ITU ADVANCED LEVEL TRAINING

Strategic Costing and Business Planning for Quadplay

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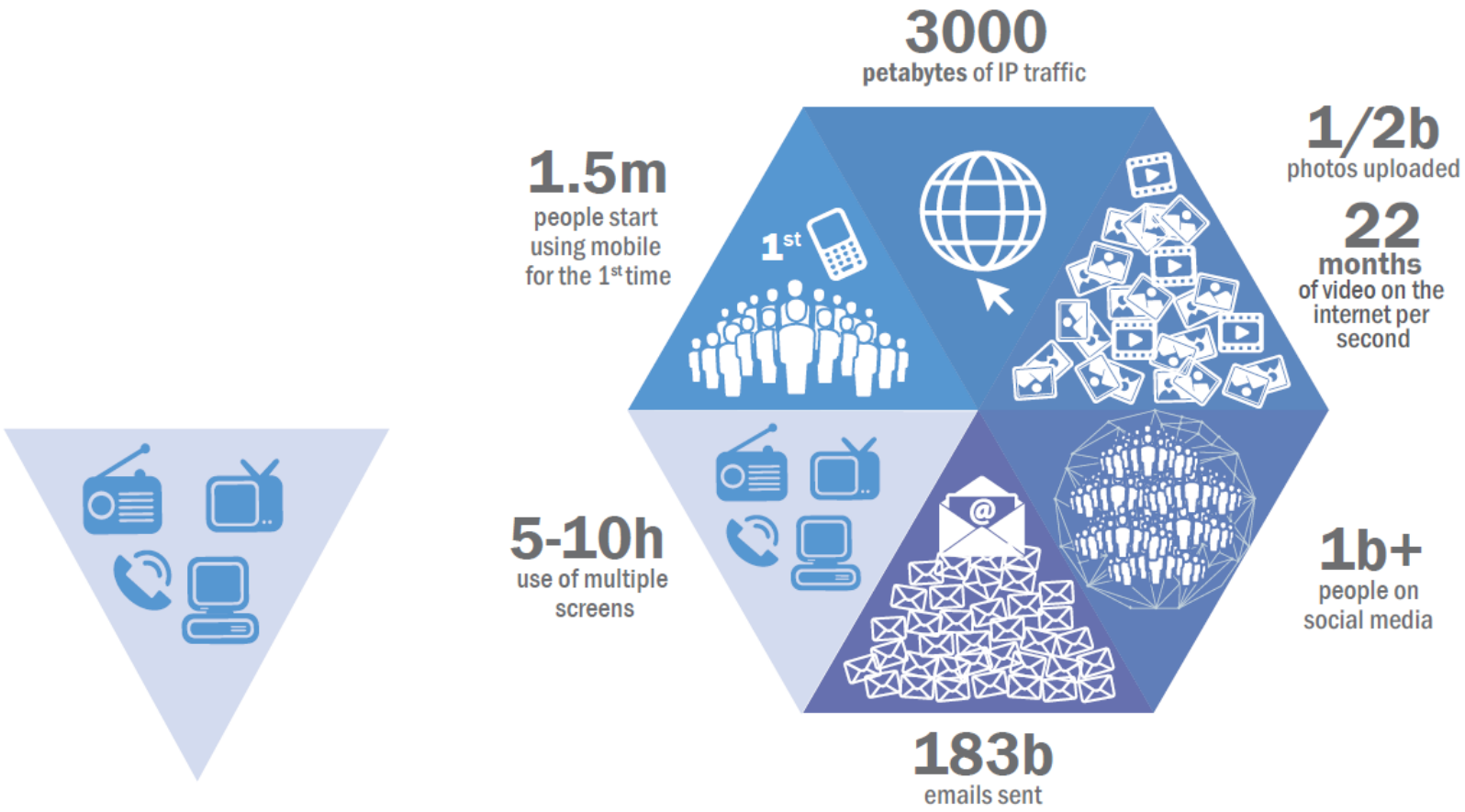
Session 1: Convergence in Practice – Trends, Issues and Challenges

Agenda

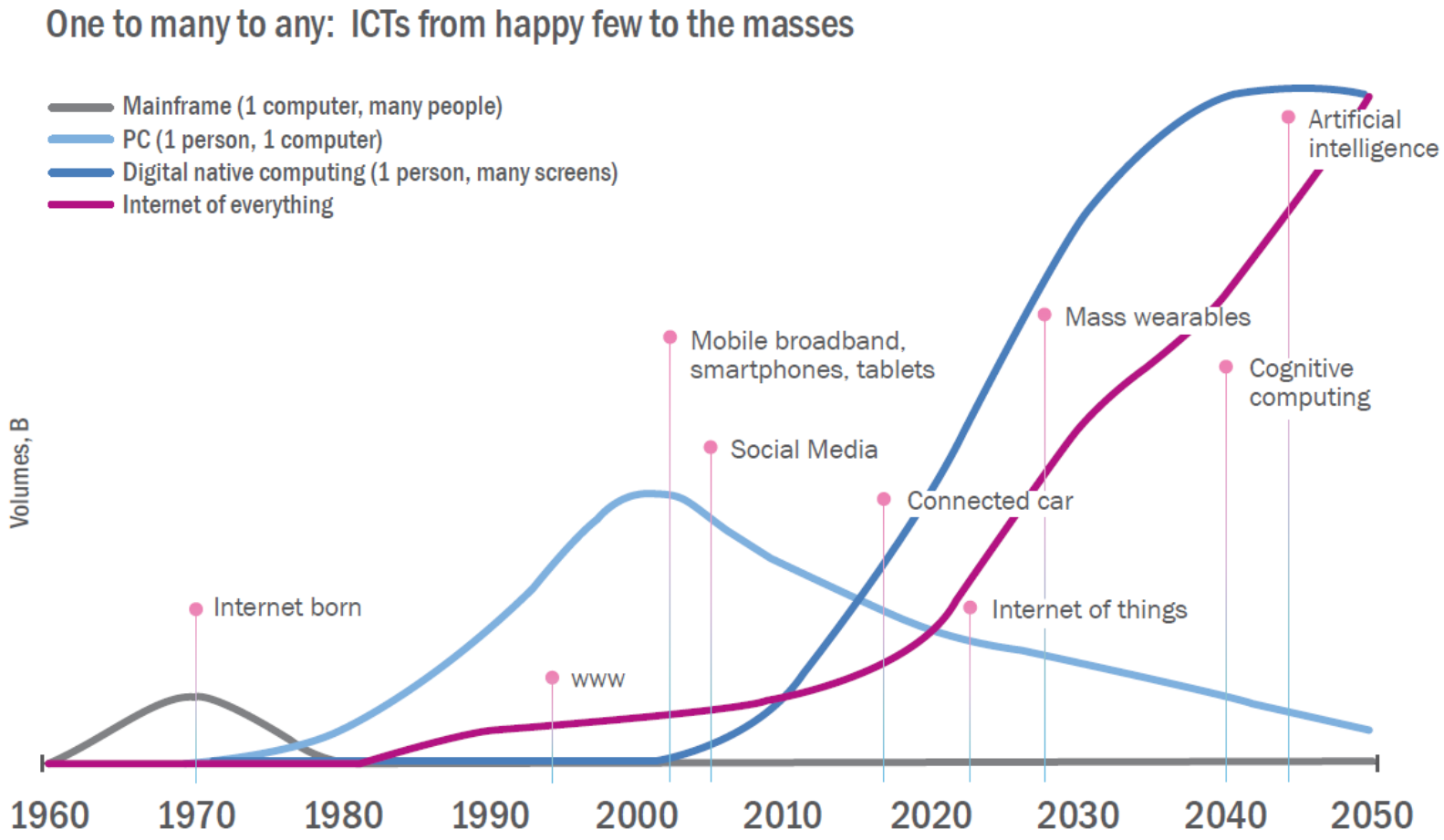
- The changing face of ICTs
- Market trends
- Converged networks and services
- Commercial implications for traditional telcos
- Case study: over-the-top applications

A day in the [digital] world

1994 → **2014**

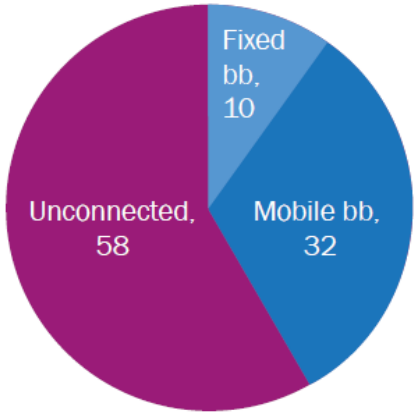


History of the future

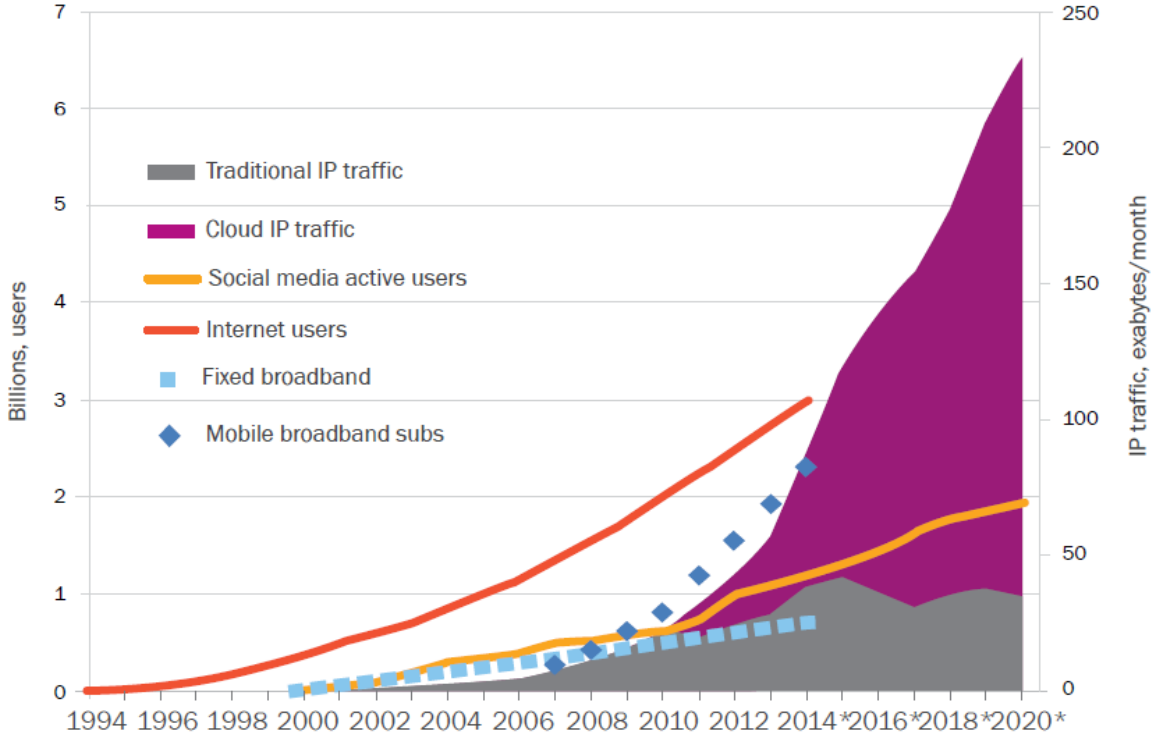


Growing digital

Digital haves vs. have-nots, 2014 %

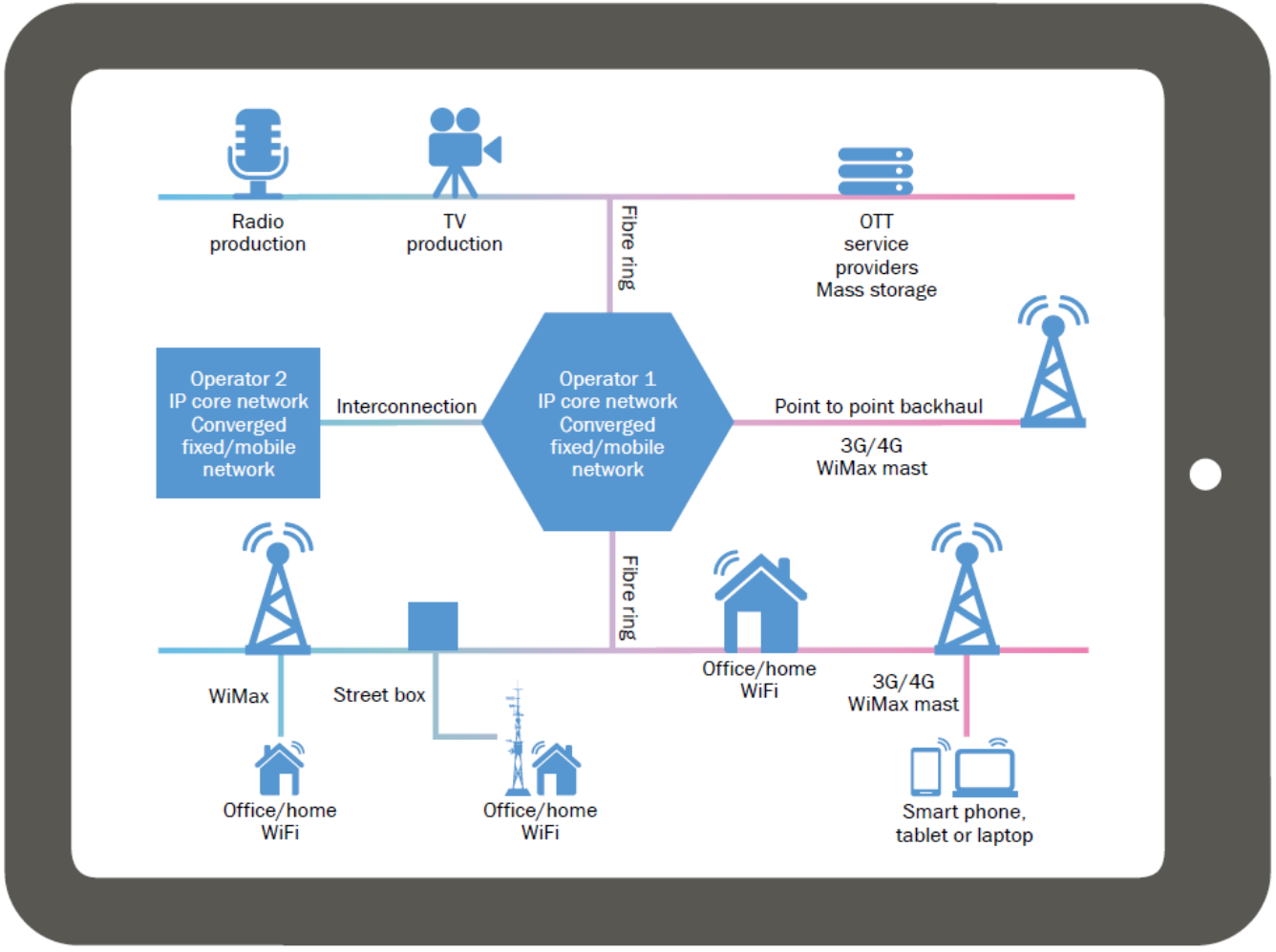


Growth in internet usage

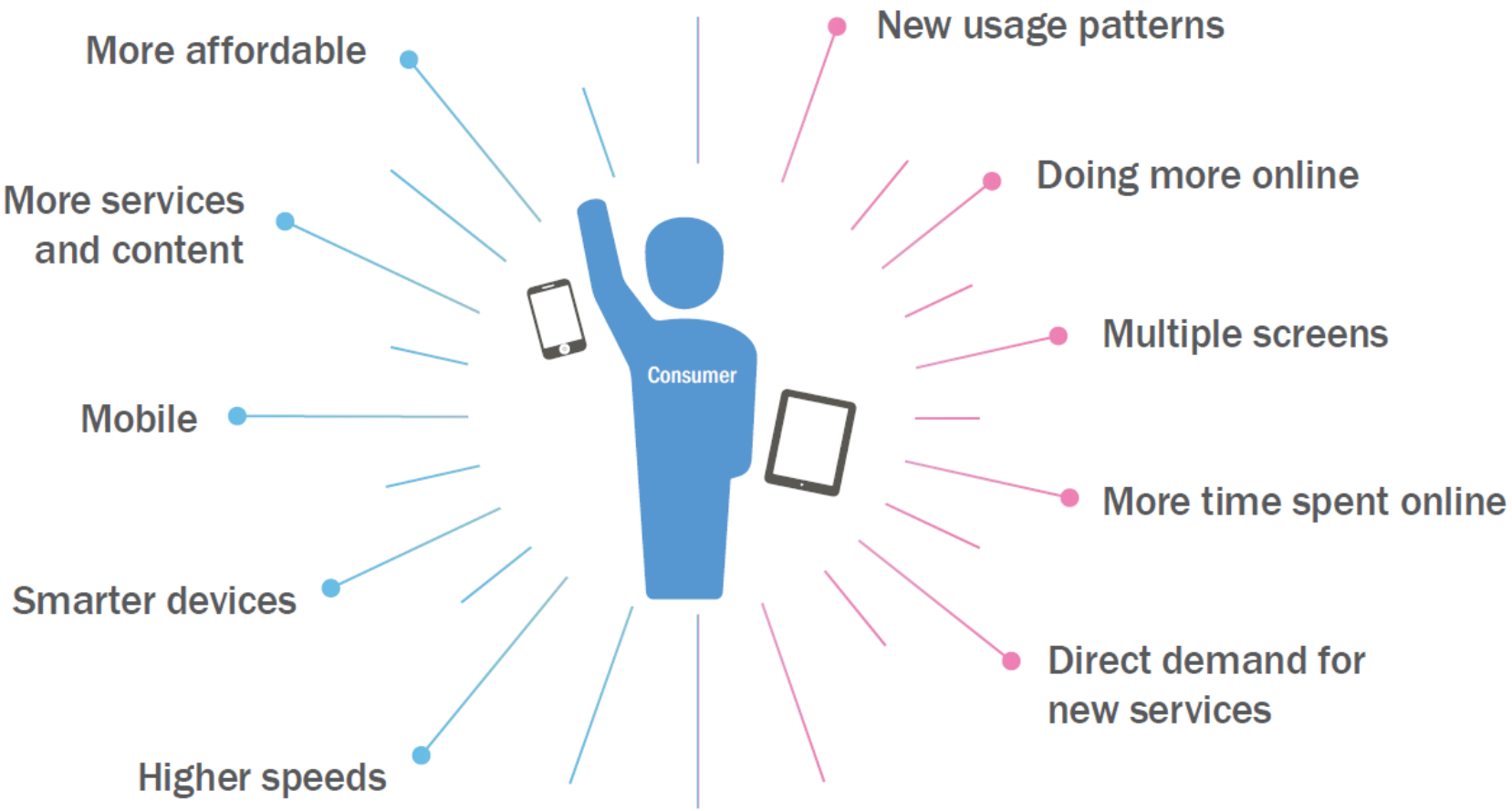


The sky is the limit

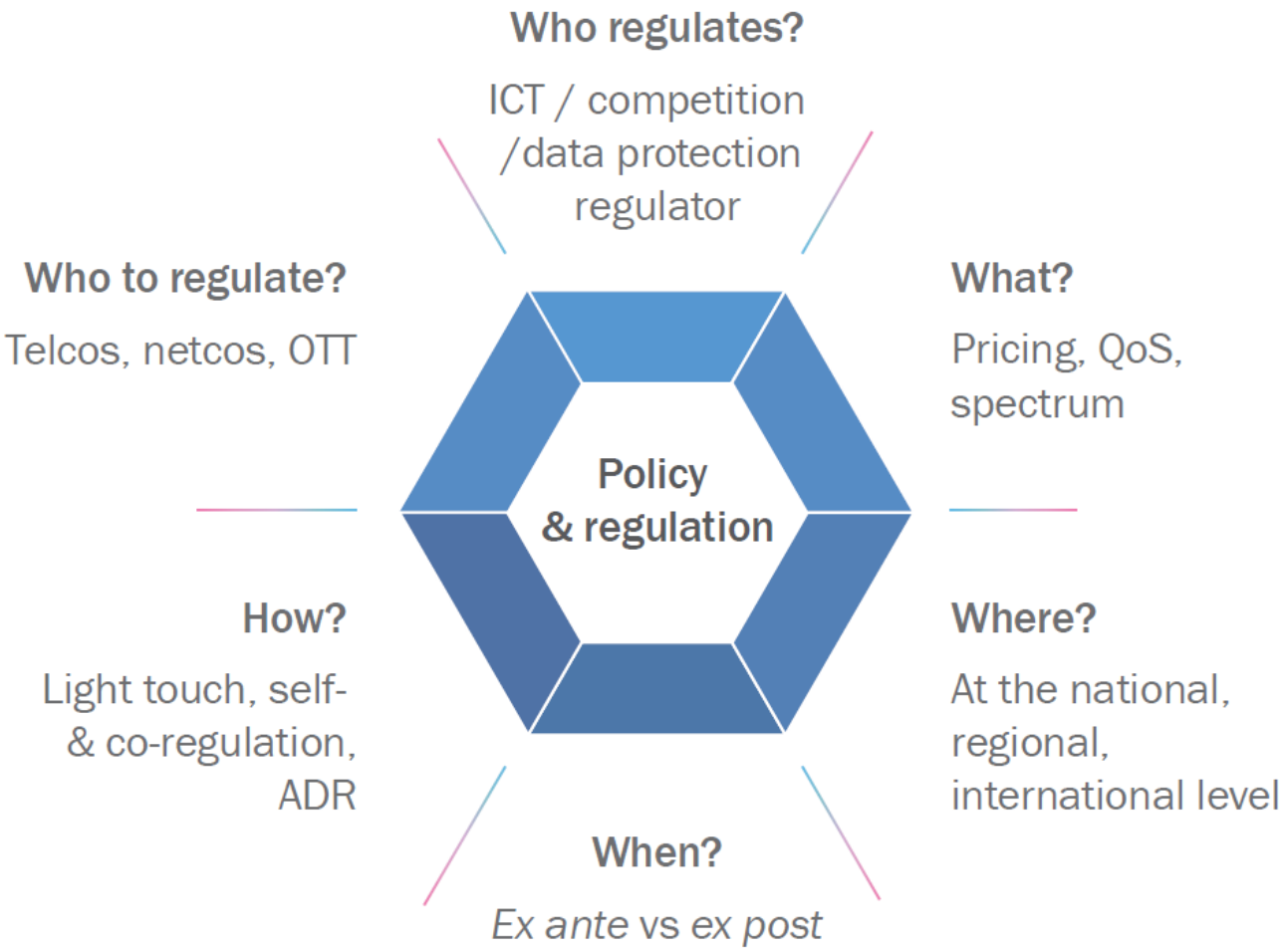
A selfie of the ICT sector today



Who's got the power?



6 shades of regulation



Converged world – cross delivery platforms..

Terrestrial Television

Cable Television

Satellite Television

IPTV

Over The Top

Mobile Television

Connected Television

Standalone / Triple / Quad Play carriage network

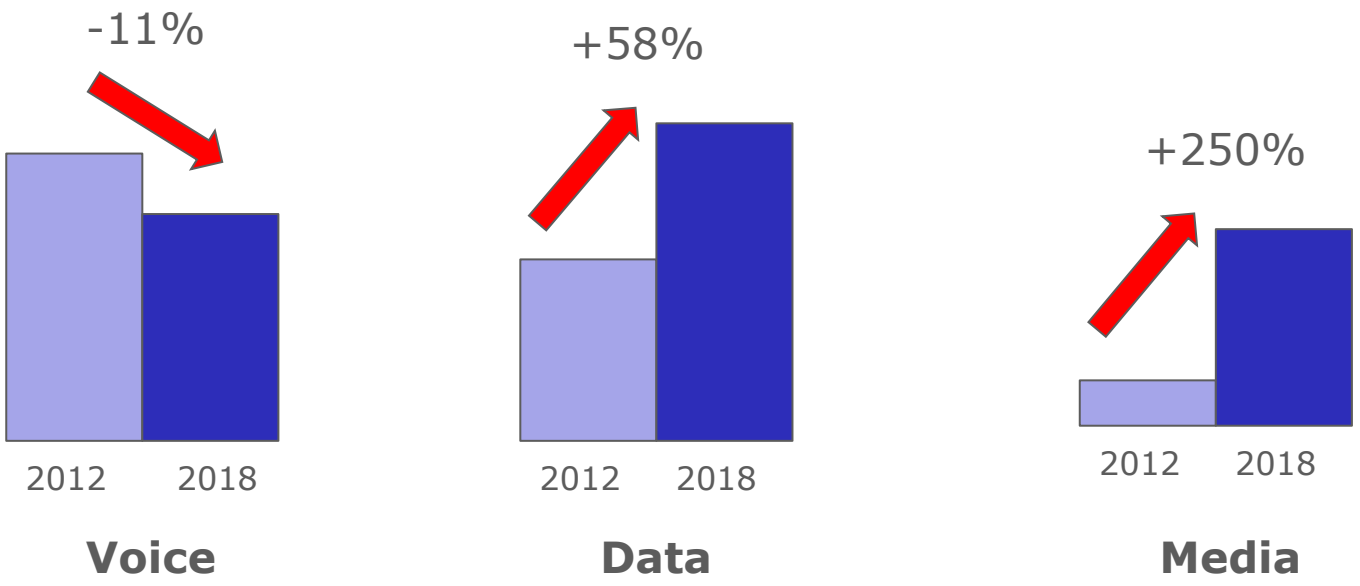
Packaging examples

Table 2. Swisscom LTE mobile broadband service (NATEL)

infinity XS	infinity S	infinity M	infinity L	infinity XL
				+ Saving data via the internet
			+ Uploading HD videos + photo albums	
		+ YouTube + Live TV + Route planner + Streaming music		
	+ SBB[35] + Facebook + News and Weather + E -Mail			
E-Mail without attachment				
Download (up to): 0.2 Mbit/s	Download (up to): 1 Mbit/s	Download (up to): 7.2 Mbit/s	Download (up to): 21 Mbit/s	Download (up to): 100 Mbit/s
Upload (up to): 0.1 Mbit/s	Upload (up to): 0.5 Mbit/s	Upload (up to): 1 Mbit/s	Upload (up to): 2 Mbit/s	Upload (up to): 10 Mbit/s
USD 39.10/month (CHF 59)	USD 49.70/month (CHF 75)	USD 65.60/month (CHF 99)	USD 85.50/ month (CHF 129)	USD 112 /month (CHF 169)

Source: OECD, Swisscom (USD conversion using PPP)

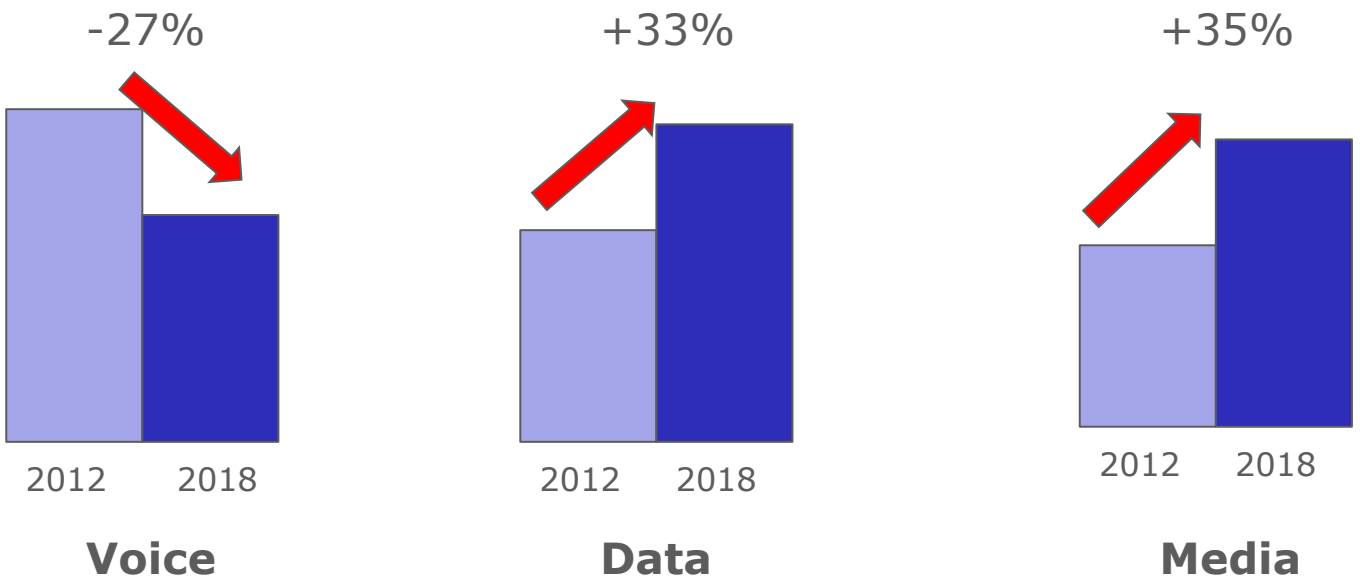
Market trends – mobile networks



Global mobile data and media are growing rapidly

Source: Ovum, global market forecasts, 2013

Market trends – fixed networks



While fixed voice continues to fall, data and media are growing

Source: Ovum, global market forecasts, 2013

Major impacts of the market trends

- Growth in high-bandwidth applications at expense of low bandwidth
  - e.g. more than 100% CAGR for mobile traffic in Korea 2010-2014.
- Convergence of all applications on a single network platform:
  - Fibre PON or xDSL in the fixed Access Network (mainly FTTC but FTTH in high density areas)
  - 3G/4G mobile with fibre to cell sites and off=loading to wifi where possible
  - Converged all-IP Core Network (with QoS differentiation)
- Service Platform – content delivery network
  - Centralized content delivery for “cold” contents
  - Distributed content delivery for “hot” contents

The commercial imperative of multiplay

Erosion of margins

- Voice is almost dead
- Broadband access is a commodity

Competitive pressures

- Cable company triple- and quad-play offers
- Customers increasingly demand bundled offers
- Response to OTT applications

Network amortization

- Need to recover investment in fibre access and IP core networks

The commercial benefits of multiplay

Reduce churn

- Bundling increases “stickiness” in the market: from >30% to <10%
- Harder for subscribers to defect – maintain usage of fixed wire access

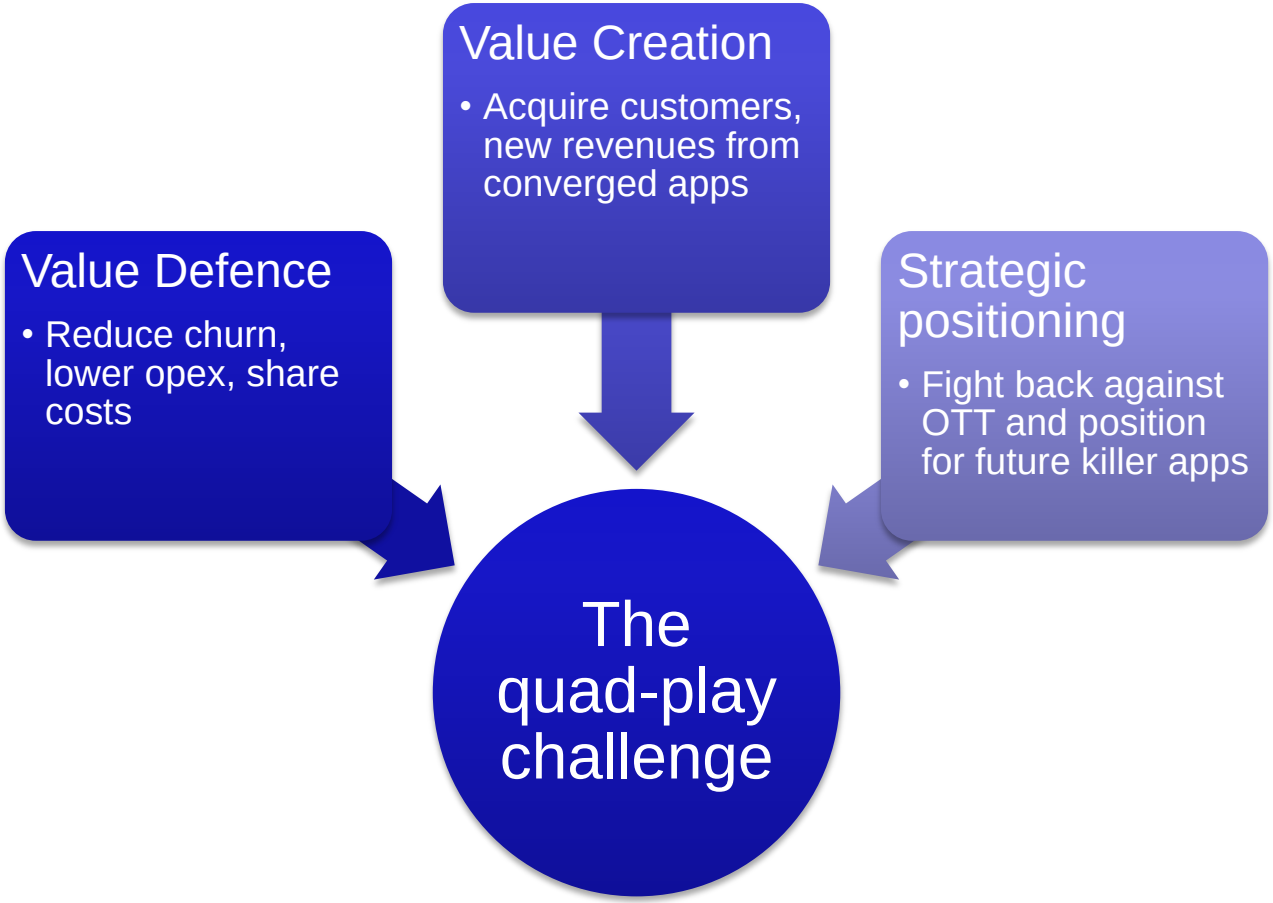
Increase ARPU

- Package tariffs encourage subscribers to use more services
- Reducing single service subscribers improves margins as well as revenue

Lower subscriber acquisition costs

- Cross-sell and up-sell to existing subscribers
- Reduce and share marketing costs across services

Network operators' 3-pronged approach



Case study: OTT

What is Over-the-Top?

- *Over the Top* is a 1987 movie starring Sylvester Stallone as a champion arm-wrestler (seriously!).
- OTT also describes a service that rides on top of a user's internet connection
  - The user's ISP/telco is not involved in the supply of an OTT service
- OTT services take many forms
  - voice and messaging services more apparent today
  - video and music services increasingly so

Rise of OTT

- Term originally used primarily in the context of video services supplied over fixed broadband networks
  - E.g. Netflix vs AT&T's video-on-demand services
- Now applied more generally
  - Voice, messaging, video, music
  - Mobile and fixed networks
- Mobile context enabled by arrival of the smartphone and public wifi
  - Further enabled by the enhances capabilities of 4G
- Consequences particularly great for mobile networks
  - Displaces and disintermediates supply of voice and (especially) messaging
  - risks reducing network connectivity to a commodity
  - third-party providers challenging the mobile operator hegemony

Discussion question

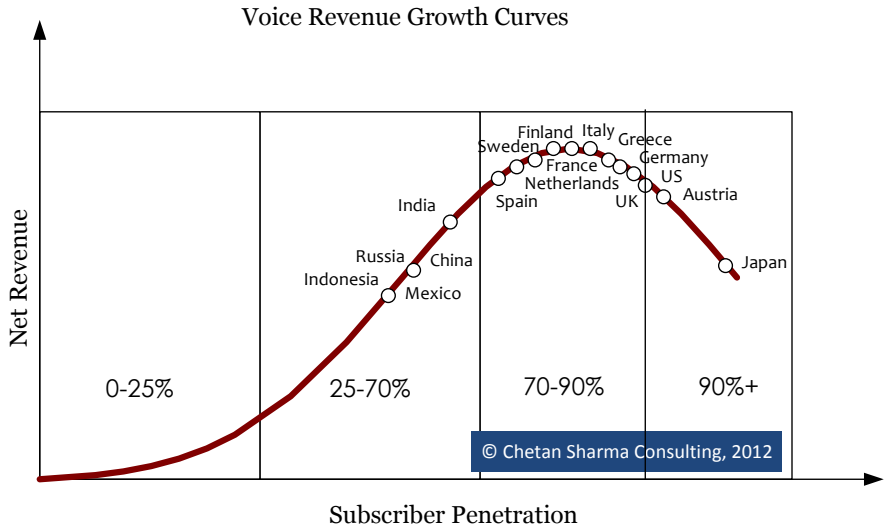
Which OTT apps do you have on your smartphone or tablet right now?

Some comparisons

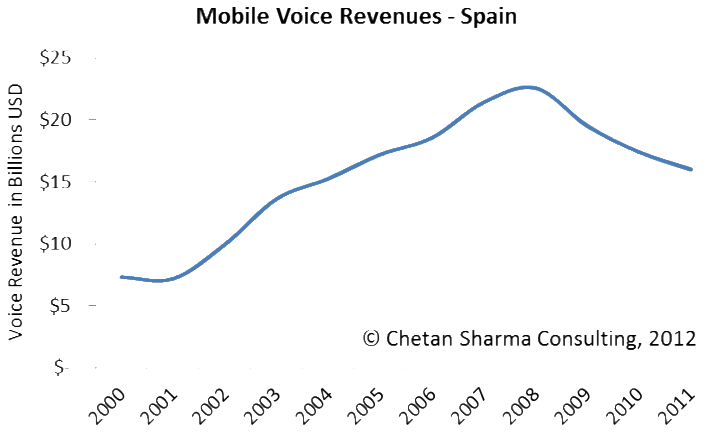
	Telco	OTT
Access to customer	• Via own network • QOS guaranteed	• Via someone else's network • Unlikely to guarantee QoS
Potential customers	• Those within the footprint of the telco's network	• Any person anywhere in the world
Business model	• Subscription based	• App sales, freemium, advertising, partnerships, or "yet to be determined"
Platform	• Open standards • Interoperability	• Proprietary • Not interoperable • Walled gardens

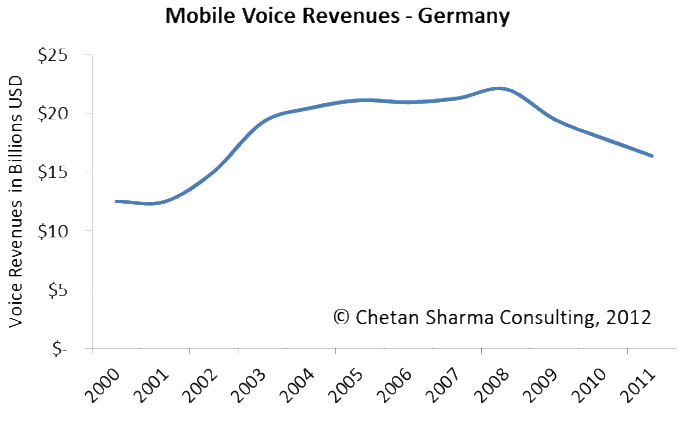
Key OTT battleground #1 – mobile voice

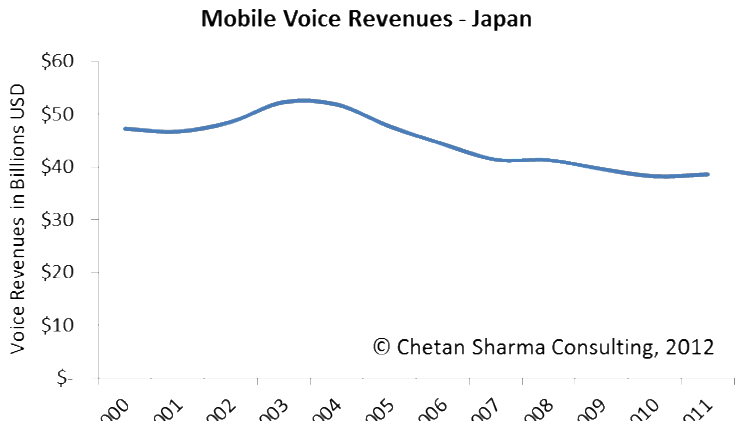
- Mobile voice revenues have peaked in many developed markets and are now in decline
  - Developing markets are still on the rise but they too will soon peak
- Mobile VOIP making inroads but hampered by:
  - need for widespread indoor wireless broadband
  - lack of interoperable apps
  - Smartphone battery life

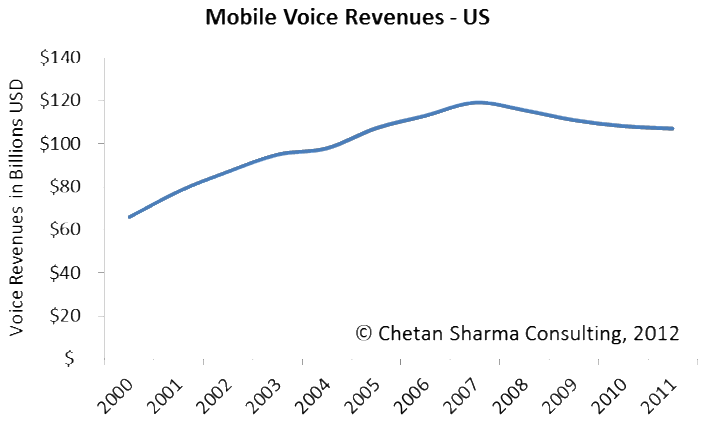


Examples of the decline in mobile voice revenues



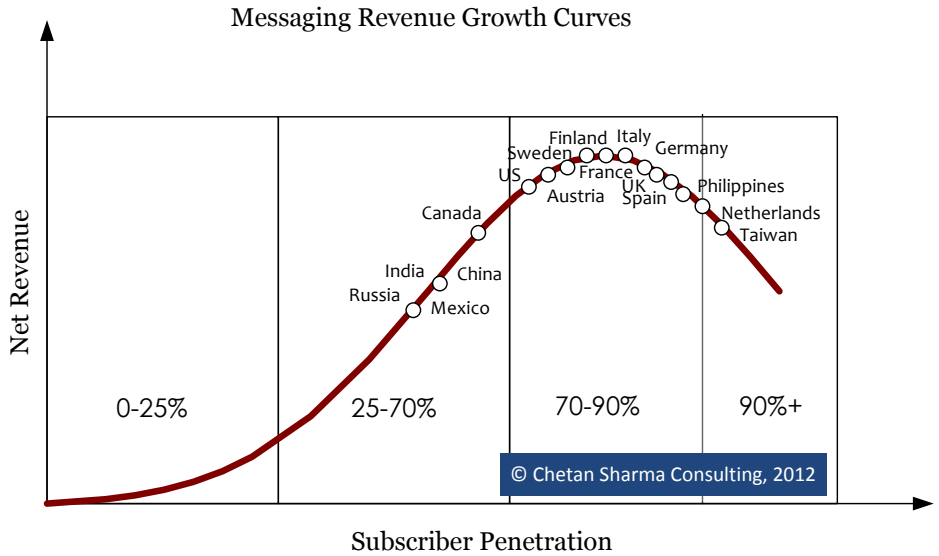






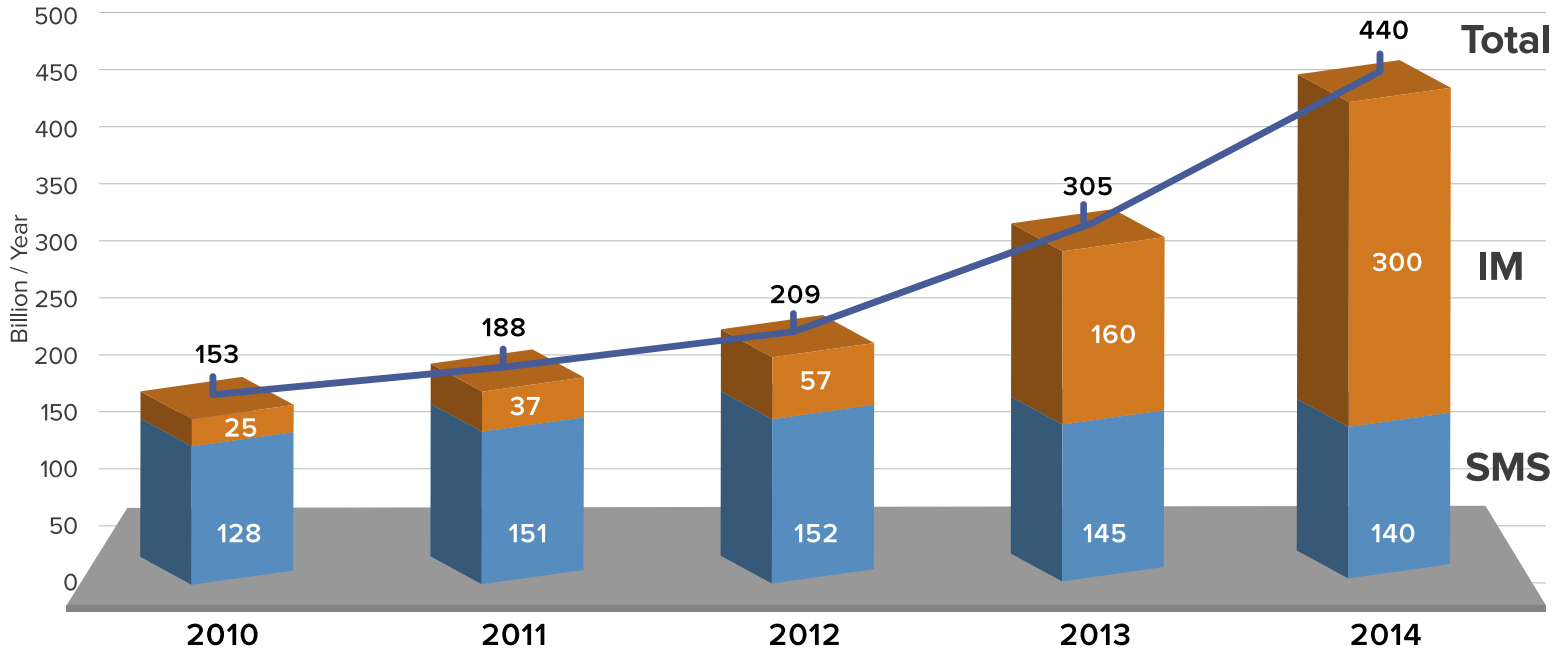
Key OTT battleground #2 – mobile messaging

- Mobile messaging revenues have also either peaked or are peaking
- The battle against OTT messaging has effectively been lost!
  - Instant messaging, social networks, P2P messaging
  - It was good was it lasted—and now the high margins will be difficult to replace



Where's all the growth in messaging?

UK Messaging volumes and forecasts to end of 2014



Source: Deloitte (2014)

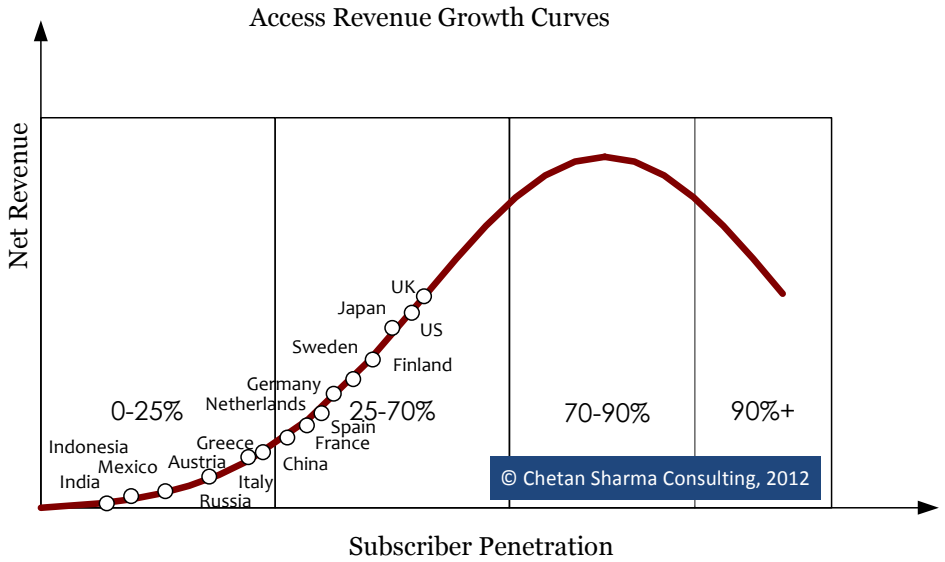
Factors pushing messaging to OTT alteratives

- The key drivers that tip a market towards OTT:
  - Technology readiness—3G+ networks and high penetration of smartphones foster wide distribution of OTT apps
  - Cost incentives—high prices of SMS encourage a switch to the cheaper (even free) OTT applications
  - Network effects—in particular youth aged 13–24 years tend to be the leading indicators of a more widespread uptake
  - The strength of the OTT alternative—markets with high penetration of a single OTT app, or where a single OS platform is highly concentrated, are at the greatest risk
    - e.g. KakaoTalk has 100% presence on smartphones in Korea (40m users)

Source: McKinsey (2013)

Mobile revenues increasingly dependent upon data access

- Mobile access revenues are still growing
  - Smartphone penetration (which is a proxy for high-data usage) is still below 50% in most developed markets
- Access revenue growth has helped compensate for the declining revenues from voice and messaging
  - What will happen once we crest the wave and access revenues begin to decline too?

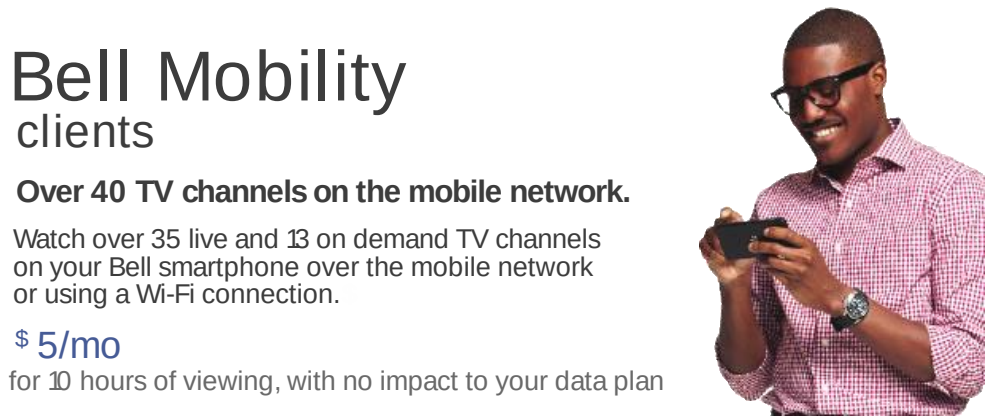


Potential response — blocking

- Mobile operator could block or impose surcharge on certain OTT applications
  - Shortsighted, impracticable, potentially anti-competitive and risks a backlash from customers
- Examples:
  - AT&T blocked mobile VOIP following the release of the iPhone; lifted after pressure from FCC and consumers
  - KCC in South Korea initially permitted the blocking of KakaoTalk; now permitted only for customers on mre expensive flat rate data plans
  - China blocked (on national security grounds) two Korean owned OTT services (KakaoTalk and Line), but not the domestic service (WeChat)

Potential response — pricing

- Mobile operators could adjust their pricing to make OTT less attractive
  - By reducing or restructuring their own prices
- Examples:
  - Yoigo (Spain) introduced tiered pricing of data services that charged more for subscriptions that enables mobile VOIP
  - Verizon (US) introduced a flat monthly fee for unlimied domestic voice and SMS
  - Bell Mobility (Canada) began charging for its mobile TV service based on the number of hours viewed (instead of MB downloaded)



Potential response — joyn in

- joyn—the brand name for a suite of standards for Rich Communications Services (RCS) developed by GSMA
  - Enhanced messaging, video sharing, file sharing services over mobile networks
- Integration into handsets will enable network interoperability
  - Avoids the need for app penetration, P2P limitations, and network effects
  - Supported by all leading hand manufacturers…except Apple!
- Currently implemented by about 40 mobile operators in Europe, South America, Korea and the US.

joyn - It's just there, it just works.

Social presence
Improved group sharing
Location sharing
IP video calling
IP voice calling
Standalone messaging

RCS5

RCS5 extends the RCS-e feature set even further, including IP voice calling, video calling, location sharing, social presence, and richer group chat and sharing capabilities.

RCS-e and RCS5 are compatible for the RCS-e services. All RCS users are only every presented with options that will actually work with the person they're trying to reach.

Live video sharing
File sharing
Group chat
1:1 chat

RCS-e

RCS-e extends the principle of "it's just there, it just works" communication to include instant messaging, file sharing and video sharing.

As it did with SMS, it will take some time for operators to support these features in their own networks, and to make them work across different mobile networks.

SMS text messaging
Regular voice calls

Legacy services

Voice calling and text messaging are the established services that consumers always expect to work for any given mobile telephone number.

Potential response – partner to enable off-net

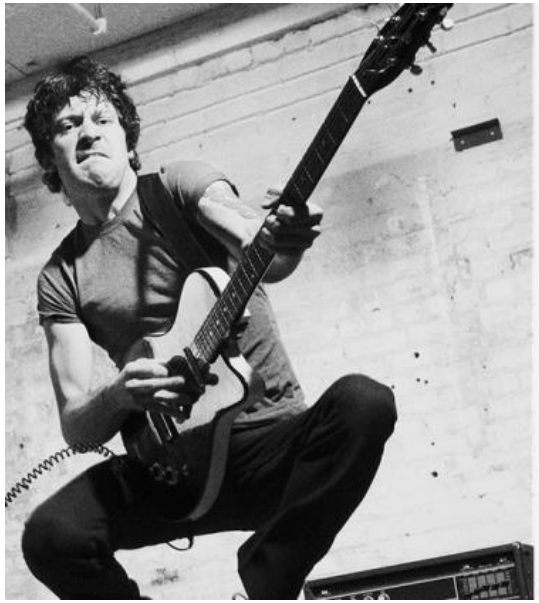
- Mobile operators could enable OTT off-net calling/messaging via use of mobile numbers
  - Overcomes the walled garden nature of OTT apps
  - Examples interoperability
  - Enables mobile operator to keep some traffic and to generate revenue from termination
- Example:
  - SkypeOut

Potential response – partner to enhance (1)

- Mobile operators could partner with OTT service providers to retain traffic on-net, enhance service offerings and/or generate new revenues
  - The two most popular content partnerships today are those involving streaming music and video.
- Examples:
  - 3 (UK) and Verizon (US) partnered with Sykpe (circa 2009/10)
  - Ooredoo (Kuwait) partnered with WhatsApp
  - Vodafone (UK) 4G price plans include a free subscription to either Spotify or Sky Sports Mobile TV

Potential response - partner to enhance (2)

- Negotiating a revenue share arrangement with OTT streaming music service provider creates a potential new revenue stream
  - Helps with differentiation and maybe churn reduction
  - Enables quicker penetration for the OTT service provider
- Still a risk that customers may be deterred by the higher data usage and charges that these services involve
  - Some mobile operators are not metering streaming music from partnering OTTs
- Examples:
  - T-Mobile (US) and iHeart Radio, iTunes Radio, Milk Music, Rhapsody, Slacker, and Spotify (all unmetered)
  - Telefonica (South America) and Rhapsody/Napster (equity stake)
  - AT&T (US) and Beats Music



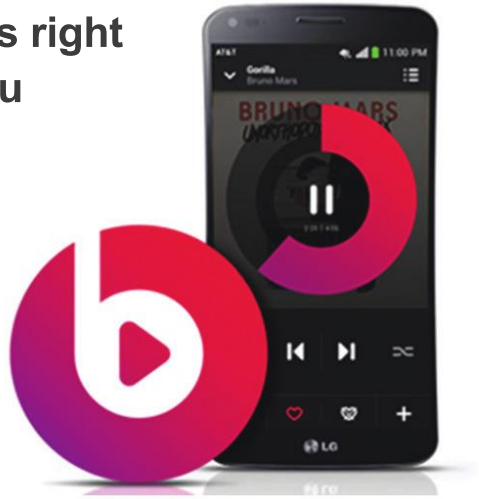
T-MOBILE IS SETTING MUSIC FREE.

Music has never liked limits, and now with T-Mobile, music h
no limits. On the network built for data, you can stream musi
as much as you want.

We're setting music free.

Sprint Spotify

Music that's always right for you



Truly unlimited listening

With Beats Music TM, you get

- Unlimited downloads and streaming*
- Access to over 20 million songs
- What you want, when you want across multiple devices

Family	Individual
$14.99/mo	$9.99/mo
First 90 days FREE!	First 30 days FREE!
Up to 5 users and 10 devices	1 user and up to 3 devices

See offer details below *Data rates may apply to downloading and streaming

Potential response – telco-OTT

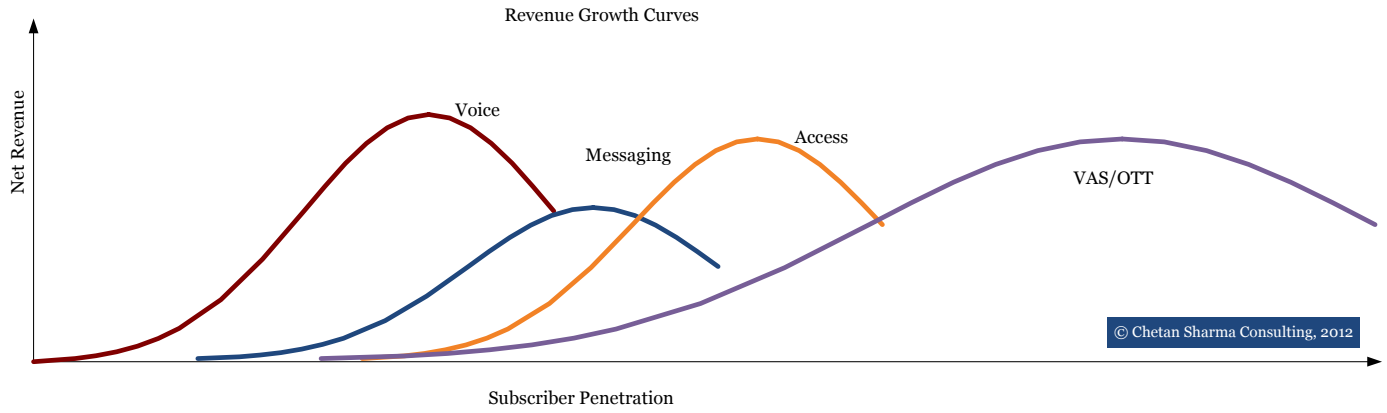
- Mobile operators could offer their own OTT service
  - Although technically it might not qualify as “over the top”
- Potentially both a defensive and offensive tactic
  - Can extend the mobile operator’s brand/service into countries where it is not licensed and has not network…and thus help recoup some revenues
- Examples:
  - T-Mobile (US) introduced Bobsled in 2011, a free VOIP and messaging app
  - Telefonica introduced TU Go in 2013, enables a customer to receive calls to its mobile numbers, and to share its tariff plan, across multiple devices
    - Deployed by O2 in the UK and Movistar in Argentina

Potential response – off-load certain traffic

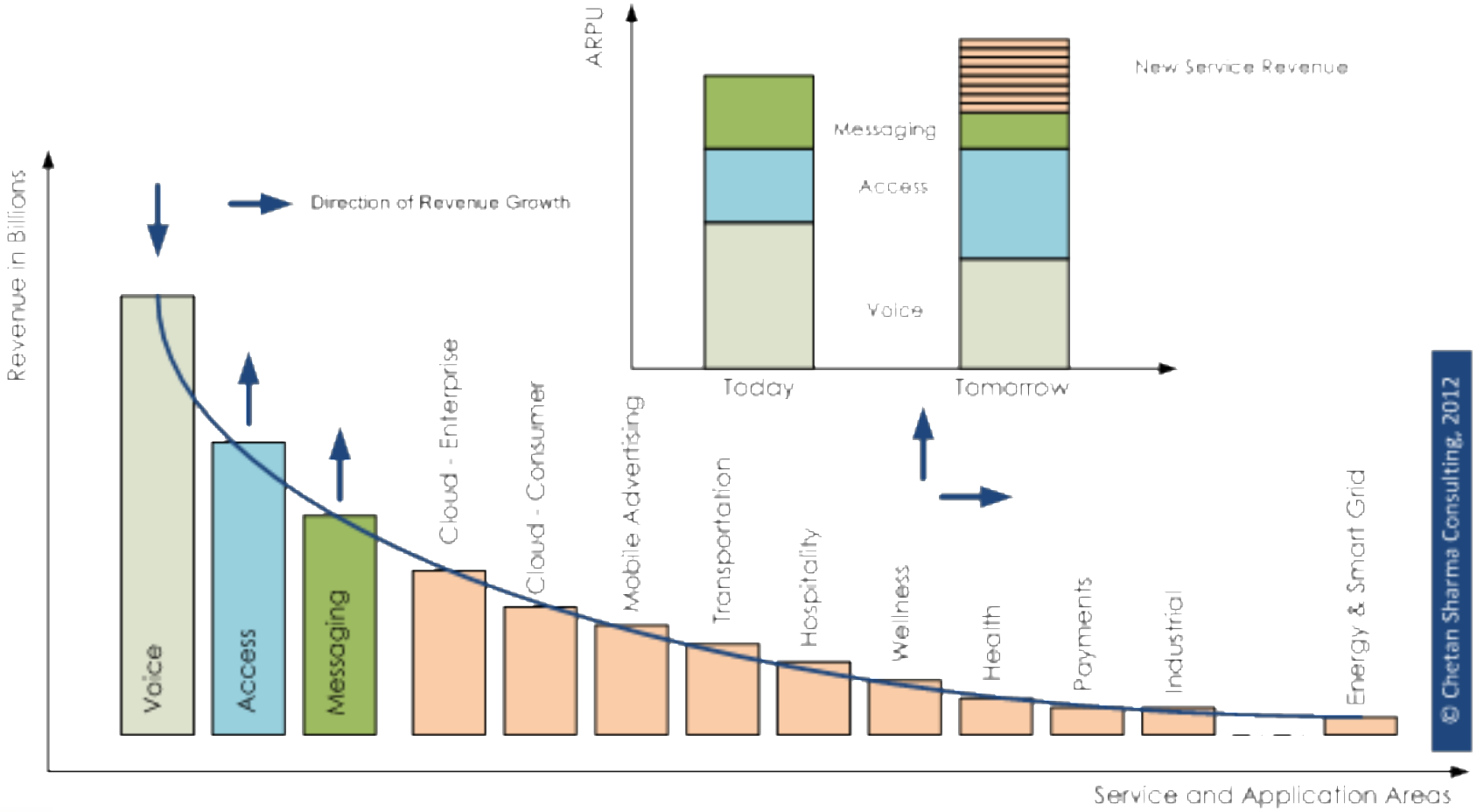
- Mobile operators could off-load certain types of traffic (e.g. streaming video) onto Wi-Fi networks
  - ANDSF device software enables the mobile operator to control and define how, where, when and for what purpose a device can use a certain radio access technology
  - ANDSF = Access Network and Discovery Function; assists devices to discover access networks in their vicinity
- Would enable the mobile operator to:
  - manage its cellular network resources
  - Offer mobile data to customers at lower or no charge

OTT as the saviour for mobile operators?

- Could OTT be the next major source of revenue for mobile operators and replace the traditional cash cows of voice and messaging?
- OTT as a portfolio of services
  - Not a single functional block like voice or messaging
  - Made up of dozens of new application area
- Mobile operator as an enabler or an OTT service provider?
  - OTT service provision would require a different skill-set in the mobile operator



The make-up of future mobile revenues?



Future OTT regulatory issues

- Vertical discrimination
  - Mobile operators have an incentive to discriminate against OTT competitors
  - e.g. by blocking access, imposing data caps, throttling demand, selectively degrading service quality
- One-way interconnection
  - Pricing should not enable monopoly rents from control of bottleneck facilities
  - Charges should be competitively neutral between competing OTT services (i.e. non-discrimination)
  - Pricing should not be a barrier to entry for OTT services
  - Charges should not enable double dipping, i.e. charing OTTs for the same traffic that customers are already paying for in their subscriptions/data plans