



INTERNATIONAL MOBILE ROAMING

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Commercial considerations in International Mobile Roaming

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Mobile roaming defined

Inputs required for roaming

Wholesale traffic and payment flows

Roaming rates



What is international mobile roaming?

Customers can continue to use their mobile phone and phone number to make and receive voice calls and text messages, as well as browse the internet and check email, while visiting another country

For mobile operators, roaming is a retail service such as voice calling, text messaging or accessing the internet when abroad. The unique feature of international mobile roaming (IMR) is that the home operator extends the coverage of its mobile services to other countries

IMR is a service offered in the market for communications to customers while travelling. Alongside IMR, the wide selection of communication services offered to customers while travelling abroad includes prepaid SIMs and WIFI in visited countries and travel SIMs



What do IMR retail customers pay for?

Receiving calls or text messages while abroad in another country

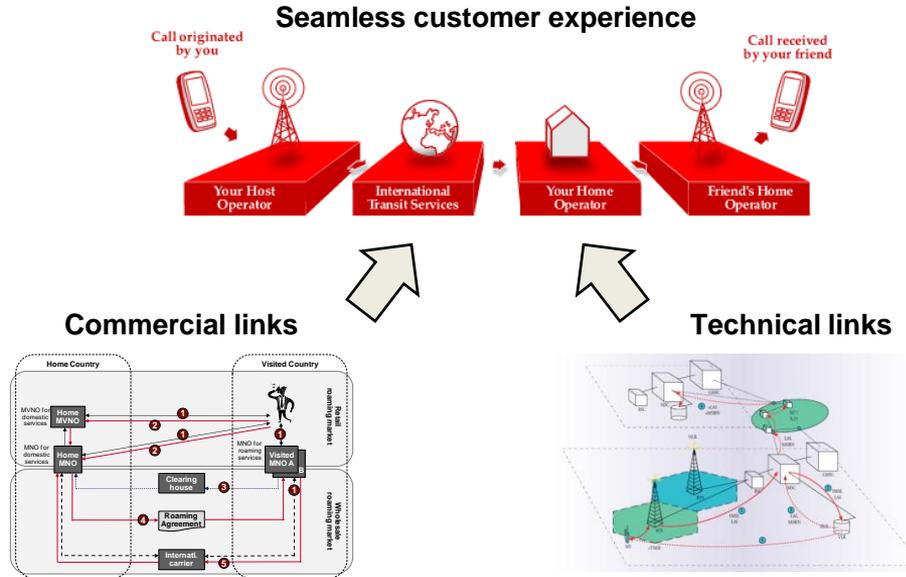
- If you are called or receive a text message while abroad, the caller or sender of the text message pays the same charges as if they were calling or texting while you were in your home country
- The international portion of the roaming call is charged to you by your home operator

Making calls, sending a text message or internet browsing while abroad in another country

- When you make a call, send a text message, or browse the internet while abroad, you will bear all costs of making the call, and the called party pays nothing (assuming the other party is in their home country and not travelling internationally)

IMR technology and operations

Complex links between operators are required for customers to seamlessly use their mobile phones abroad



Source: A.T. Kearney analysis

Seamless customer experience



The **home operator** bills its retail customer for making and receiving voice calls, sending text messages and internet services while roaming on a **host operator's** network in another country



Inputs to mobile services including IMR

Inputs are not only used for IMR, but also other mobile services:

- **Mobile termination.** Mobile termination rate is the price paid for terminating a call on a mobile operator's network. Mobile termination rates are regulated in most jurisdictions
- **International transit.** Transport on international networks of voice calls or text messages, as well as internet traffic
- **Mobile handsets**
- **Billing systems and process.** Costs recovered by your home network to cover things such as billing arrangements
- **Traffic management platforms**
- **Marketing**
- **Customer care and fault management**



Inputs to IMR services

IMR wholesale service

- Includes the commercial fees the host network charges the home network for enabling the home network's customer to connect to and roam on the host network
- Commercial incentives are competitively negotiated — e.g., discounts on the volume of traffic passed between operators and the net direction of traffic
- Wholesale charges also differ between operators, as network build costs and operational costs are likely to differ

Network-related cost elements

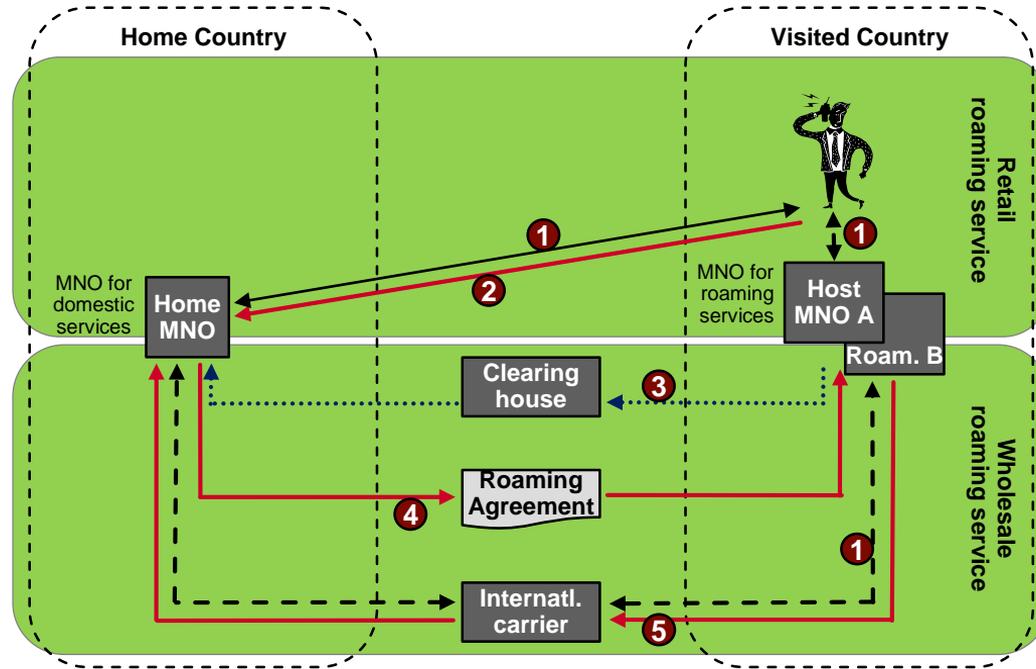
- Data clearing house fees
- Home Location Register and Visitor Location Register
- SMS welcome servers (e.g., welcome messages and pricing updates)
- Fraud prevention measures (e.g., prepay Camel platform)

Wholesale traffic and payment flows

- 1 Roamer makes a call back home via roaming offered by home MNO, using the host network, which in turn uses international carriers to transport the call
- 2 Roamer pays a retail price to the home operator (receiving party does not incur any charges)
- 3 Host network sends TAP file to the Clearing House and forwarded to the home operator on a consolidated basis
- 4 Home operator pays host operator wholesale charges as per volumes in the TAP file and rates in the roaming agreement
- 5 Host network pays the international carrier and the international carrier in turn pays a termination rate in the home country



Commercial links required for international mobile roaming



TAP: Transferred Account Procedure
 Source: A.T. Kearney analysis



Variation of IMR rates

- There is a wide range of roaming rates between countries and regions across the world
- Although some rates are higher, there is clear evidence of lower rates
- Why is there such a variation?



Factors in roaming rate variation

Domestic factors that might explain different roaming rates

- Tariff structure of retail bundles that include domestic call, text messaging and internet access
- Per capita income
- Access of substitutes (may also be a domestic factor)
- Percentage of population that travel internationally
- Growth in tourism and business travel
- Mobile penetration rates
- Different growth rates in mobile penetration
- Differences and level of demand for travel to different destinations
- Structural factors: double taxation, international gateway liberalisation, prepaid route availability

International factors that might explain different roaming rates

- Mobile termination (may also be a domestic factor)
- International transit (may also be a domestic factor – tax on incoming)
- Wholesale roaming rates



Tariff innovation

- The range in roaming rates extends to a diversity in tariff structures
- There is a diversity of IMR tariff structures
 - Price discounts depending on the level of expected usage
 - Price discounts depending of the term of contract (day, week, month)
 - Prices based on using preferred networks
 - Prices linked to either host or home country domestic prices
- Mobile operators are competing on price innovation
 - Daily, weekly, unlimited, capped
 - To provide predictability and assurance
- This means it can be misleading to measure or compare prices on a simple \$X/min or \$X/Mbyte basis



Summary

- IMR is a retail service offered by home operators to their domestic customers.
- Using your phone abroad extends the geographic coverage of standard domestic mobile communications services — calling, text messaging and internet browsing services while travelling.
- There are differences in retail prices for using your phone abroad between countries. Some countries have higher roaming rates and some have lower.
- These differences can relate to the market conditions in the consumer's home country and international factors.
- There is a rich diversity of innovative packages available, which is a good indicator of competition for communication services while travelling abroad.



THANK YOU

