

LTE DATA REVOLUTION

Technical Session

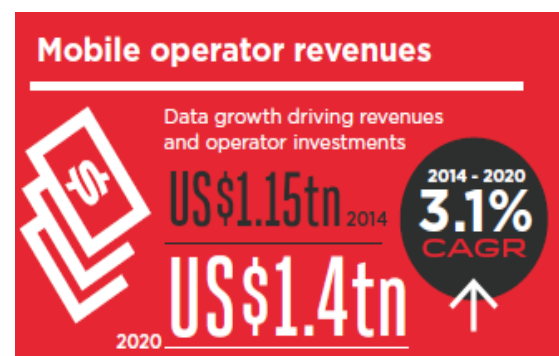
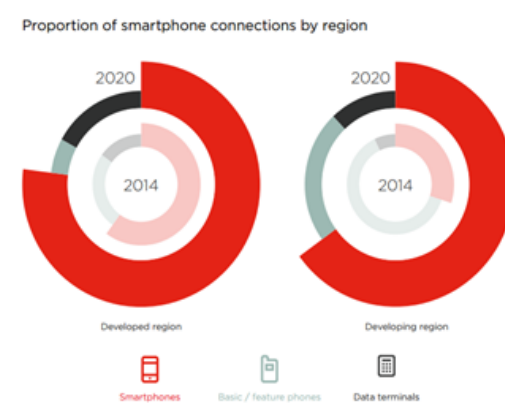
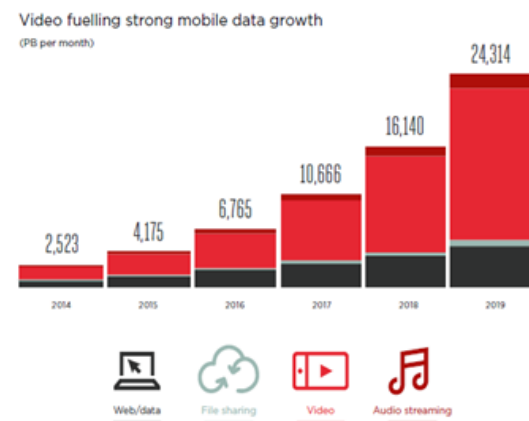
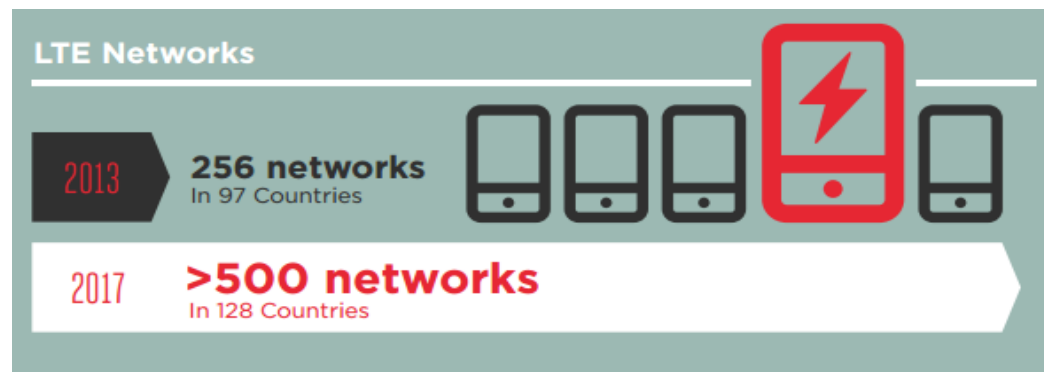
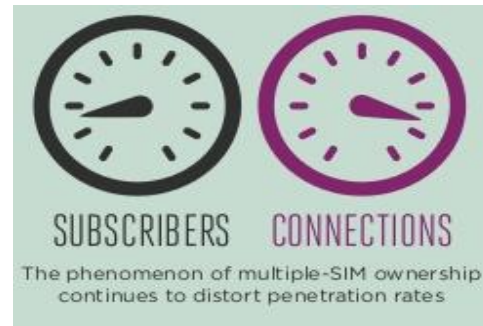
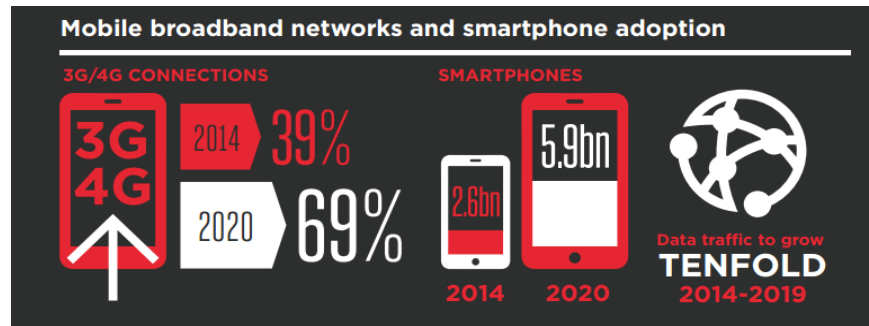
May 5th, 2016



REDKNEE
Looking Beyond

An aerial photograph of a dense urban skyline, likely New York City, featuring numerous skyscrapers and buildings. The image is overlaid with a color gradient that transitions from a warm orange on the left to a cool blue on the right. The text 'A Quick RECAP' is centered in the middle of the image in a white, sans-serif font.

A Quick RECAP



Data traffic expected to see a **ten-fold** increase by 2019. Subs and SIM numbers growing.

High investments in the infrastructure, ongoing (LTE rollout, 5th gen ahead)

Smartphones dominate, enabling new services and catering data hungry applications.

The **apps**, content & advertising **business** is realizing significant revenues in the ecosystem.

Traditional voice and SMS revenues erode. Revenue growth only **3.1%**

CAGR through to 2020. - GSMA

LTE is expected to create **new revenue** streams, extend capacity, build brand - Informa

Threatened to become commodity and loose profitability at the same time.

The acceleration of OTT



TELECOMMUNICATIONS

Telecom companies count \$386 billion in lost revenue to Skype, WhatsApp, others

by Erik Heinrich JUNE 23, 2014, 11:34 AM EST

BUSINESS » INDUSTRY NEW DELHI, May 28, 2015
Updated: May 28, 2015 23:09 IST

OTT eating into revenues of operators 'fatal': Martin Peters

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Over-the-top content: Bullies or buddies?

BY THABISO MOCHIKO, 28 JANUARY 2016, 09:02



strategy&
Formerly Booz & Company

Disruptive Analysis

Don't Assume

informa advantage
telecoms & media

GUARANTEED 1-TO-1 MEETINGS

SPEED NETWORKING

FACILITATED MEETINGS

BESPOKE NETWORKING EVENTS

WEBINARS

ON-SITE VIDEO

PRODUCT LAUNCH DEMOS

SURVEYS & WHITEPAPERS

informa
telecoms & media

OVUM

If you can't **beat** 'em, **join** 'em.

The key is not for operators to fight against the **OTT** players but rather to find and develop the **profit pools** where their particular capabilities offer the greatest chances of success.

Its not **4G** driving a change but the **services launch** with it which will make a difference

LTE is expected to create **new revenue** streams, extend capacity, build brand

Traditional BSS were built to deal with voice and simple data, but the BSS for LTE need to accommodate the characteristics of the new services, the associated network signaling traffic, and the ecosystem dynamics that make tariff innovation and **new business models** critical to operators' future commercial success.

The Key For LTE Monetization

From generic offerings to value based offerings.

Allow experimentation with innovative tariffs and differentiated products / upsell options on a flexible platform

A BSS Eco System for Sponsored Data Charging , promotions and Settlement with OTT partners.

Real-time Access
nothing offline

Ubiquity of devices,
internet of things
arise and change
volumes & patterns
dramatically

Social, connected customer.
Needs
fun to engage.
Gamification.

Works. For Me.
Transparent services
providing personal value now.
Pick, mix and share

Empowered & Connected
I want and I can. Pick & mix, share, sell.

Flexible Partner Models expected to fit the customer, & the OTT.



**Browse.
Stream.
Enjoy.SM**

With AT&T Sponsored Data, you can browse websites, stream video and enjoy apps on your wireless device without impacting your personal data plan.*

-  Content delivery to mobile devices is sponsored in a targeted and flexible way.
-  Customers get sponsored access to more great content.
-  Sponsors can deploy time-based offers that are OS agnostic and come with rich analytics.

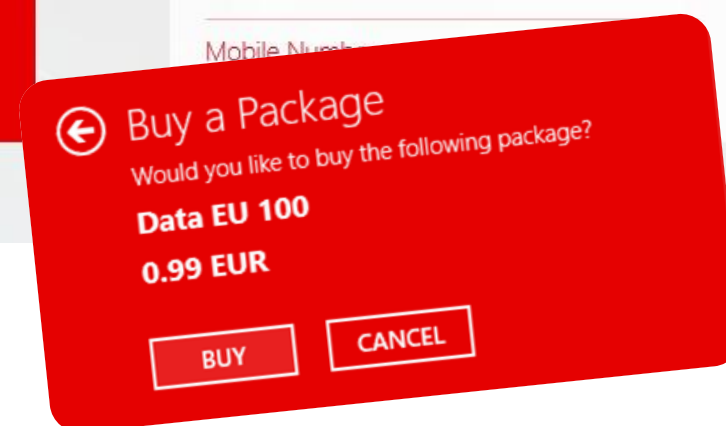
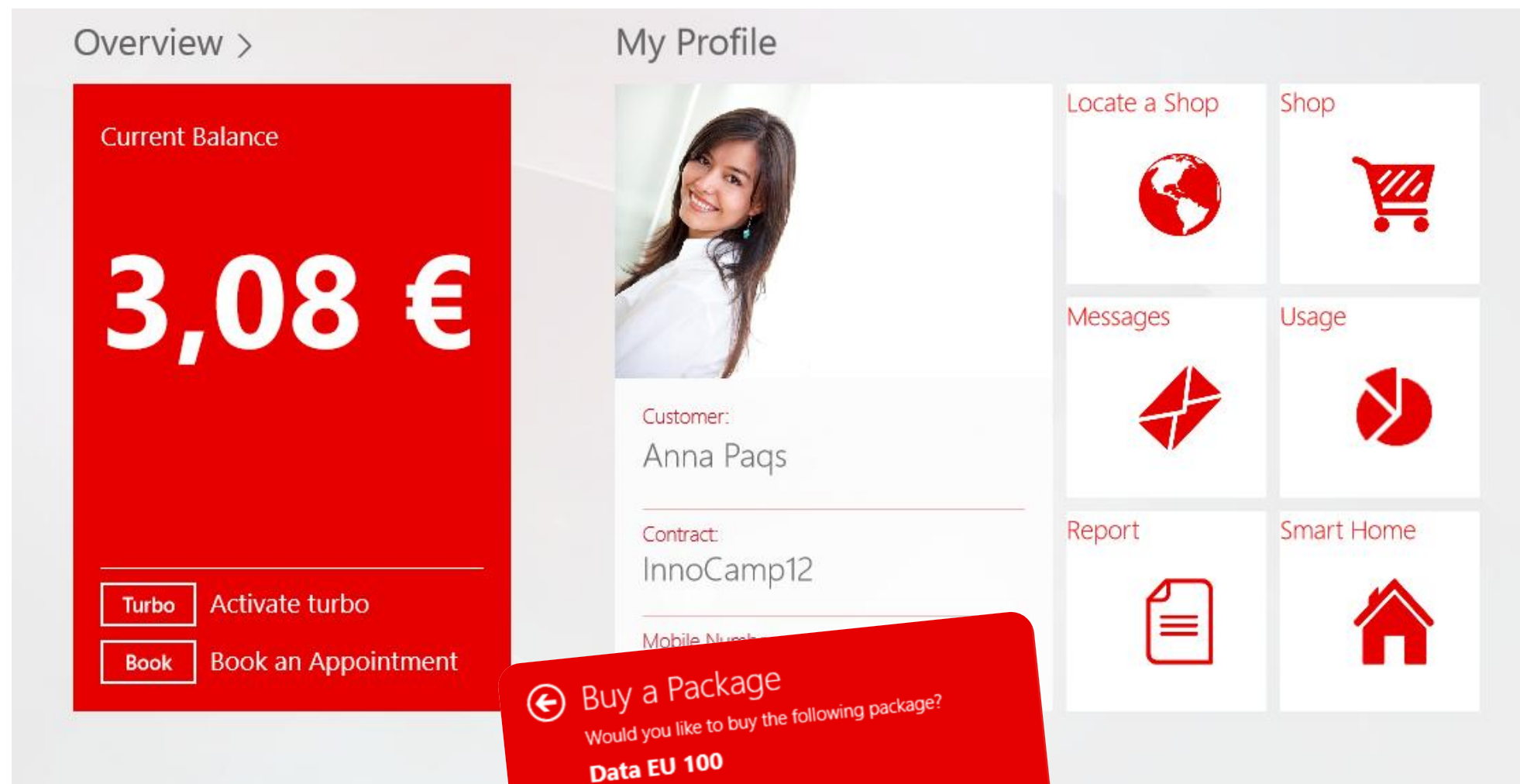
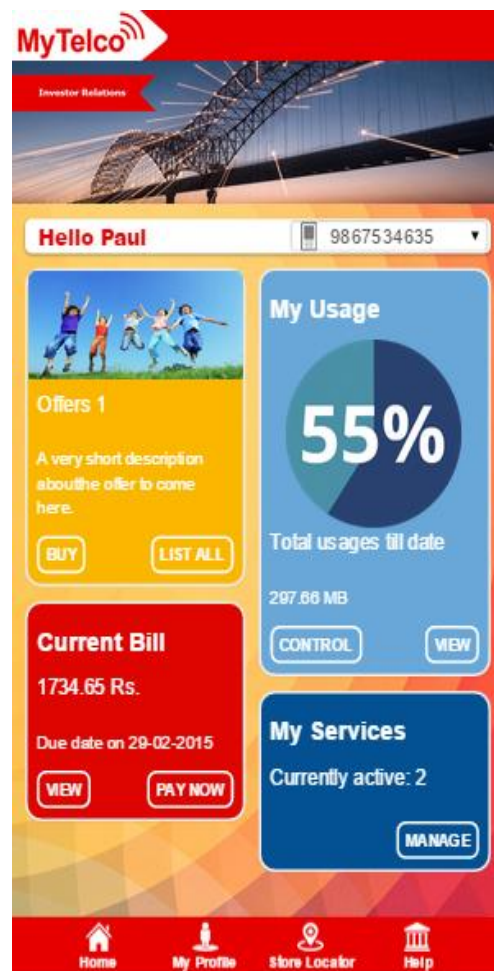
AT&T TURNS DATA CAPS INTO PROFITS WITH NEW FEES FOR CONTENT PROVIDERS
content providers can pay AT&T to evade data caps but can't get a faster lane.



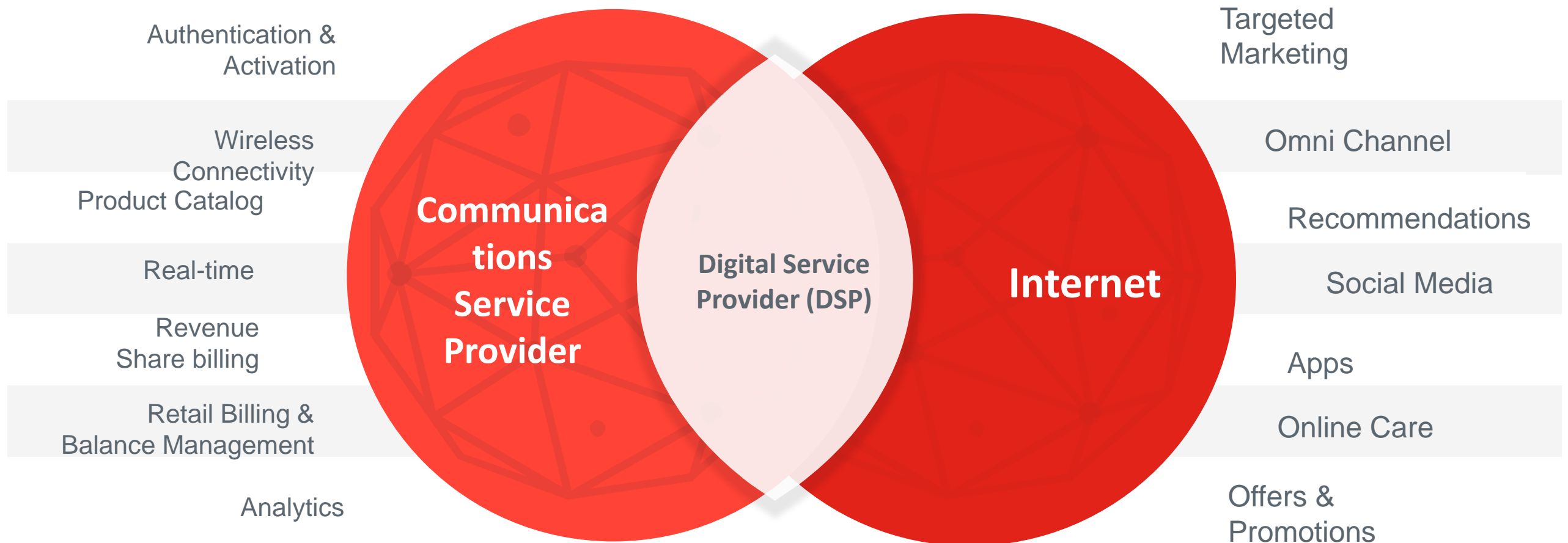
The “Smarter” Data Monetization Approach for Digital Customer

everything contextual and on my device

DIGITAL *customer* **EXPERIENCE**



The Making of a Digital Service Provider



DIGITAL
REVO
LUTION



Needs and value is different:

- › QoS / speed tiers
- › on demand or application specific QoS
- › guaranteed QoS of partner content / apps

You can also differentiate on

- › payment behavior, loyalty status, group spending...
- › demand and available resources

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	XL	L	M	S	XS
NATEL® infinity	€169.-	€129.-	€99.-	€75.-	€59.-

Monthly subscription price

In Switzerland → Calls → Internet → SMS/MMS **unlimited** With each subscription. Throughout Switzerland. To all networks.

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A1 **TELEKOM AUSTRIA** **4G LTE**

A1 Speed 4G/LTE 150	A1 Speed 4G/LTE 1 GB
150 Mbit/s	150 Mbit/s
50 Mbit/s	50 Mbit/s
-	1 GB

Temporary QoS

Inverse turbo - on demand QoS reduction, reduced QoS reduced volume is counted.

Customers can actively manage the QoS – save resources, save money.



Device Specific QoS

QoS differentiation on a device-, instead of customer basis.

Differentiate between devices of the same customer, under the same plan – e.g. multi device plans.



Demand Based Dynamic Data Rates

Align data tariffs and promotions to network traffic / resources indicators.

Network traffic indicators can be updated over external OSS systems.

SURGE PRICING

Demand is off the charts! Rates have increased to get more Ubers on the road.

3.0x
THE NORMAL RATE

£30 MINIMUM FARE

£1.44 / MIN + £7.95 / MILE

T-Mobile

INTRODUCING

BINGE ON™

Video now streams **FREE**
without using your data, only from T-Mobile.

Available on November 15th



**Now you can stream all you want for
FREE without using your data.**



In October 2015 were adopted the first EU-wide
Net Neutrality rules.

Quality differentiation on the Internet has long been
common practice. ... In future there will also be the option
of booking a service with assured quality in exchange for
a few more euros.



Personalized plans based on OTT awareness


- › Preference **NETFLIX** **HBO NOW™**
- › **hulu** **sling** **WATCH ESPN**
- › But sorry **YouTube**s aren't included, e.g.
- ›
- › Policy control needed to guarantee QoS beside
charging

Application based charging according to 3GPP

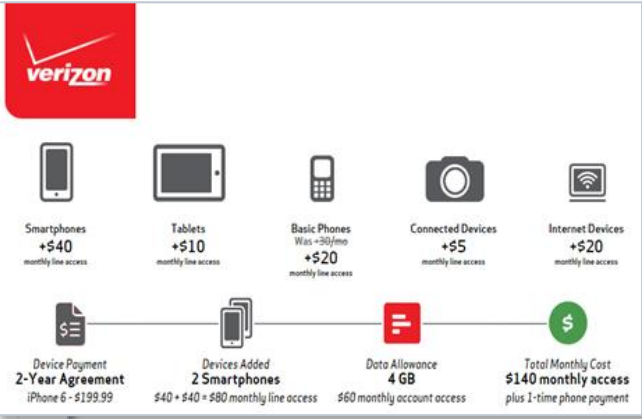
- › Option for new revenue streams while optimizing
network infrastructure
- › Internet traffic can be treated differently (e.g.
throttling)
- › Identify the subscriber, the application, content and
device

Shared data is great. We see plans to extend to:

- › sharing over communities
- › social gifting
- › social recommendations
- › crowd sourced care




Add more devices	Features	Monthly Access Charge
Tablets, connected devices & gaming devices	Shared data	\$10/mo.
Connected wearables ⁵	Unlimited Talk & Text + Shared data	\$10/mo.
Laptops, netbooks & hotspot devices	Shared data	\$20/mo.
AT&T Wireless Home Phone ⁶	Unlimited Nationwide Calling	\$20/mo.
AT&T Wireless Home Phone & Internet ⁶ <small>(Only on 10GB plans or higher.)</small>		



Smartphones +\$40 monthly line access
Tablets +\$10 monthly line access
Basic Phones Was +\$0/mo +\$20 monthly line access
Connected Devices +\$5 monthly line access
Internet Devices +\$20 monthly line access

Device Payment 2-Year Agreement iPhone 6 - \$199.99
Devices Added 2 Smartphones \$40 + \$40 = \$80 monthly line access
Data Allowance 4 GB \$60 monthly account access
Total Monthly Cost \$140 monthly access plus 1-time phone payment



Father: I have unused data amount this month. You can have it.
Child: I used a lot of data this month and now I don't have enough. I hope next month will be okay.
Verbal: If the data amount is not used up, the data amount that is provided with Data Gift can also be carried over and used by the end of the next month! (If the monthly data amount of the current month is provided with Data Gift)

au あたらしい自由.

Community Sharing

A donator shares a portion of his allowance – to a community. The shared amount is made available to all users of the community.



Donator can be part of the users – but does not have to be (charity)

Gift CARRY OVER

Use carry over to motivate purchase of larger bundles.

Allow on conditional, on demand sharing/ gifting of carry over allowances.

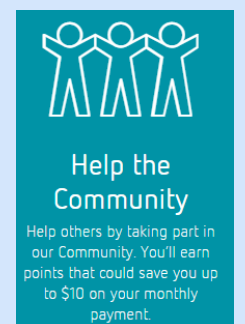


Crowd Sourced Care

No call center – just community (and supervision)

Rewards for support (rating of support activity - earn your monthly fee back)

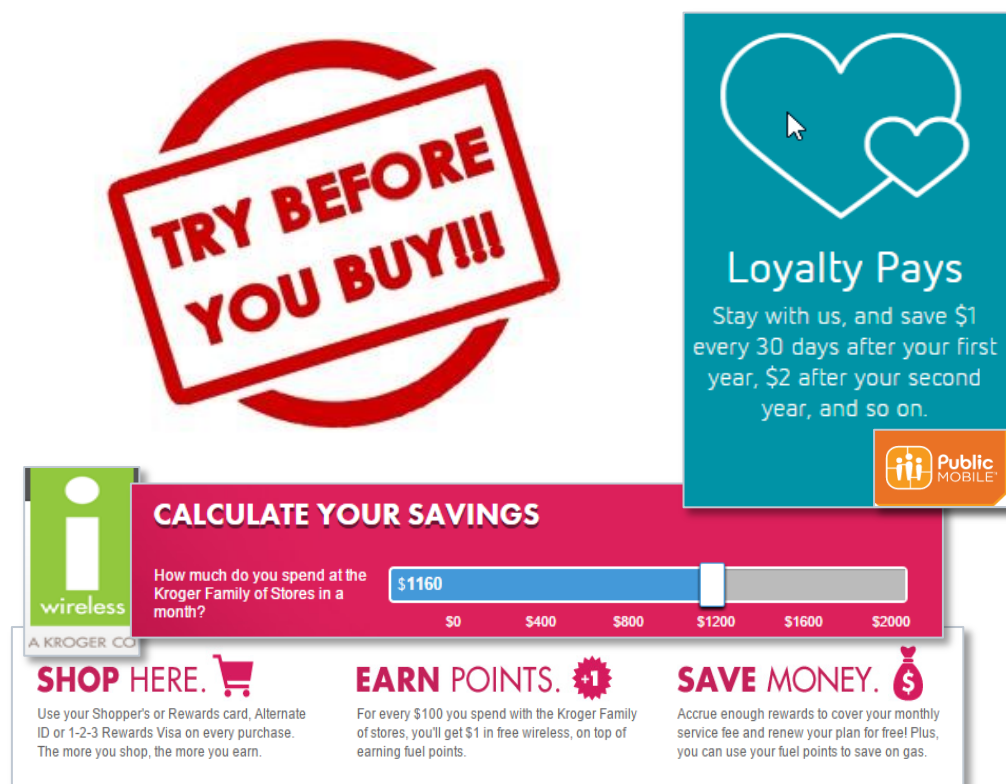
Rewards for referrals



Trials prove value – once it ends subscriber can opt in for regular services.

Loyalty programs combined with more generous mobile data handling – e.g. omitting QoS reduction, providing an excess amount at the end of a booster pack.

Loyalty programs, extended to 3rd parties .



TRY BEFORE YOU BUY!!!

Loyalty Pays
Stay with us, and save \$1 every 30 days after your first year, \$2 after your second year, and so on.

CALCULATE YOUR SAVINGS
How much do you spend at the Kroger Family of Stores in a month? **\$1160**

SHOP HERE. Use your Shopper's or Rewards card, Alternate ID or 1-2-3 Rewards Visa on every purchase. The more you shop, the more you earn.

EARN POINTS. For every \$100 you spend with the Kroger Family of stores, you'll get \$1 in free wireless, on top of earning fuel points.

SAVE MONEY. Accrue enough rewards to cover your monthly service fee and renew your plan for free! Plus, you can use your fuel points to save on gas.

Try & Buy, While The Stock Lasts

Trial products with capabilities to manage their lifecycle, allowing automatic / conditional renewal.



While stock lasts promotions, limiting the number of available products.

Realtime Loyalty Programs

Realtime experience while earning / spending points & personalized coupons. Managing loyalty status and benefits.



Options to integrate with 3rd parties.

Customer Value Score

Constantly updated for each customer based on KPIs, based on current usage and history.



Allows targeted promotions, is available for CRM to optimize care processes.

Differentiated products

From generic offerings to value based offerings. Experiment with innovative tariffs. Tailored, contextual offers to the right individuals.

Customer Focus

Aim to delight. Obtain better customer insight with real-time view. Understand the customer and contextual value. Engage, not broadcast.

Efficient & Agile operations

Solutions handling the exploding data amounts. Virtualized based systems. Extremely fast time to market. Optimize operations to ensure agility





**KEEP
CALM
AND
Enjoy
LTE**