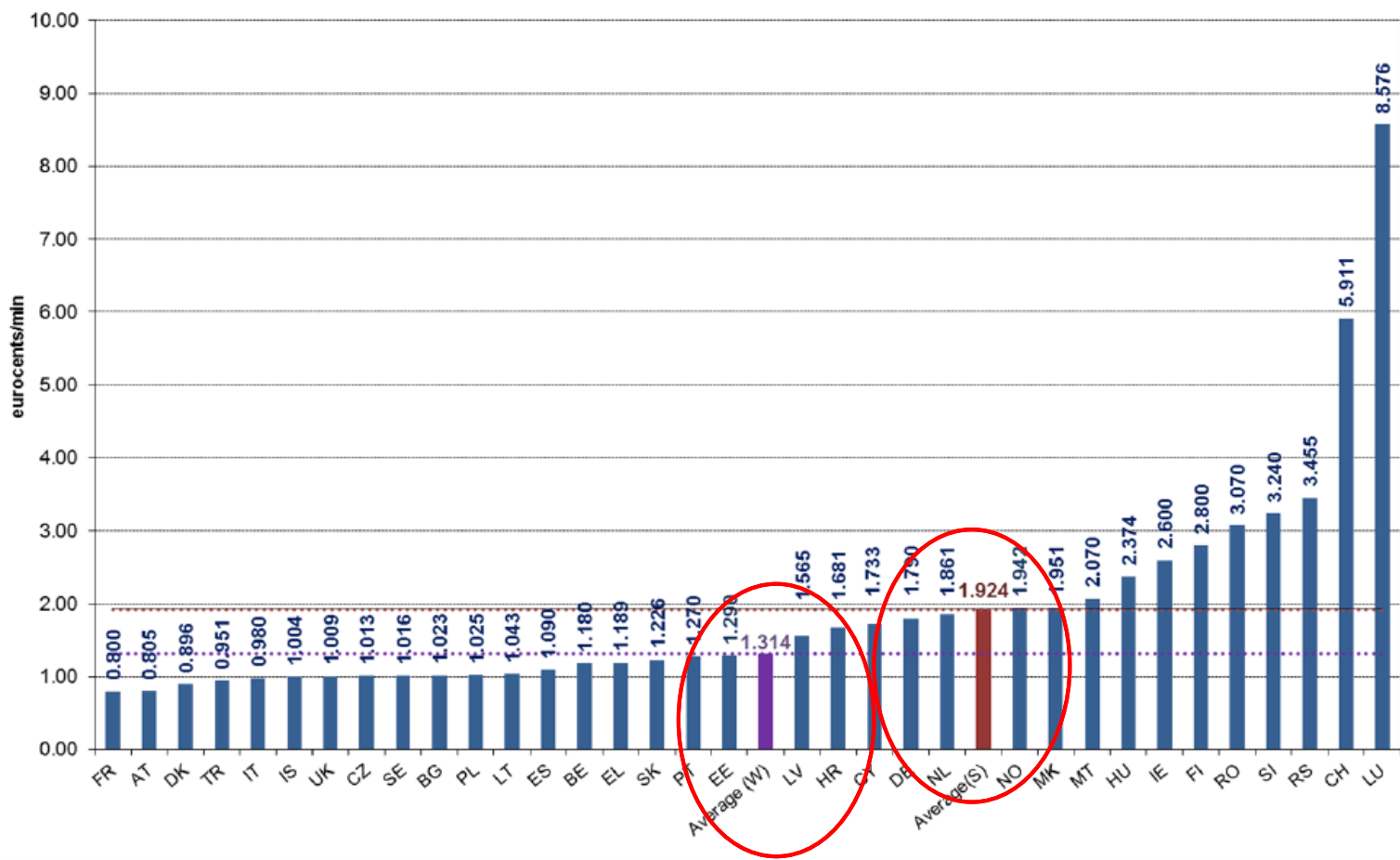
2008:

Mobile termination rates varied widely in the EU in 2008 from 0,02 euro per minute (in Cyprus) to 0,15 euro per minute (in Bulgaria). This undermined the Single Market and Europe's competitiveness. The guidance was in the form of a "Recommendation" that national regulators were obliged to take "the utmost account" of. The Recommendation indicated specifically that termination rates at national level should be based only on the real costs that an efficient operator incurs to establish the connection.



Result June 2014

Average MTR per country – January 2014



Liberalisation of international gateways

- International gateways facilities for the transmission and reception of international calls and can add to the cost of roaming if not liberalized.
- The GSMA calculated that in the Middle East, international roaming call prices between Arab countries with liberalized gateways were 25 per cent lower than between Arab countries with gateway monopolies.



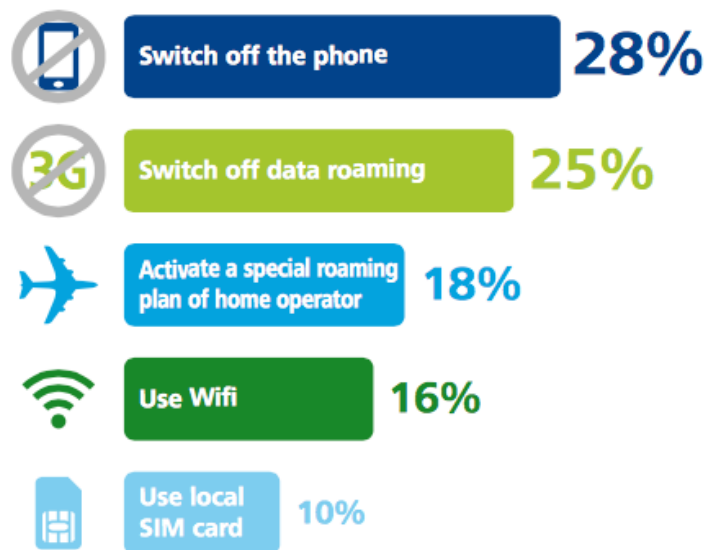
Roaming Regulation III

- Operators need to provide access to other operators for the purpose of providing roaming services (after 1 January 2013) - MVNO direct roaming
- Customers may choose an Alternative Roaming Provider, (after 1 July 2014) (reseller, LBO)
- Operators to automatically provide their customers information about the roaming tariffs for voice, data or SMS now also applies when customers enter countries outside the European Economic Area (EEA) (= EU member states plus Iceland, Liechtenstein and Norway)
- The obligation for Operators to offer a cut-off service for data roaming now also applies when customers enter countries outside the European Economic Area (EEA)



Survey 28.000 EU Citizens 2014

When visiting another EU country, you generally ...



Only 8% say they use their phone in the same way as at home

The European Commission calculates that telecoms companies are missing out on a market of around 300 million phone users because of current pricing strategies

Connected Continent



© European Union, 2013

Single European Telecom Market

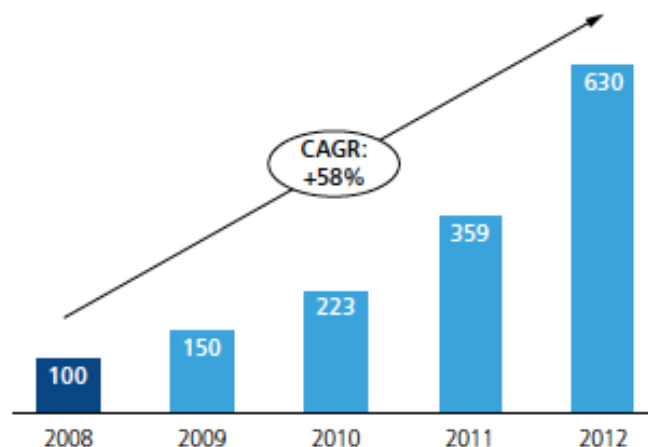
- 30 June 2015: EU agrees on end date for roaming:
 - Roaming charges will cease in the EU as of 15 June 2017
 - Consumers will pay the same price for calls, texts and mobile data wherever they are in the EU
- The compromise includes a fair-usage safeguard against permanent roaming:
 - Once a limit is reached when a user is abroad then operators can charge them a small fee. The commission will define what is the fair use limit.
- Summer 2015: retail roaming caps will stay the same as they have been since 1 July 2014
- April 2016: Operators will only be able to charge a small additional amount to domestic prices of up to €0.05 per minute on calls, €0.02 per SMS, and €0.05 per MB of data (excluding tax).

-
- Current effect on European operators

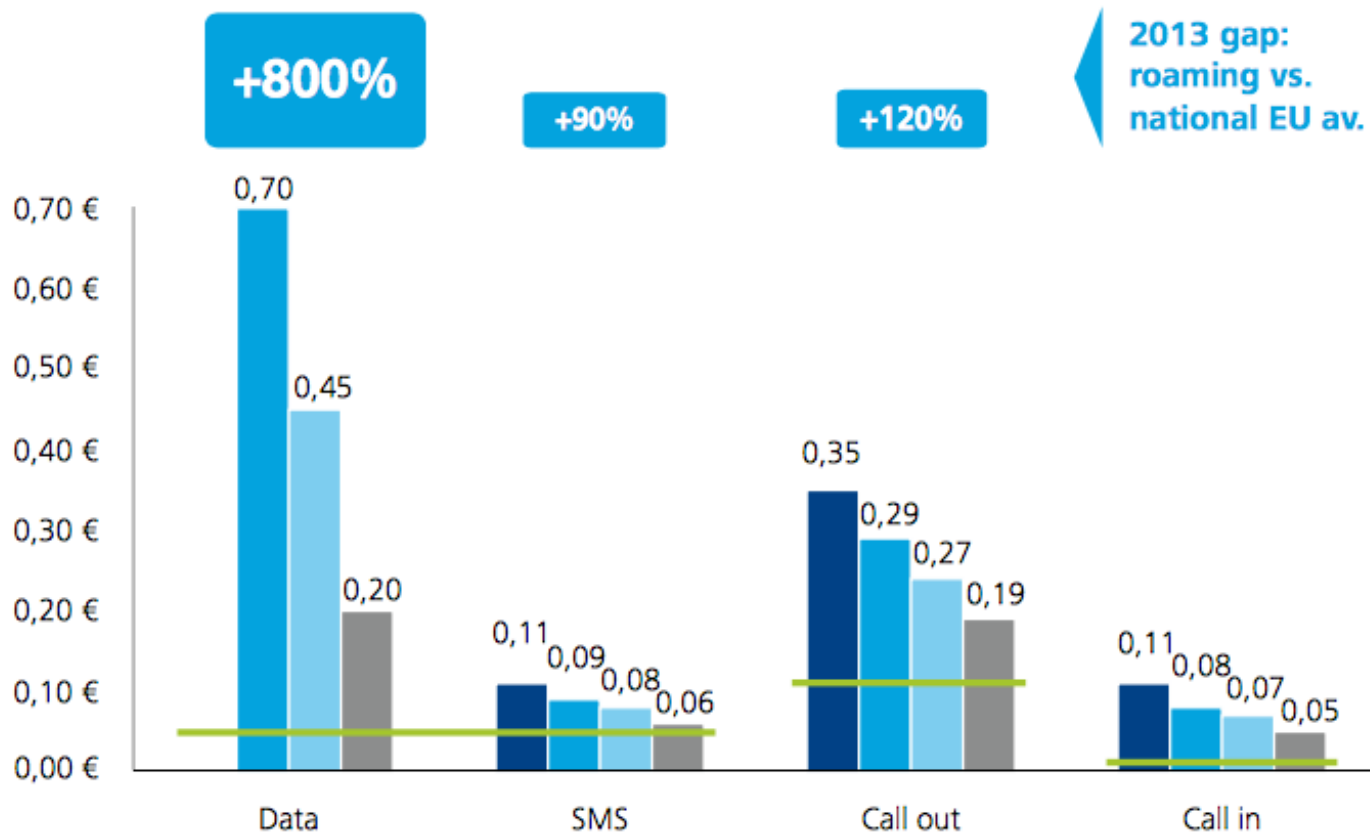


Results of EU Roaming Regulation on Roaming Tariffs

- The EU has achieved retail price reductions across calls, SMS and data of over **90%** since 2007
- Since 2007, the volume of the data roaming market has grown by **630%**, with an annual growth rate of 58%



EU Roaming Retail Price Caps 2011-2014



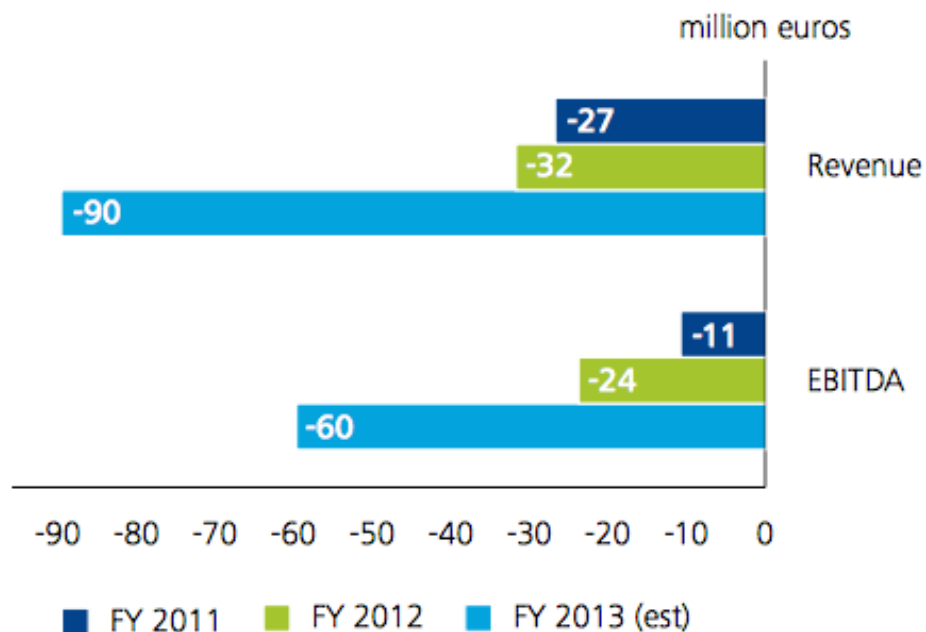
■ 2011
 ■ 2012
 ■ 2013
 ■ 2014
— Average national price 2013

Foundings 2009

- BEREC found that: "Small network operators have at an overall level been positively affected by the introduction of wholesale price regulation. The Regulation has enabled such operators to get better deals when buying wholesale."
- An important finding by BEREC was also that the roaming regulations did not appear to have affected the prices of other mobile services i.e. there was no apparent waterbed effect. The fact that roaming revenue accounts for only a small percentage of total mobile revenue was cited as one reason for this.

Impact on price decreases on operators' revenues

- For instance, KPN in the Netherlands reports that regulated tariffs for roaming already accounted for €59 million of lost revenues over 2011 and 2012, and shows another lost €90 million in 2013.



Source: KPN

Current “Roam like Home” Offers

- Bouygues, Orange France: Limited amount of days per year
- Free France, Three UK: Designated destinations only
- Orange, Bouygues, Free: A specifically capped additional data package
- Base Belgium: Pay a monthly fee to benefit from the new offer
- Bouygues: Services limited to calls and SMS to the home country

No clear understanding by EU customers

Expected future

- The EU-roaming revenue stream is drying up for European operators.
- In the long term, extra-revenues from roaming will be very limited and the EU-market will operate increasingly like a single market, favouring pan-European operators.
- In order to compensate for this revenue loss, operators have threatened that they will need to increase national tariffs to protect their margins. The intensity of the competition in Europe will not necessarily allow such a move, and operators need to keep investing heavily in new network technologies to generate future revenues. In roaming, focusing on non-EU tariffs – that remain unregulated – will generate additional revenues thanks to growing global usage.



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THANK YOU

Open Discussion

Data Roaming

Between the optimistic communication from the EC and the fear of operators to see their revenues diluted by price caps, the size of the future roaming market remains uncertain. What we know is that data roaming will soon become the main source of roaming revenues. Globally Juniper Research has valued operator revenues generated from mobile data roaming at \$42 billion by 2018. This will represent 47% of the global mobile roaming revenue, compared to an estimated 36% in 2013.



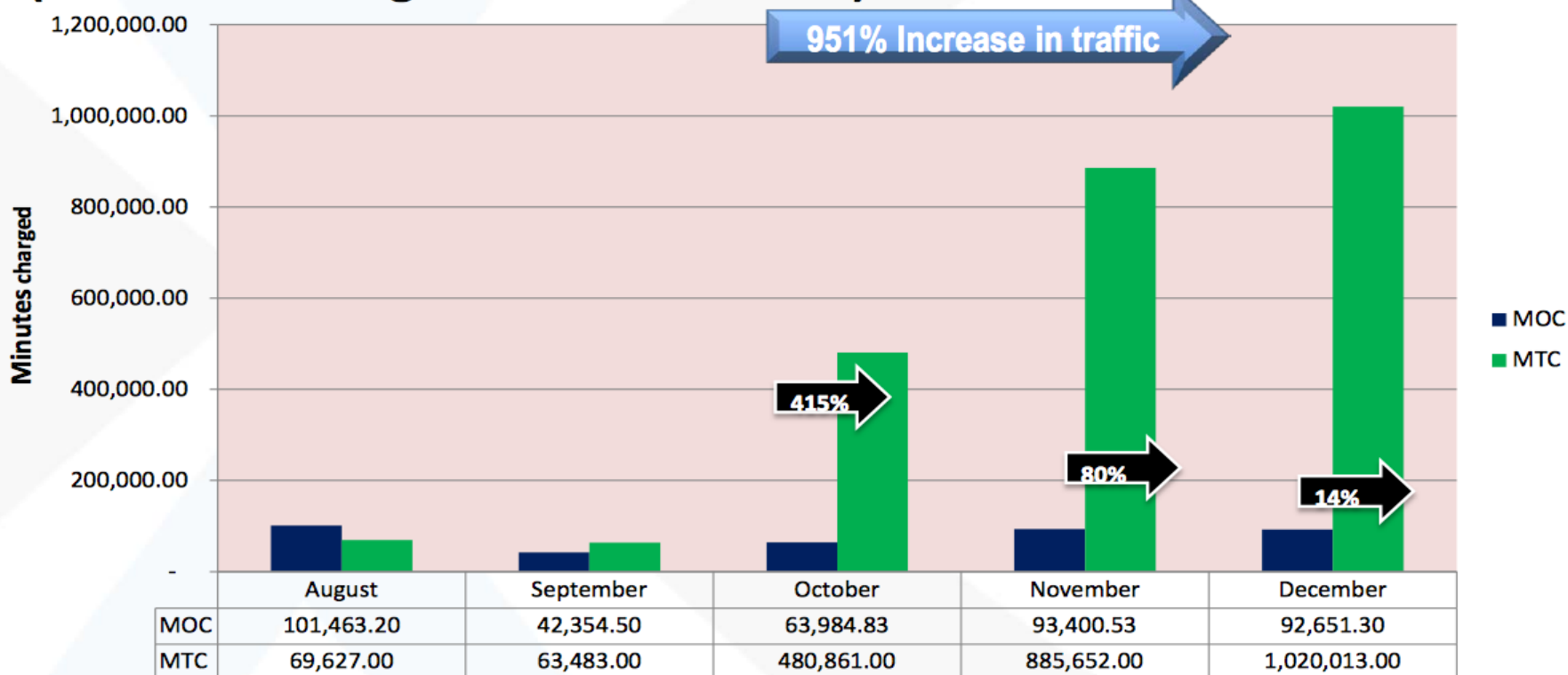
Africa – EAC (East Africa Community)

- East African countries Kenya, Rwanda and Uganda implemented a regulated One Area Network (OAN) model by 6 October 2014. Burundi and Tanzania joined on 15 July 2015. Introducing price caps - wholesale USD 0.07 per minute and retail USD 0.10, no retail charges for receiving calls and per second billing.
- The initiative has so far made East African the cheapest in terms of communications costs in all of Africa.



(Kenya)

(Inbound roaming traffic from Rwanda)



(Kenya)

(Outbound roaming traffic)

