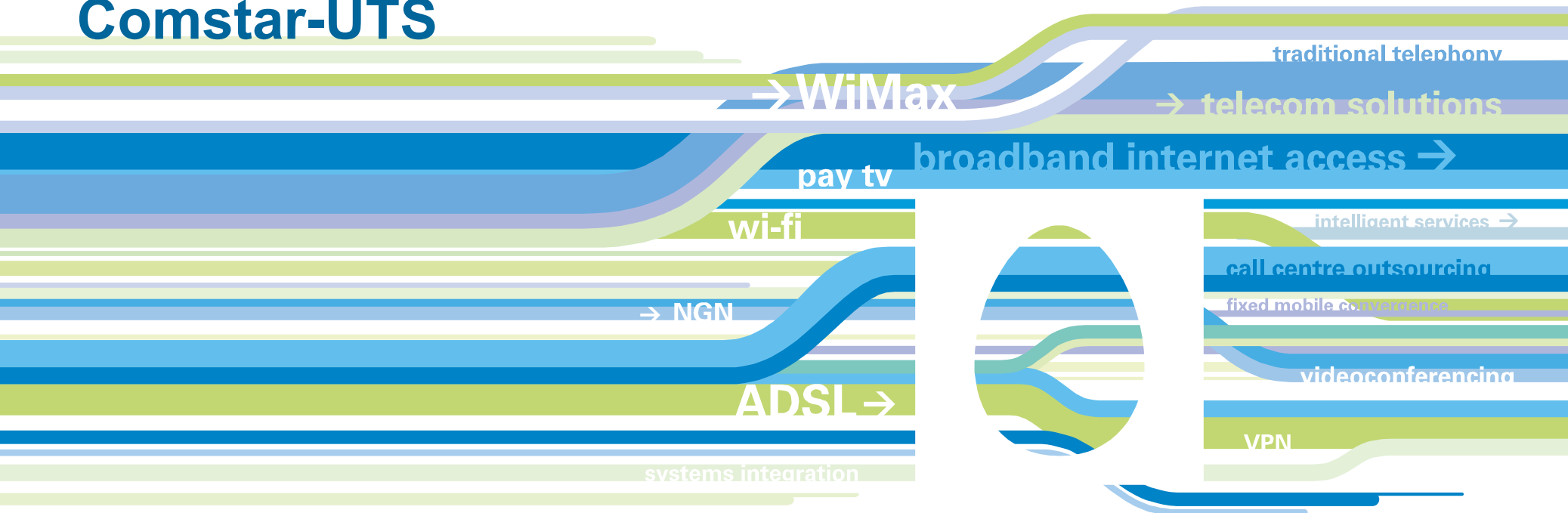
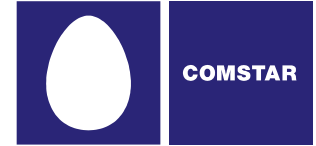




Capitalizing Upon Prospects for Embedded WiMax Chips: Breaking Down Barriers To Entry To Create The Ultimate “Free CPE”

Alexander Gorbunov
VP Strategy & Development,
Comstar-UTS



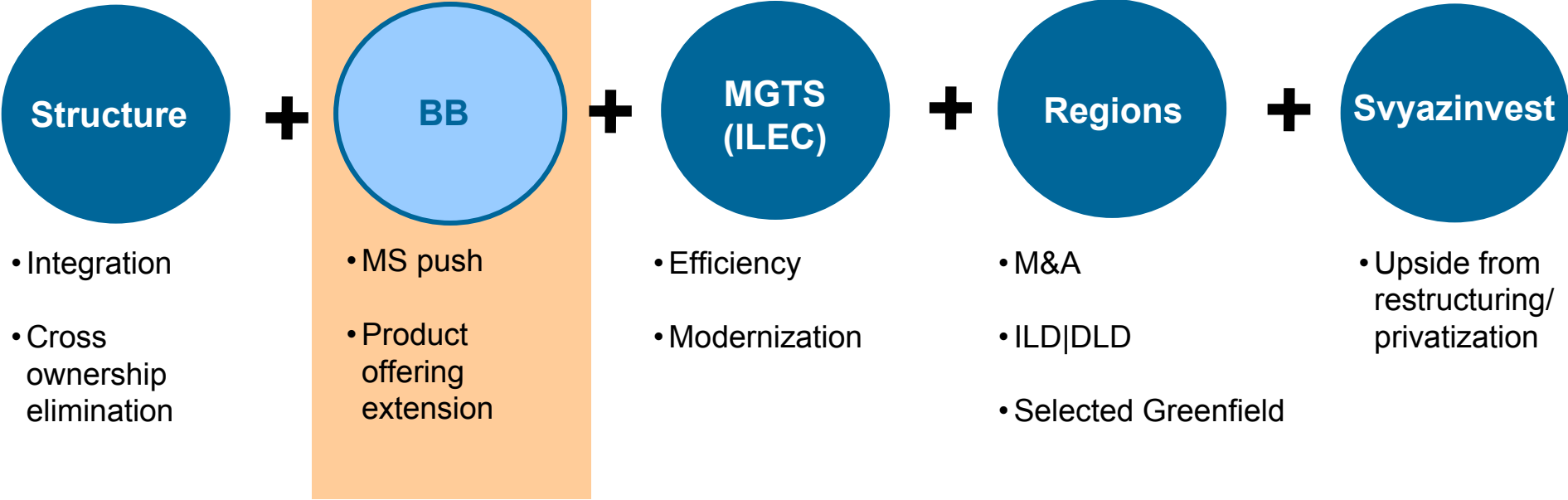


- 1. To introduce Comstar**
- 2. To explain why Comstar develops WiMax**
- 3. To cover Comstar WiMax strategy in Moscow and regions**
- 4. To discuss WiMax vs. 3G (from Comstar prospective)**
- 5. To explain CPE importance for markets like Russia**



- Fixed line operator (ILEC+CLEC+ISP) with Revenues of \$1,5 BN+
- London Stock Exchange listed (CMST), MCap \$4 BN+
- Leader of Moscow BB market with 750 k subs
- Owner of 25%+1 package for Svyzainvest

Strategy: "Five Angles"

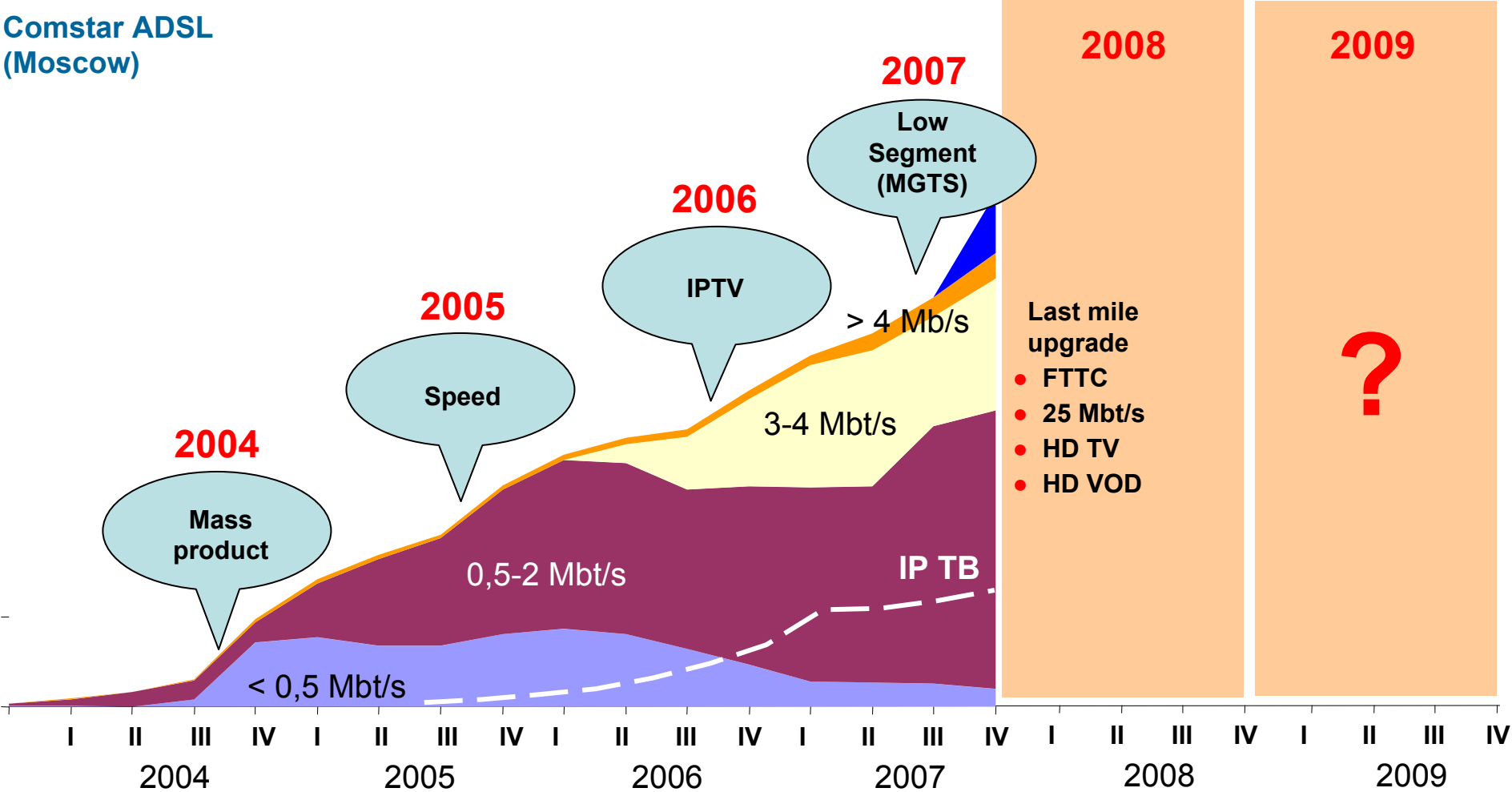


Broadband development is one of key pillar for our strategy

BB Subs in Moscow



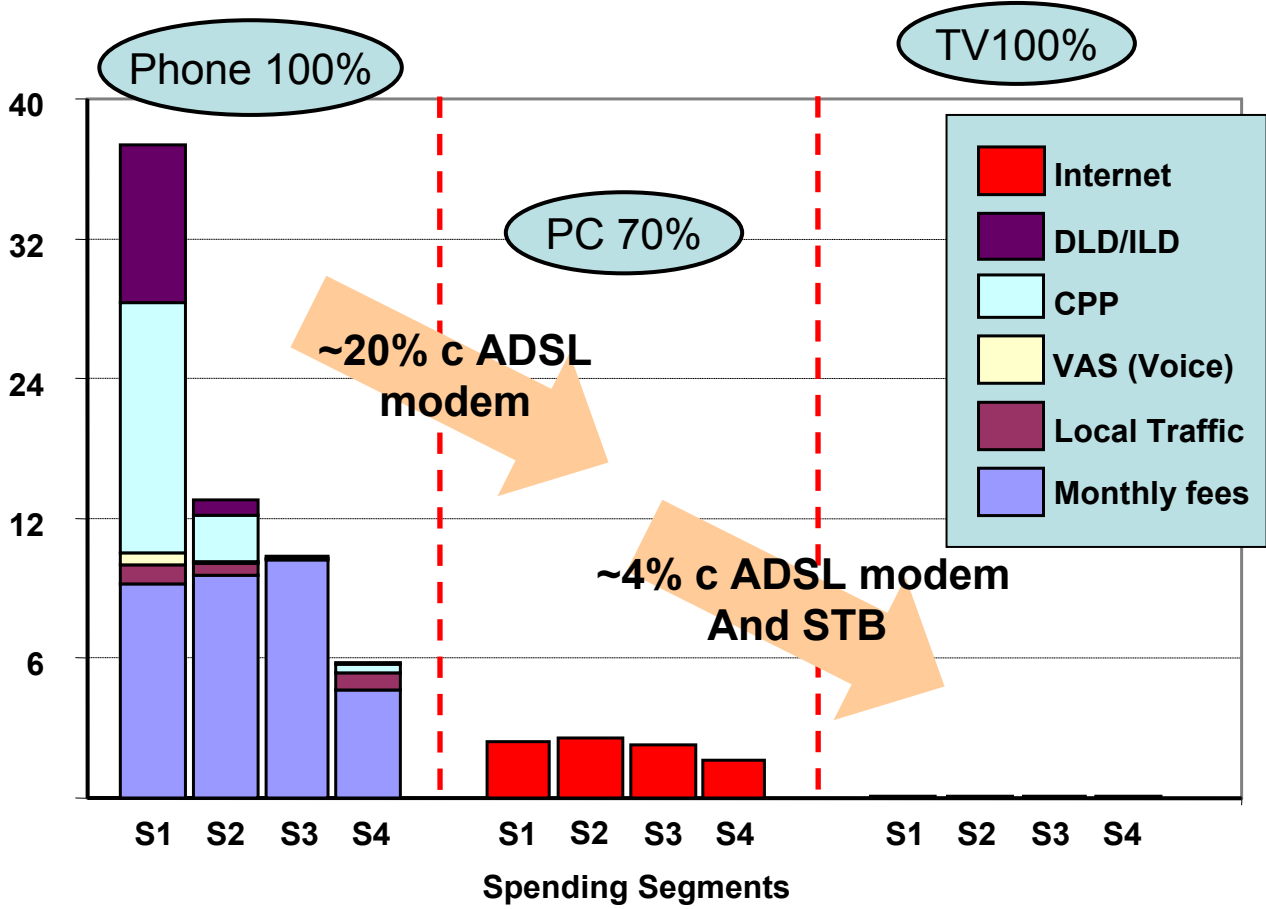
Comstar ADSL (Moscow)



Broadband market in Moscow has got to 50%+ penetration level and quickly approaching saturation



Spending for Comstar services per HH (\$/month)

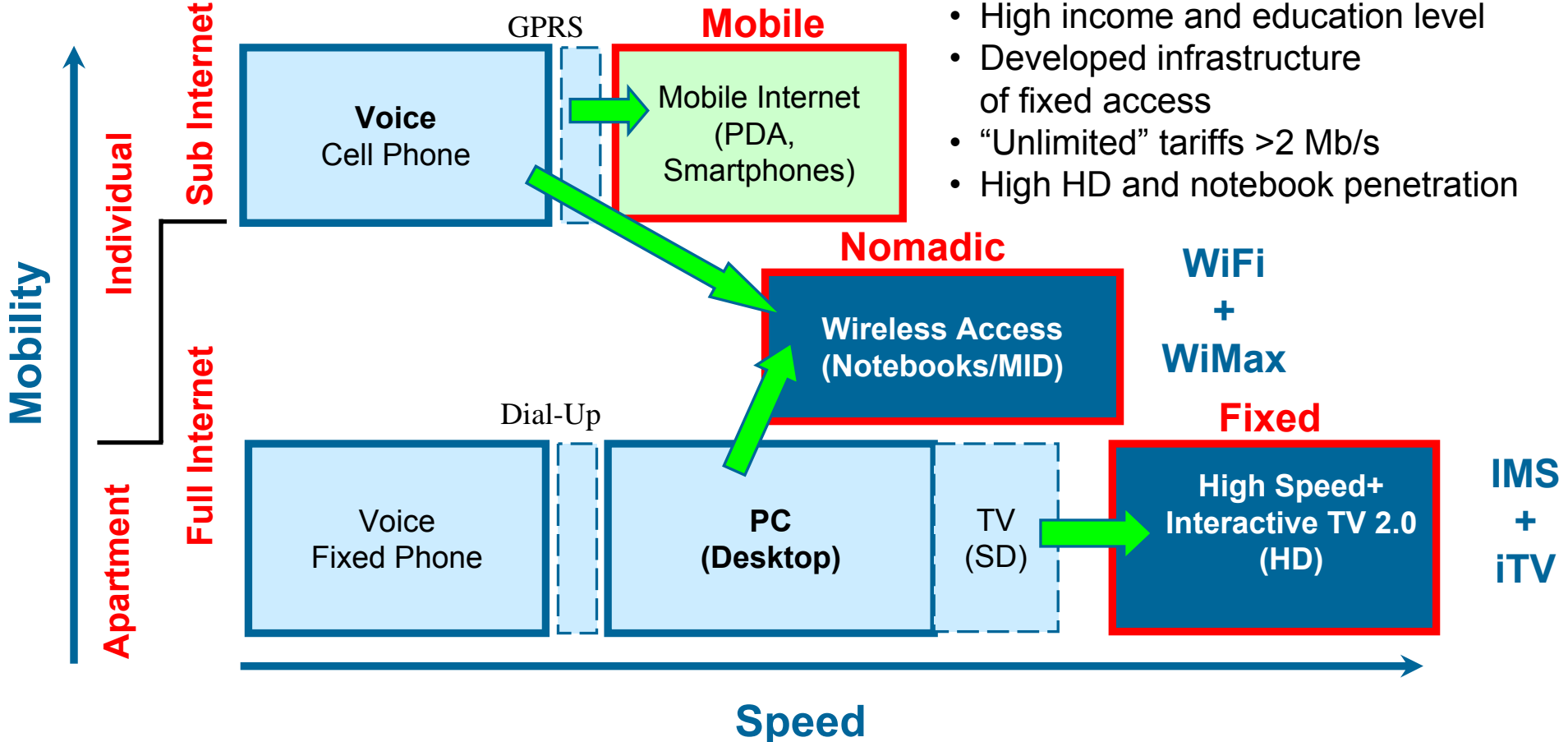


Barriers for growth:

- High cost of devices (especially STB)
- Difficult installation procedure
- Flat Fee tariff structure
 - Voice revenues are 90% from access despite "3 tariffs"
 - Internet tariffs are "all you can eat" bundles with low price elasticity at speed of 1-2 Mbt/s+

Revenue growth is limited. Both voice and BB are flat rate services where ARPU stimulation potential is limited

New Segments: Growth Opportunities



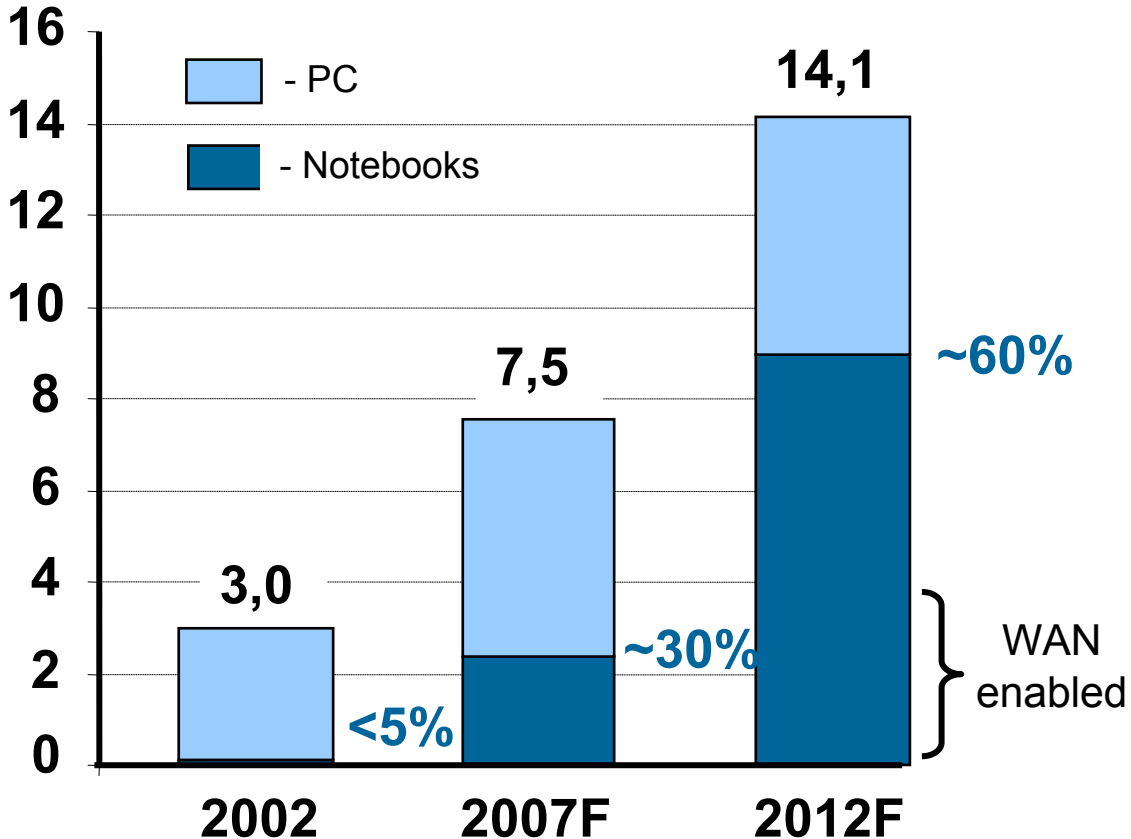
Developed Market (Moscow)

- High income and education level
- Developed infrastructure of fixed access
- “Unlimited” tariffs >2 Mb/s
- High HD and notebook penetration

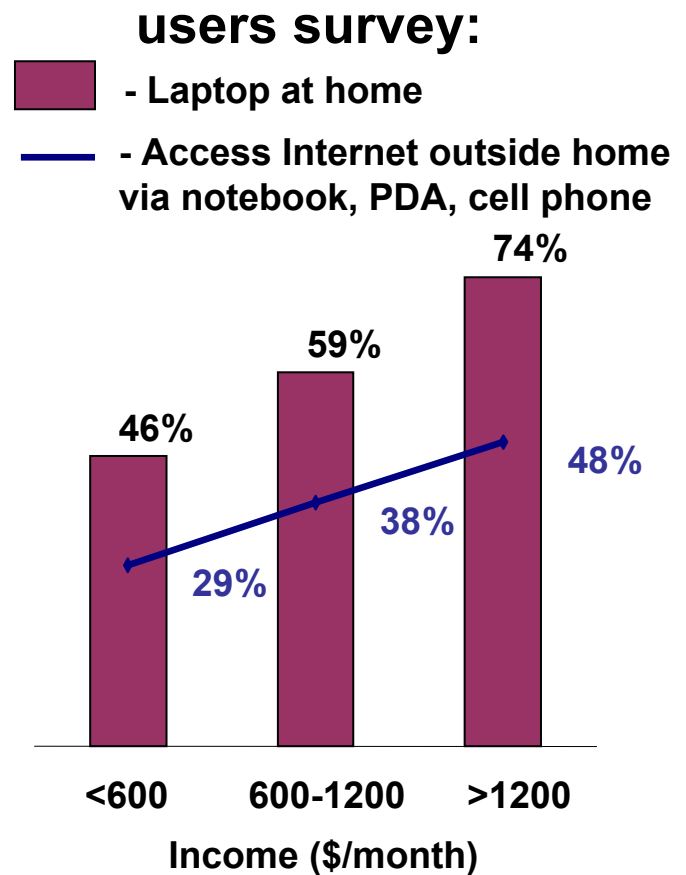
BB market develops in three directions as access devices are fundamentally different and provide different customer value



PC Sales, Russia (m)



Latest Comstar ADSL users survey:




PC sales are growing with laptops increasing share. Moscow as the most advanced market very high penetration of PC and notebooks. Connectivity to Internet around the clock in every place is a natural expectation



WiMax



- Push laptop with embedded WiMax solution on the large scale
- Co-market with Comstar WiMax services



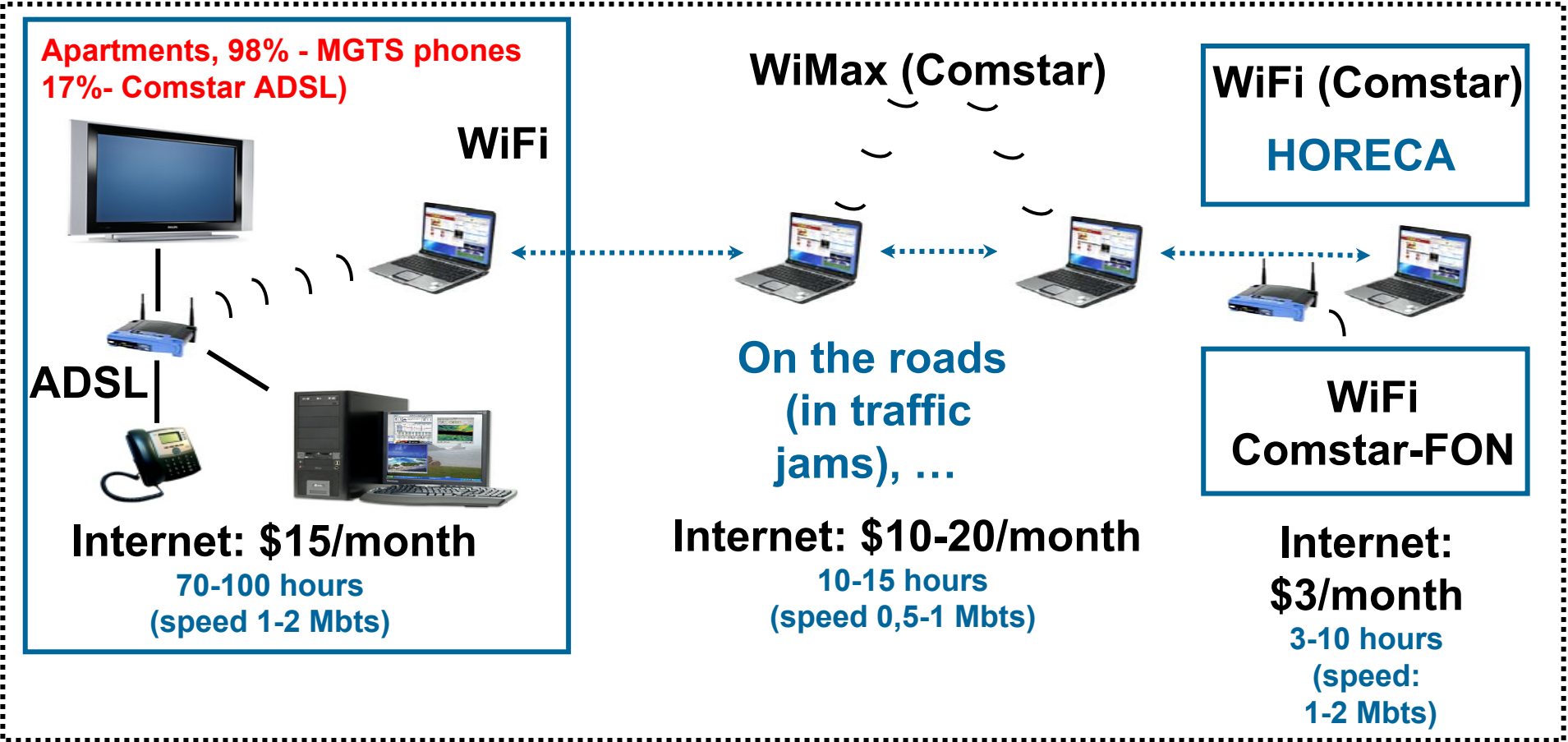
- Build WiMax network in Moscow
- Distribute FON WiFi routers to its Broadband client base
- Market services to its Broadband client base

WiFi

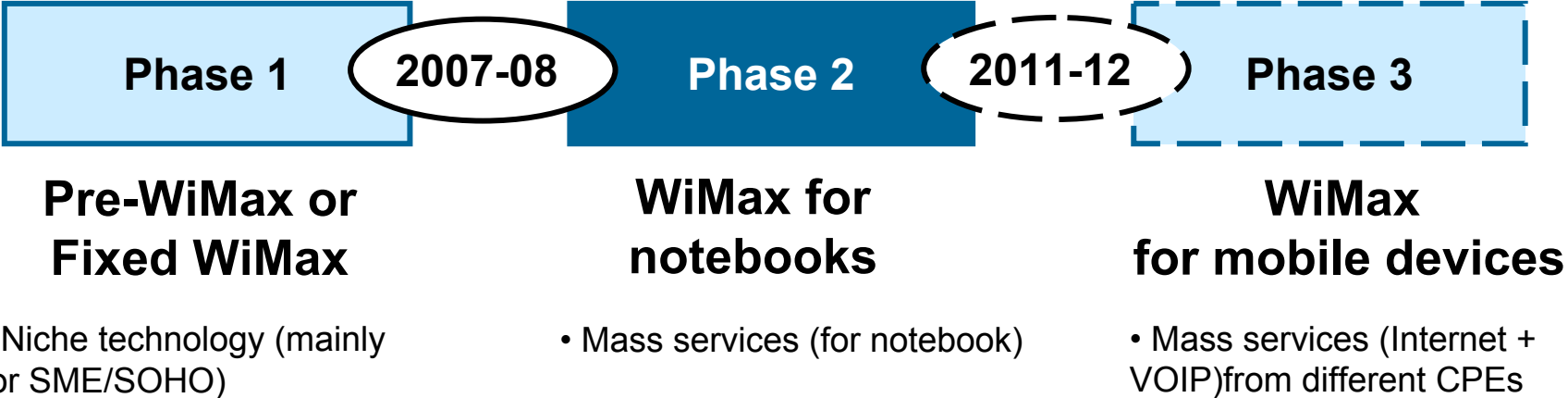


- Build global WiFi client mesh network
- Routers with two separate areas: private and public

Comstar has secured a number of strategic partnerships to address the market



Moscow business model assumes extension to ADSL with giving connectivity anywhere though WiFi / WiMax networks managed through single account



• We do not see significant difference between WiMax and 3G in network efficiency
• We are building “Large WiFi”, not another cellular network (no voice, TV)
• We believe Fixed Operator could out compete Cellular players with external devices (USB dongles)

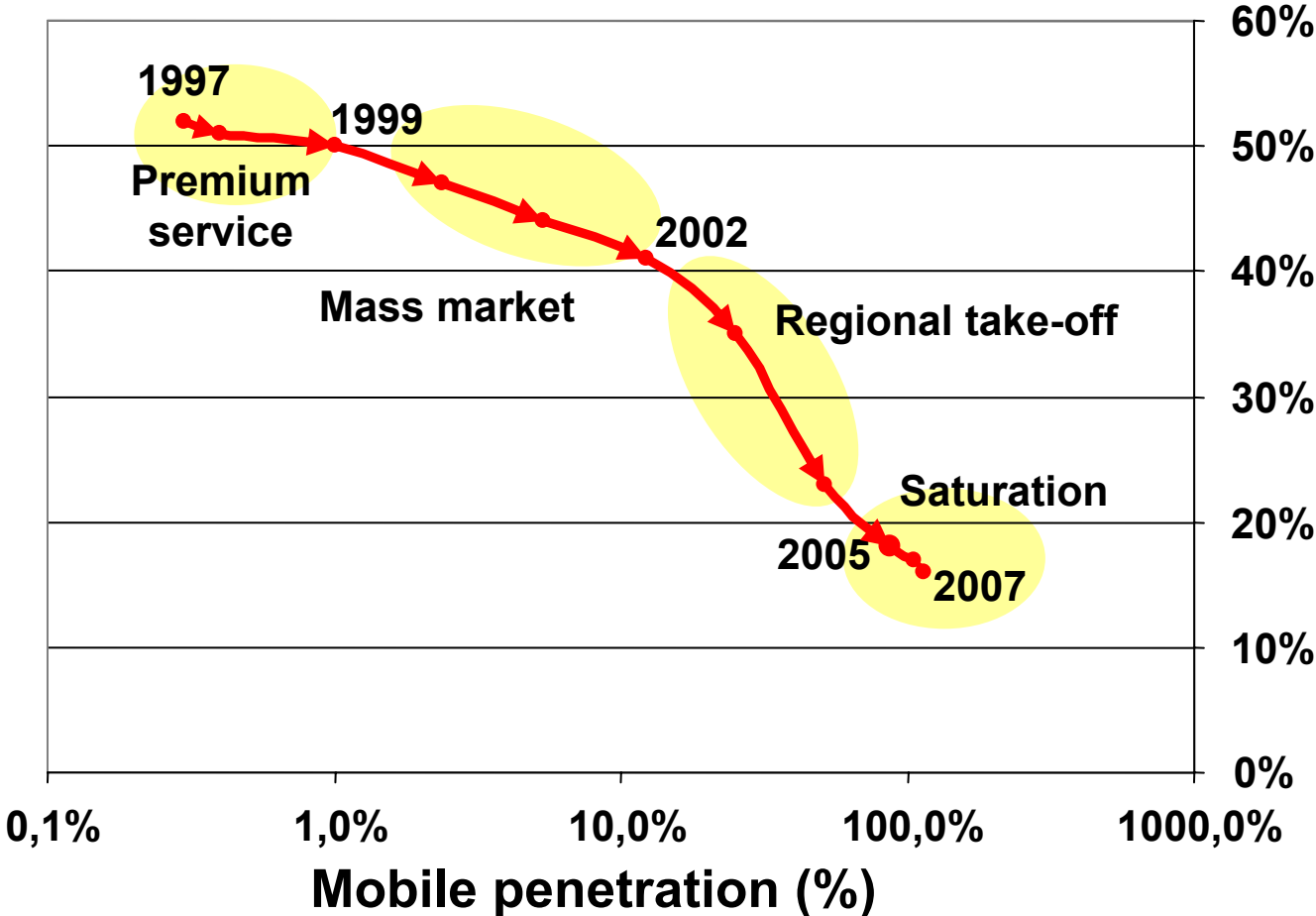
... BUT

• We believe that we can provide much better and cost effective indoor coverage
• We believe that customer want single operator and account for it’s Full Scale Internet access
• We believe that embedded can provide simplicity and convenience necessary for mass adoption

Potential for embedded WiMax in laptops is the reason to go with WiMax network



Moscow subs. share



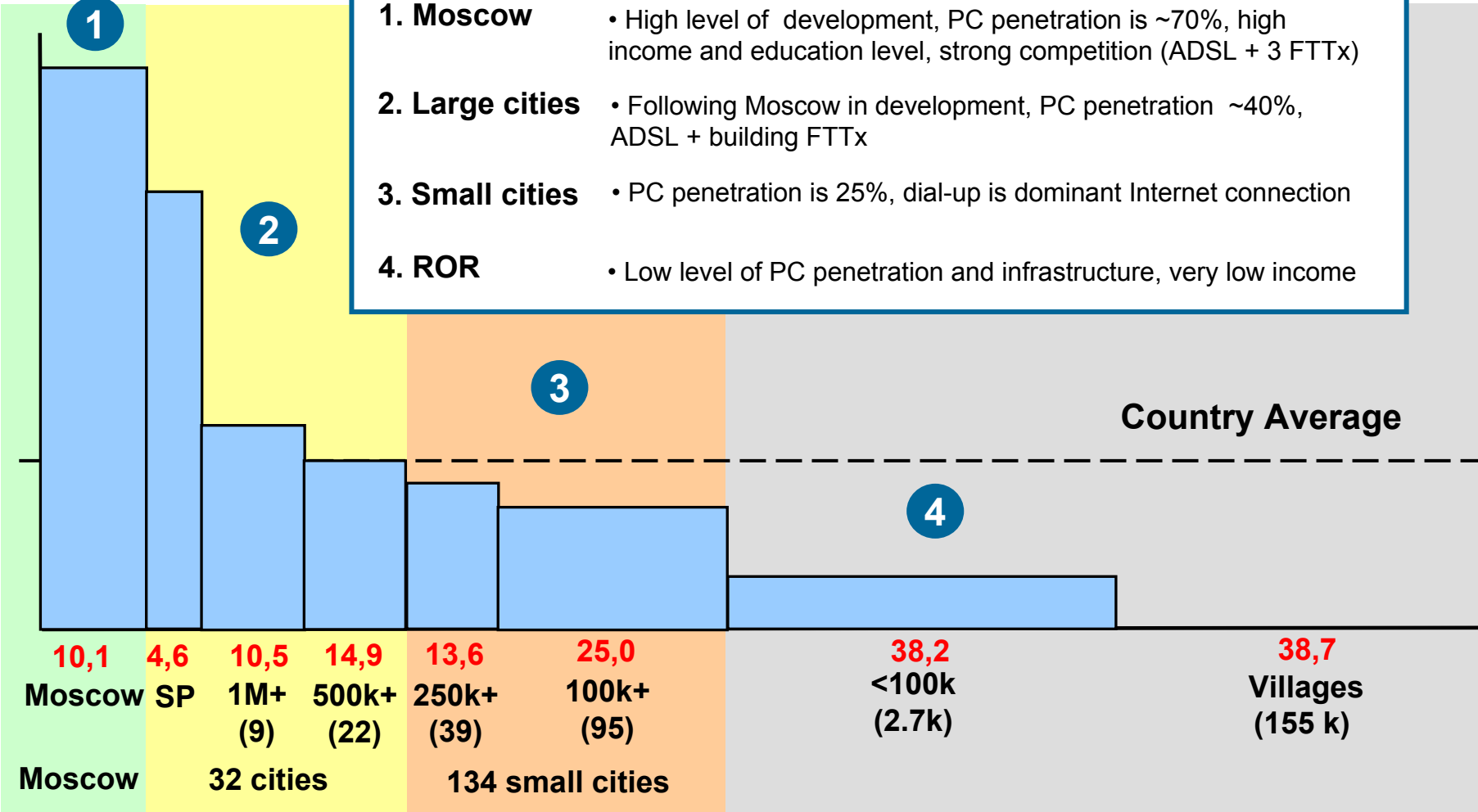
Mobile industry lessons

- No enforceable contracts and thus no handset subsidiaries
- Handset market is extremely competitive (with 400+ model on the market)
- No successful launch of operator customized phone
- Profitable operations with low ARPU level (a few dollars per month)

Mobile industry experience shows that Moscow dominant players became national leaders once the product reached mass market. Comstar will be the leader in Moscow market



Internet Usage Index

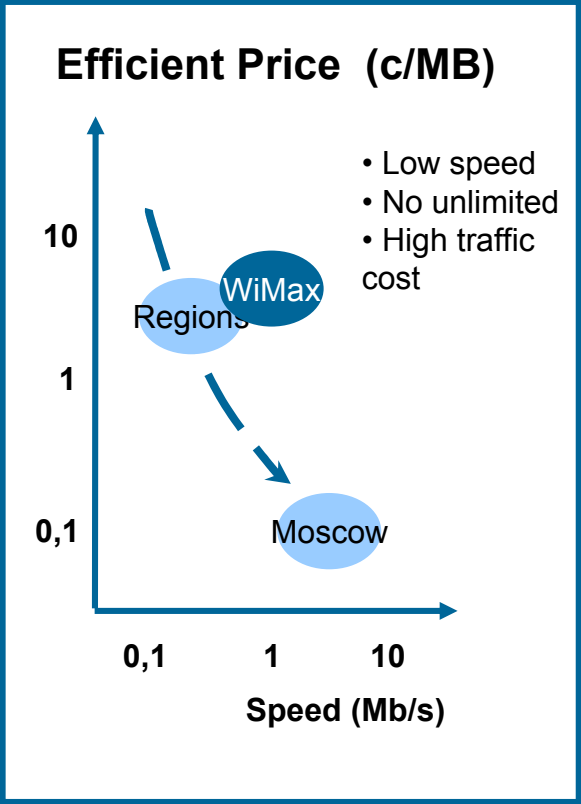
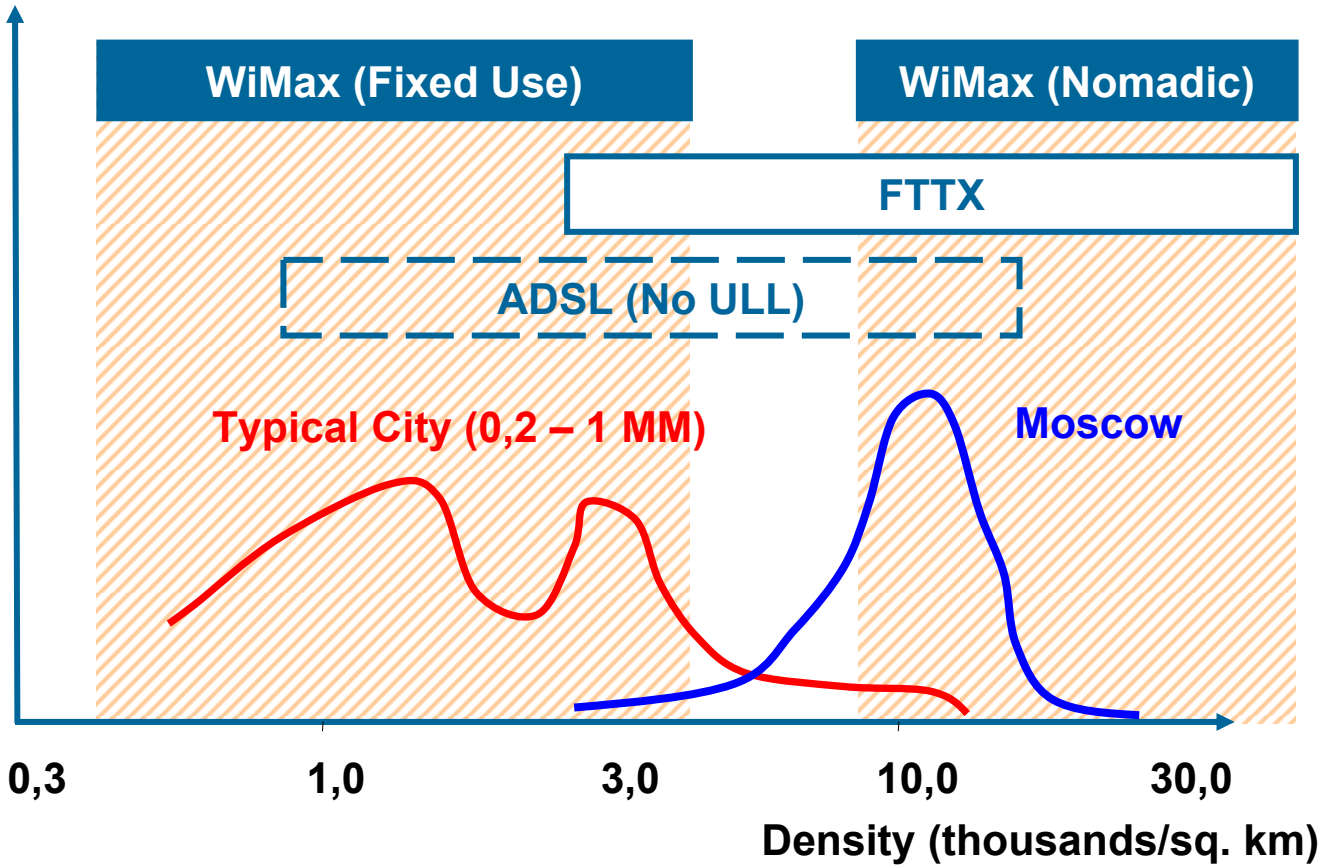


- 1. Moscow**
 - High level of development, PC penetration is ~70%, high income and education level, strong competition (ADSL + 3 FTTx)
- 2. Large cities**
 - Following Moscow in development, PC penetration ~40%, ADSL + building FTTx
- 3. Small cities**
 - PC penetration is 25%, dial-up is dominant Internet connection
- 4. ROR**
 - Low level of PC penetration and infrastructure, very low income

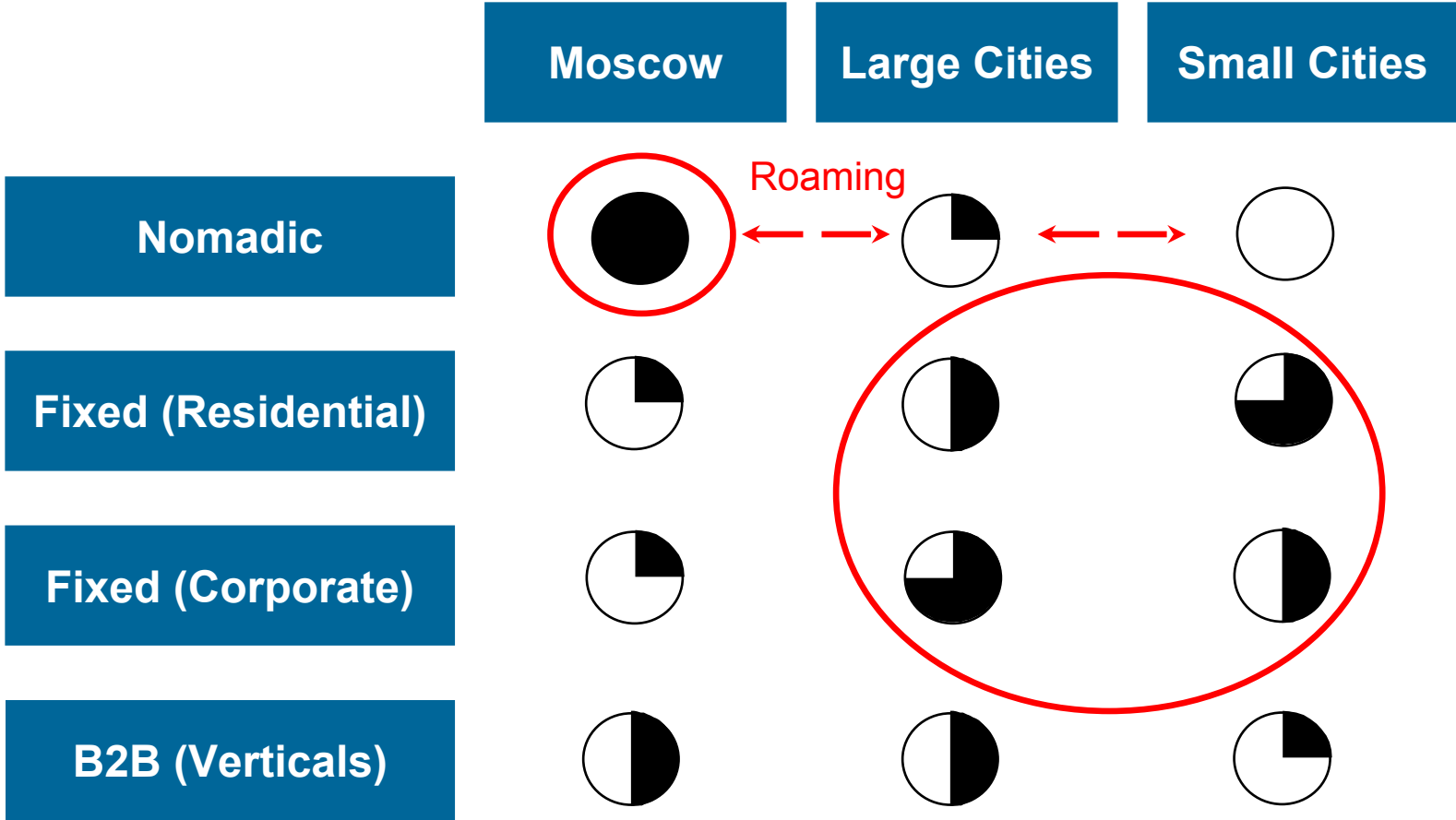
Like many emerging markets, Russia consists of a few different “worlds” from business prospective vastly different in urbanization and income



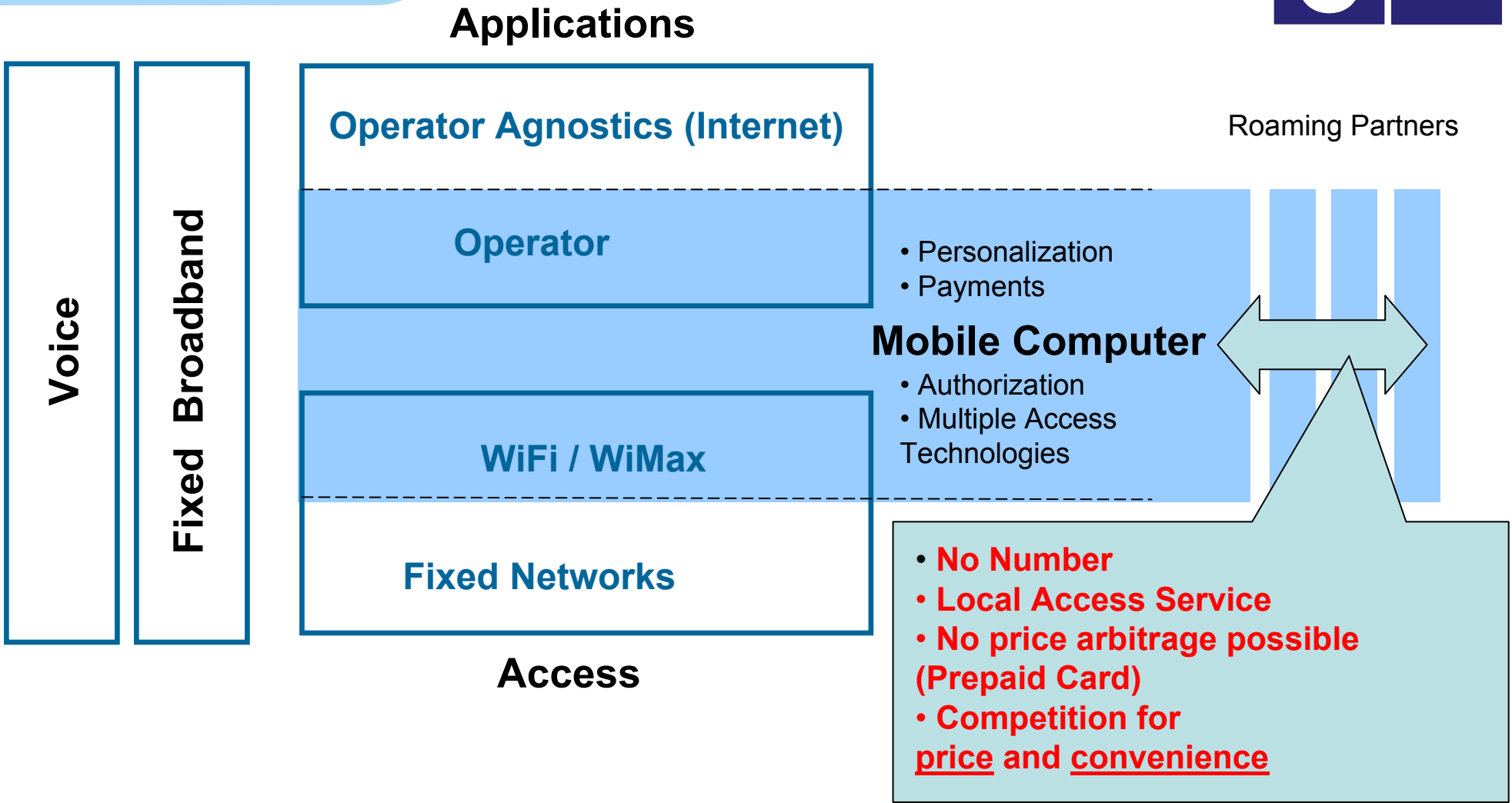
Population density



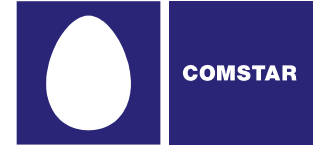
In the regions WiMax opportunity is ADSL replacement as all cities has large portion of population living in low density areas where FTTx is not feasible



Stationary use of WiMax in the regions is also a roaming platform for nomadic WiMax use by laptop users



In “Real Internet” phase access will become commodity and most of applications are operator agnostics in nature. Managing multiple access networks in simple and cost effective manner give an operator control over the customer interface



Optimist Position

1. High take-up rate for embedded devices once technical issues resolved
2. Integration with WiFi stimulating quick adoption
3. Enough scale and momentum to get equipment/CPE cost to the acceptable level
4. New segment (data only devices) emerging

Pessimistic Position

1. Network physical laws are the same, so no technological advantage over other technologies in the long run
2. 3G scale and market power is unbeatable
3. Very low level of standardization and too much variety (while time to market and momentum is crucial to success)

It's a global game where we want to become dominant Russian player in optimistic scenario and drive (to the extent possible) the optimistic scenario to happen