

Mobile Data: A Tradable Commodity

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Trends in Mobile Traffic Monetization

- ▶ A few recent examples
- ▶ Time period: Between late 2013 and early 2015
- ▶ Geographic region: US and Asia



US market

Mobile Share Value Plans with “Rollover” Data Feature

- ▶ **T-Mobile US “Data Stash”**
 - ▶ Announced in late 2014, for selective users
 - ▶ To be used within 12-month period
- ▶ **AT&T “Family Rollover”**
 - ▶ Announced in early 2015, for all users
 - ▶ To be used within following month
- ▶ **Verizon, Sprint – no rollover data (yet)**



Asia market

Data Exchange Platform

- ▶ China Mobile Honk Kong “2cm” platform
 - ▶ Announced in late 2013, for “4G Pro” service users
 - ▶ Allows users to sell their unused data to other users
 - ▶ Unused data is traded in units of 1GB, between \$2 and \$8
- ▶ South Korea (KT’s Olleh)?
- ▶ US: Sprint’s Virgin Mobile Custom Control App



China market

Data Wallet

- ▶ Announced in late 2014
- ▶ Users of China Mobile, China Telecom, China Unicom are incentivized to shop online at Alibaba with rewards for data allowance
- ▶ Similar to credit card points or frequent flier miles
- ▶ Allows users to save, earn, and share data allowances and enables data usage on any of the three participating mobile providers



Mobile Traffic Monetization: Mobile Users and Mobile Operators

- ▶ **Highly dynamic environment for mobile users**
 - ▶ Many of these features have been introduced in the last year
 - ▶ New features are typically introduced as “win-win” situation for end users, mobile providers, and e-commerce companies ...
 - ▶ The latest features have a clear goal – turning mobile data into a tradable commodity
- ▶ **Highly static environment for mobile operators in the US**
 - ▶ Regulatory hurdles for traffic differentiation
 - ▶ Operational hurdles for supporting proposed traffic monetizations
 - ▶ Social hurdles (e.g., unknown user behavior, user privacy)



Mobile Operators' Options (today)

- ▶ One size fits all ...
 - ▶ Today's mobile providers (in the US) would have no(?) legal options to give **the traffic associated with its mobile shared value plan users** preferred treatment over **the traffic associated with its data wallet users**
 - ▶ Today's US interconnection marketplace has a dominant player (i.e., Equinix) that has influenced the price and type of the predominant interconnection option (i.e., **private peering** or **“cross-connect”** at some \$350 per month per cross-connect)
- ▶ The Internet Exchange Point (IXP) marketplace in the US remains under-developed, with very limited opportunities for alternative interconnection options (i.e., public peering)



Mobile Provider's Options (tomorrow?)

- ▶ The **Open-IX initiative** www.open-ix.org (launched in late 2013) is trying to drastically increase the number/types of interconnection options by innovating the IXP marketplace in the US
- ▶ The resulting interconnection options would include
 - ▶ Private peering (“cross-connect”) at much reduced price
 - ▶ Bi-lateral public peering at IXPs
 - ▶ Multi-lateral public peering at IXPs (via the IXPs’ route servers)
- ▶ In this new environment, mobile provider could use private interconnections for one type of traffic (mobile share value plan users) and public interconnections in the form of multi-lateral peerings for data wallet user traffic



Concerns and Issues

- ▶ NN rules and interconnections
- ▶ Positive experience in Europe (parts of Asia) with richer and more flexible options for interconnection
- ▶ Common perception (US)
 - ▶ Private peering: the “gold standard” (expensive, good performance)
 - ▶ Public peering: the “poor man’s choice” (cheap, poor performance)
- ▶ Ongoing research efforts
 - ▶ Is this common perception correct?
 - ▶ Empirical evidence suggests a less black-and-white picture

