The Rise of OTT Players – The Regulatory Answer?

Kuala Lumpur
28.08.2015

Deutsche Telekom Group

Consulting
DETECON

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1. **Detecon – Who we are?**
2. OTT – The Telco Challenge
3. Regulatory Take Away

Partner and Head of Delivery Detecon Asia Pacific: Dr. Werner Knoben

Dr. Werner Knoben
Partner

Area of studies

- PhD in Mathematics: RWTH Aachen University, Aachen

Professional Experience

- T-Com / Deutsche Telecom / Detecon – Partner: Bidding and Auction Strategies; War gaming; Regulatory strategies; Due Diligence; Scenario Analysis

Key Qualifications

- Regulatory and wholesale strategy, market liberalization, competition law, regulatory costing and accounting separation
- Auction Design, Auction Strategies, Game Theory, War gaming, Communication Strategy, Bid Strategy
- Consumer and B2B strategy, Business Cases, Scenario Analysis

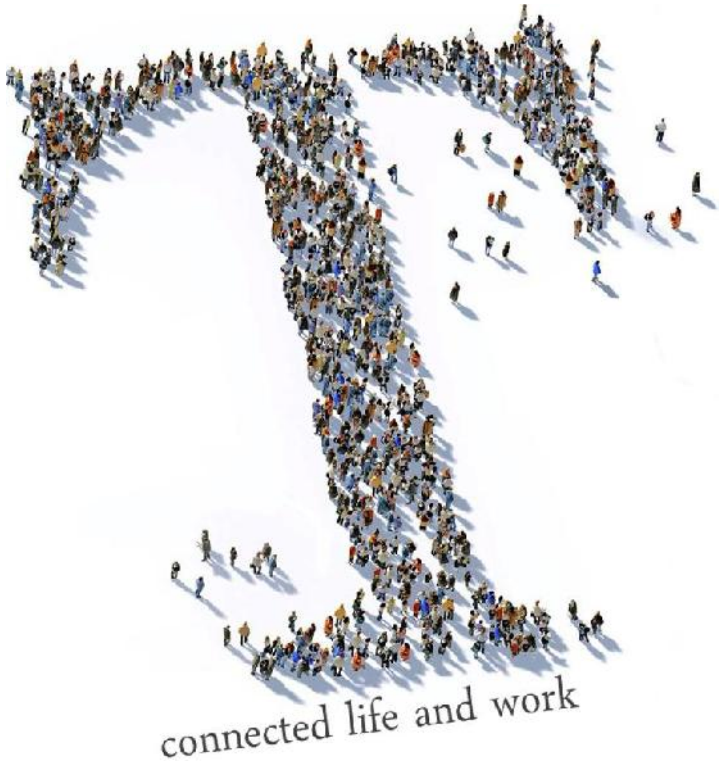
Selected Project Experience

- TRA Oman: Setup of a 4G spectrum auction
- NCC Nigeria: Setup of SMS and Data Interconnection Regulation
- NBTC Thailand: Development of an Accounting Separation Framework
- SingTel, Singapore: Auction and bid strategy and 4G license valuation
- TMMK/MKT, Macedonia: Regulatory Costing
- Advisor for Deutsche Telekom subsidiaries in Croatia, Hungary and Slovakia for regulatory strategies

We are part of Deutsche Telekom Group, the number one ICT provider in Europe. Our goal is to leverage the strengths of the group in international markets.

Key Facts Deutsche Telekom Group

- USD 75 billion net revenue
- 239,000 FTE employees
- 1,500 headcount in group innovation and partnerships
- 50.5 million fixed network lines
- 123 million mobile customers
- Number one ICT provider in Europe
- Number one cloud provider outside US
- Strong international footprint
- Group vision:
  The customers' first choice for connected life and work



Telekom subsidiaries provide integrated products and services for business and residential

T-Mobile offers mobile solutions and is the key co-brand for OTT partnerships

T-Systems delivers ICT solutions for corporate customers and public sector organizations

Detecon is the management consulting unit of DT Group, serving to the group and other customers

Detecon's global presence ensures that clients get access to the knowledge and know-how of telecommunications experts worldwide.

Key Facts Detecon International GmbH

- Foundation:
  1954 – Diebold
  1977 – DETECON
- Restructuring:
  2002 – Detecon International GmbH
- Shareholder:
  T-Systems International GmbH
- Employees:
  More than 1,000 worldwide
- Turnover 2012:
  EUR 168 million
- Locations Germany:
  Cologne (head office),
  Dresden, Eschborn, Munich
- International Locations:
  Abu Dhabi, Almaty, Ankara, Bangkok, Beijing, Jakarta, Johannesburg, Moscow, Riyadh, San Francisco, Vienna, Zurich
- Webpage: www.detecon.com/en/

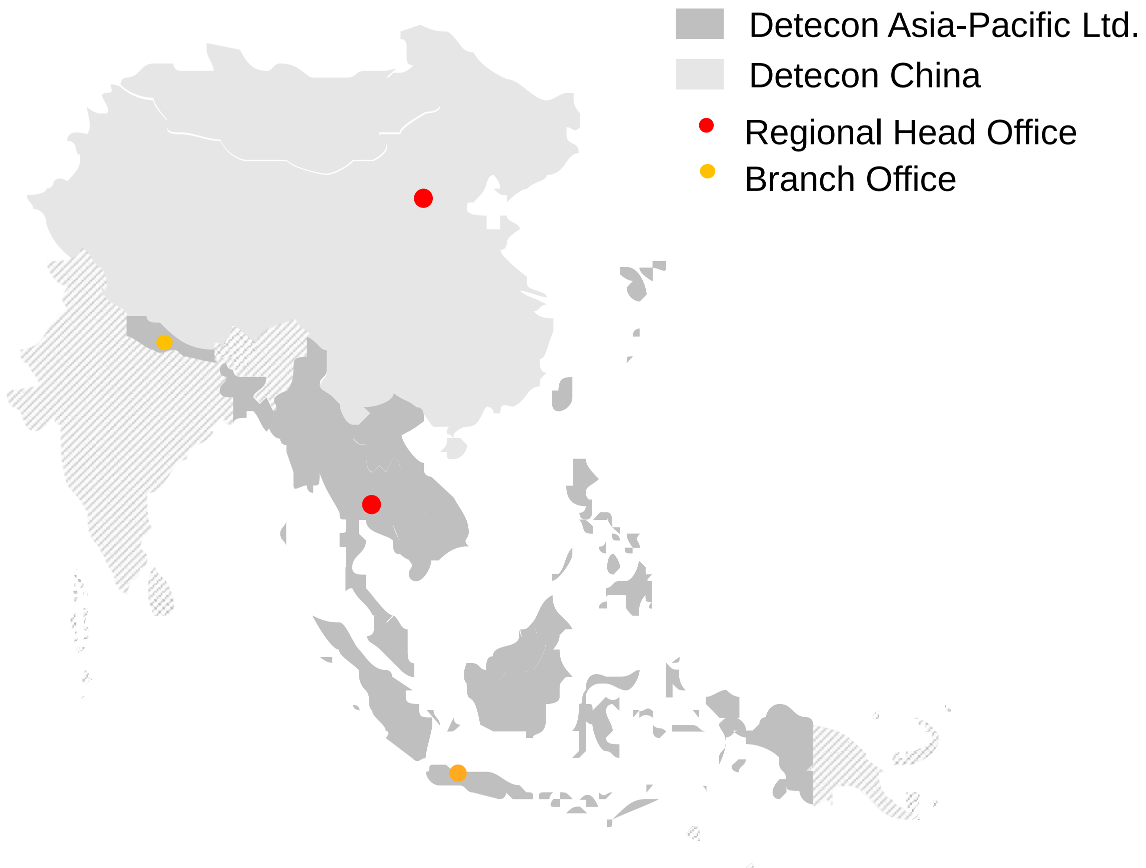
Worldwide Presence

Detecon Asia-Pacific Ltd. is focusing on wider South East Asian markets. We can build on successful client relationships that have developed over 25 years.

Key Facts Detecon Asia-Pacific Ltd.

- Business Activities in Asia:
  Since 1985
- Foundation of Detecon Asia-Pacific Ltd.:
  2005
- Major Shareholder:
  Detecon International GmbH (99%)
- Employees:
  45
- Turnover 2012:
  EUR 7 million
- Regional Headquarters:
  Bangkok
- Regional Branch Offices:
  Jakarta, Kathmandu
- Webpage:
  www.detecon-asia-pacific.com

Presence in Asia



We combine a rich service portfolio with a unique approach to consulting and in-depth knowledge of the industry.

Strategy and Marketing

- Startup and Launch Support
- Marketing and Sales Strategies
- Wholesale Strategy and Implementation
- Regulatory Advisory (Regulation Frameworks, Licensing, Lobbying)
- Corporate Strategy
- Corporate Finance
- Cost Optimization
- Business Planning
- Business Development
- Innovation Management
- Big Data Strategy
- Due Diligence and Investment Appraisal
- Corporate Social Responsibility

Technology Management

- Network Rollout / Launch Support
- Technology Strategy
- Outsourcing, Managed Services
- Vendor Selection
- Network Performance Management
- Network Operations Efficiency
- Tool Based Network Planning, Design and Rollout
- ICT Strategy Organization
- Technology Innovation Management
- Green Technologies
- ICT Transformation Management
- Next Generation Data Centre
- Enterprise Architecture Strategy and Management
- Enterprise Service Management

Organization and Processes

- Business Process Management (Business Process Audits, Business Process Engineering including eTOM and ITIL), Process Optimization
- TOGAF Training and Certification
- Enterprise Transformation Management
- Reorganization and Merger Integration
- Human Resources Management
- Procurement and Supply Chain Management
- Financial, Risk and Compliance Management

Program Management, Project Management, Interim Management

We support regulatory authorities and operators since 1977 with our deep regulatory and sector reform knowledge and experience worldwide.

Sector Reform and Legislation

Sector Reform Strategy

- Review of given market situation
- Analysis and benchmarking of liberalization experience in other countries
- Examination of political, legal and economic implications
- Elaboration of guidelines and policies for sector reform

Communication and Competition Legislation

- Analysis of existing legal situation
- Primary and secondary legislation
- Regulations and calculation models (price squeeze, margin squeeze, predatory pricing)
- Anti-competitive conduct (ex-ante and ex-post)

Regulatory Policies / Procedures

- Regulatory market definition and analysis
- Competition policy, SMP designation and remedies
- Licensing and Authorization
- Universal service policy
- Tariff policy and tariff regulation
- Interconnection and Access Regulation
- Numbering
- Dispute resolution
- Market Monitoring and enforcement regulation
- Consumer, Data and Privacy Protection
- Frequency spectrum allocation and management
- Standardization and type approval

New Regulatory Challenges

- Fix-mobile convergence regulation (e.g. pricing of mobile termination, national and international roaming, MNP, SMP evaluation, digital dividend, spectrum trading, re-farming, auctioning, …)
- Legal framework for eCommerce, eHealth and eGovernment
- Media, IT, telecom convergence regulation (e.g. for content and applications, IPTV, PPV, …)
- Technical and economic regulation in an NGN environment, e.g.
  - VoIP regulation,
  - Net neutrality and QoS,
  - NGA industrial policies,
  - Next Generation Data Centre,
  - Network Resilience and QoS,
  - OTT

Regulatory Strategy and Telecommunication / Broadcast / Spectrum Master Plans

Our Asian client base includes donor institutions, regulatory bodies, industry suppliers and telecommunications carriers across the whole region.

UOB

MCMC

DGPT

Sri Lanka Telecom (SLT)

A country view on completed projects proves that we are industry experts capable of dealing with strategic challenges as well as detailed implementation tasks.

Thailand

- WiFi Network and Business Audit
- Accounting Separation Framework
- Business Process Review
- 3G Licensing Support
- Service Costing
- Tender Support for UMTS / LTE
- LTE Spectrum Valuation
- Shaping Enterprise Data Services
- Broadcasting Competition Policy
- Sector Reform and Liberalization
- Interconnection Cost Modeling

Cambodia / Laos

- Launch of CDMA Network
- Rural Telecommunications
- Fiber Network Due Diligence
- Company Valuation

Bangladesh

- Restructuring of Incumbent
- Advisory on Tower Services
- Spectrum Utilization Concept

Brunei

- Costing and Pricing Models
- BWA License Bid Support
- Interims Management

Malaysia

- Tendering Support
- Spectrum Planning and Pricing
- Network Evolution Strategy
- GSM Network Due Diligence
- Network Optimization Support
- Carrier Launch Pricing
- Data Center Strategy Review
- Network Outsourcing Support
- WiMAX Bid Book and Tendering
- Mobile Strategy Development
- CRM Rollout

A country view on completed projects proves that we are industry experts capable of dealing with strategic challenges as well as detailed implementation tasks.

Myanmar

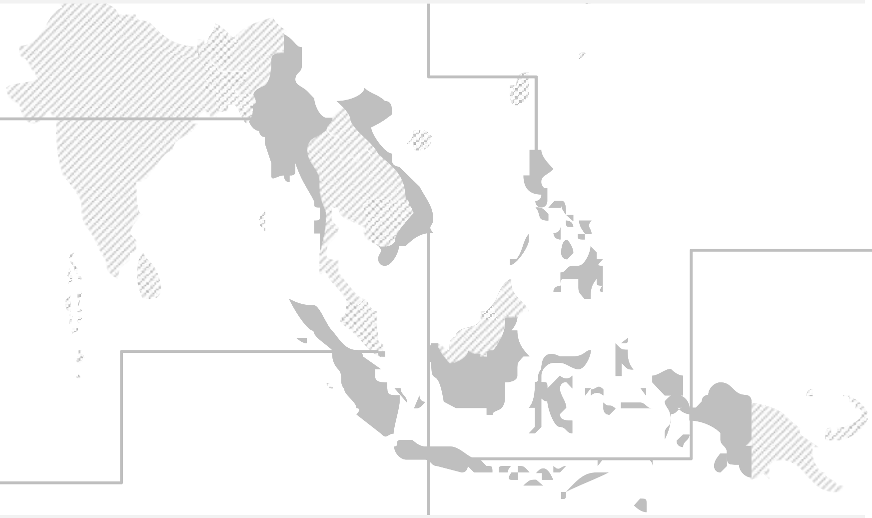
- Strategic Market Entry Feasibility
- License Bid Support

Philippines

- Frequency Management
- Business Planning
- Network Planning Review
- Interim Management

Indonesia

- Buildup Support for Carrier Unit
- Radio Network Planning
- Rollout Management
- Tendering for Managed Services
- Wholesale Business Strategy
- Tower Growth Due Diligence
- Frequency Lobbying
- Bid Management for Suppliers
- Transmission Planning
- Core Network Swap
- Billing Outsourcing Support



Singapore

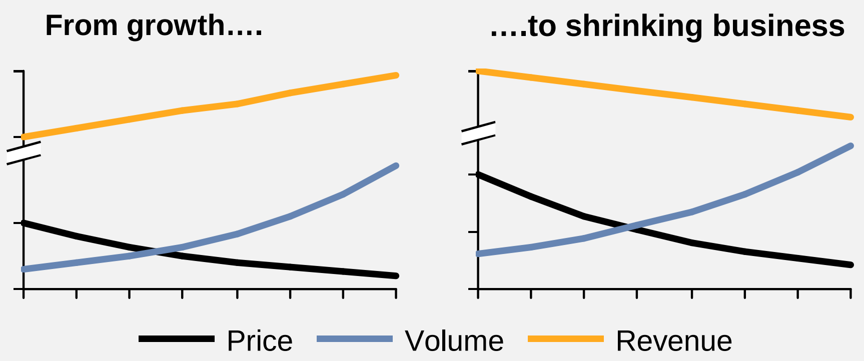
- Bid Management for Broadband
- Network Resilience Review
- Roaming Study
- WACC Determination
- MNC Strategy / Implementation
- APEC Broadband Study
- Internet Traffic Analysis

Vietnam

- NGN Migration Strategy
- Mobile Market Entry Strategy
- Billing System Tendering
- Rural Telecommunications

Core Telco markets are shrinking. As a result the pure access and transport business case becomes negative – and broadband goals might fail to achieve the targets.

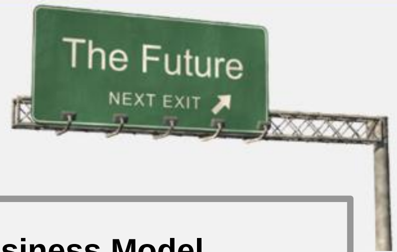
The Telco Challenge



- **Revenues** from core Telco activities are **declining**.
- Operators have to look for **new sources** of income
- Some operators have adopted a strategy becoming an integrated **ICT solution provider**

How many operators can sustain bit pipe business?

What does it mean for national Telco markets?



Sustainability of Business Model

- Operators **losing** from basic services (access and transport)
- **Decoupling** from network and application layer
- New players are entering the value chain – resulting in **fierce competition**

Broadband Policy Goals

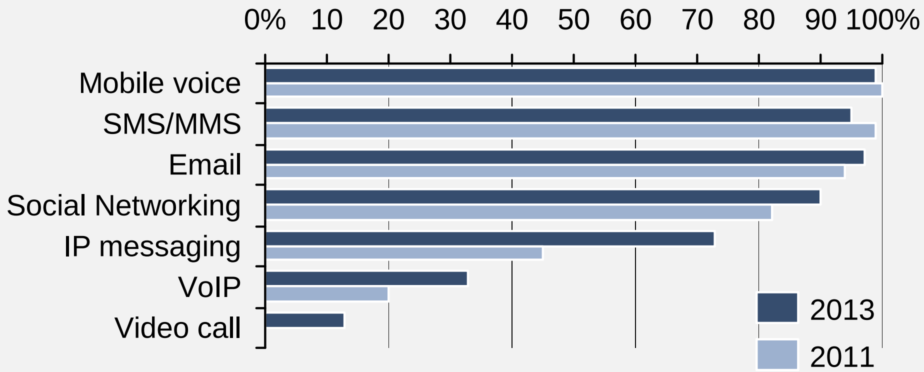
- The **economic value** of access and transport is **decreasing**
- The **pure broadband** business case is getting **unviable**
- Investment in and operations of ultra-fast and reliable infrastructure **will fail** to meet **policy goals**

Over-the-top (OTT) players have entered the scene and have started to take away revenues from national Telco operators.

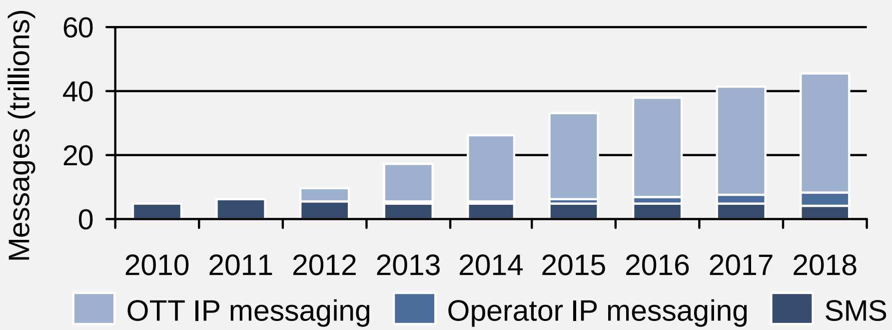
The Emergence of OTT

- OTT services penetrate the Internet
- In voice and messaging services OTT attack the traditional Telco business

OTT Communications on Mobile Handsets*



Mobile Messaging by Service Type*



Source: Analysys Mason

What does it mean for national Telco markets?

What does it mean for national Telco markets?

Revenue Loss

- Significant **loss of revenues** in voice and messaging services
- **Innovation backlog** against OTT

Level Playing Field of Regulation

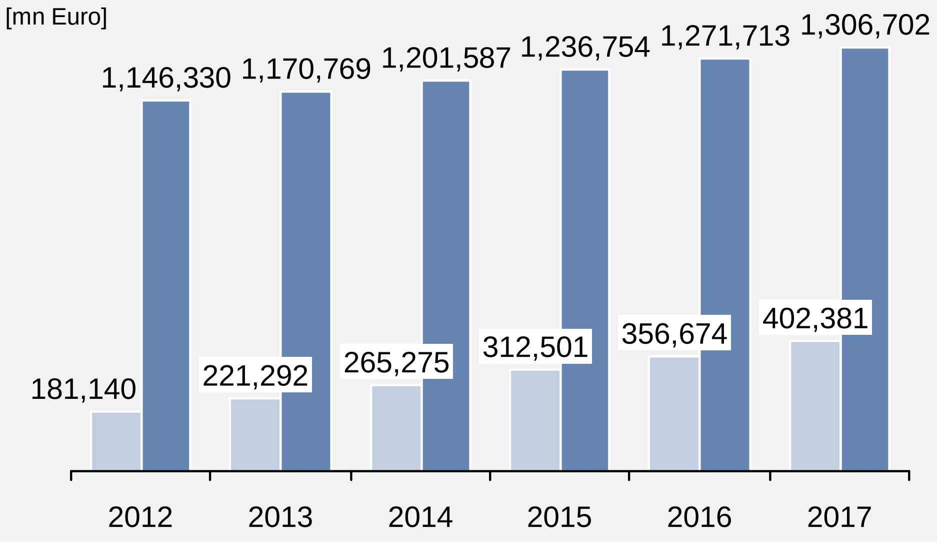
- **Uneven level** of **regulation**, e.g. QoS, interconnection, pricing, universal service, convergence etc.
- OTT **tax evasion** and **collection** problem

Policy and Social Goals of Regulation

- **Personal data** and **privacy** issues hardly addressable by national regulation
- **Security concerns** hardly controllable

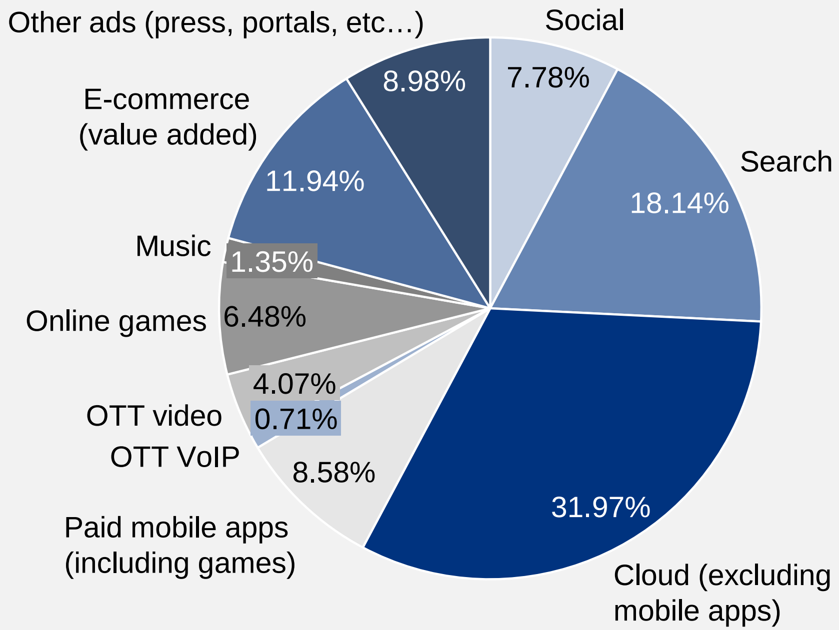
OTT will take ¼ of the total service market by 2014. Main drivers are cloud service offerings followed by e-commerce and search services.

Comparison of global Telco and OTT total market



- In 2017 **Telco** will generate 1.3 trillion Euro, OTT 402 bn Euro
- **OTT** growth by a **CAGR** 2012-2017 of **17.3%, Telco 2.6%**
- Biggest CAGR comes from **cloud services** (21.4%), followed by **OTT VoIP** (16%) and **social** (15.9%)

Breakdown of OTT service market 2017



- **Cloud service** will develop into the largest service segment
- **Search** and **e-commerce** will become secondary drivers, followed by social and mobile apps

Source: idate World Internet Service Markets 2014

The OTT universe is diverse. Particularly consumer applications are often funded by advertisement – operation itself is not profitable.

The OTT Business Models

OTT Classes	Example	Revenue source
OTT Communications	Skype, WhatsApp, Viber, Tencent	■ Advertisement ■ Subscription for premium services ■ Free services
OTT Media	YouTube, Netflix, Spotify, Watchever	■ Advertisement ■ Subscription for premium services ■ Transaction based ■ Free services
Commerce	amazon, WebShop, PayPal, ebay	■ Transaction based
Social Media	facebook, foursquare, Pinterest, twitter, LinkedIn	■ Advertisement ■ Subscription for premium services ■ Free services

Question of Profitability and Market Impact

- Business application funded by users, **consumer applications** rely on **advertising**
- **Consumer** applications **hardly profitable** – free service model has **disruptive** market effects
- High **valuation** not justified by business figures. **Market model** focus is on establishing market presence rather than monetization
    - OTT are **demand** and **innovation** drivers, but …
    - … with the current business model they **extract value** from national markets, and…
    - … **take out resources** that are required for broadband infrastructure investment and operations

Operators have developed multiple responses to counter the OTT challenge – ranging from blocking to partnering.

How Operators Face the OTT Challenge

Strategic Focus	Blocking OTT services	Charge OTT provider for network use	Partner with OTT players	Offer own "OTT services"	Offer "advanced integrated services"
Objective	▪ Block certain OTT services to secure revenues ▪ Make OTT services unavailable or unattractive	▪ Monetize OTT network traffic ▪ Apply "eyeball principle" (paradigm shift from 'content is king' to 'access to end-consumer' is king')	▪ OTT containment ▪ Complement own portfolio ▪ Secure high value segments by service differentiation	▪ Rebuild OTT portfolio ▪ Integrate OTT service in product bundle	▪ Secure revenues from high value segments ▪ Capitalize on high value propositions
Examples from MENA	du, zain, etisalat, STC	▪ None	mobily, VIVA, ooredoo, nawras, STC	▪ None	mobily, etisalat, ooredoo, du, STC

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3. **Regulatory Take Away**

There is an apparent imbalance regarding market and market entry conditions between licensed operators and OTT players. A new regulatory balance is not yet in sight.

The (un)-Level Playing Field

Regulation	Licensed Network Operators	OTT Players
Licensing	Subject to license and license fee	No license required
Quality of Service	SLAs included in the license	No quality requirements
Interconnection	Interconnection mandated	No interconnect requirements
Universal Service	Usually subject to universal service obligation	Not subject to universal service regime
Consumer protection	Subject to (enforceable) consumer protection policy	No or little enforcement power
Legal interception	Usually license condition	Country dependent
Taxation	Subject to national tax regime	Service dependent

Comparison of market conditions

- Network operator's **business model** is determined by **regulatory requirements**
- **OTT Players** are usually **free** of such **limitations**
- Current market setups have **not yet adapted** to the new competitive situation
  - Competition is **dysfunctional**
  - Regulators **punish** network operators that invest in local **infrastructure**, are an important source for local **employment** and are local **tax payers**

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Regulate, what historically was not regulated – IP-Peering? Managed IP-Voice-Intercon-nection is a form of QoS IP-Peering. First regulatory authorities started regulation.

The (un)-Level Playing Field – Example Managed IP-Voice-Interconnection – Selected Benchmarks					
Country	**Managed VoB market share (% of fixed subscriptions)**	**Obligation for fixed operators to offer IP-Voice-interconnection**	**Minimum number of PoI needed for national coverage**	**Tariff structure**	**Cost standard**
Austria	25.2	No	1	One regulated rate	Pure LRIC
Denmark	52	Yes	3	One regulated rate	Pure LRIC
France	69	Yes	1	One regulated rate	Pure LRIC
Macedonia	93	Yes	1	One regulated rate	LRIC+
Sweden	34	Yes	2	Set per interconnection level	Pure LRIC
United Kingdom	Information not available.	No	Information not available	One regulated rate	LRIC

Internet is leading to the convergence not only of services and business areas, but also of regulations and laws. The coordination of previously separate bodies is vital.

Organizational Convergence

Broad-casting
Media law
Content laws
Copyrights
Freedom of speech

Mail services
Privacy laws
Crime prevention

Financial services
Banking laws
Data protection
Fin. Regulation

Communi-cations
Legal intercept
Privacy
Data protection

Personal data storage
Data protection
Privacy laws

Internet Applications
Unified internet governance
Coordinated, combinated and harmonized regulatory framework

At a minimum regulation of the following should be closely coordinated :

- Financial services
- Data privacy and protection regulation
- Broadcasting/publishing
- Communications/ICT.

Beyond this the integration of broadcasting, communications (and publishing?) regulatory bodies should be assessed and implemented if appropriate.

DETECON Consulting

There are six take aways for regulators. A framework for future action should be based on three principles.

Regulatory Takeaways

1. OTTs are taking parts of the value chain, because of the Separation of Network and application layer.
2. The access and transport business case is under pressure – with significant implication for the national infrastructure.
3. National Telcos are losing revenues. But in many instances: Nobody is gaining them!
4. Economic value is shifting away from the national to international markets, but the Infrastructure is (mainly) local.
5. National operators are developing strategies to counter the OTT challenge. Not all will succeed!
6. Policy goals are more difficult to fulfill. Implementation of social or security measures will become a bigger challenge.

Principles for Action

- i Regulation should secure national infrastructure deployment and operations
- ii Regulation should not kill future business cases (by overdoing interventionist action)
- iii Regulation should not protect non-performing operators

Regulators have to discover new grounds. There are hardly benchmarks or best practices available. Some ideas have started to emerge.

Regulatory Responses

Confide in the market mechanism
Create and conserve a secure framework for an efficient market

Define framework for net neutrality
Allow business cases based on QoS differentiation while guaranteeing non-discriminatory ‚best effort' access, develop a secure framework for investments

Develop more sophisticated broadband plans / policies
Balance policy goals with profitability and develop of appropriate finance mechanisms, try to use market mechanisms where possible

Coordinate and combine Regulation
Operators and other companies need a level playing field

Make infrastructure self-sustaining
Move away from all-you-can-eat flat rates. Regulatory action should be based on access and transport stand-alone business cases/cost models. Access gaps to be re-defined

Building blocks of regulatory action

Support creation of large retail markets
Achieve critical volumes so that customer access becomes a value (eyeball)

It is a young discussion. Also look for developments in other industries

- Music industry (all-you-can-eat streaming could kill the value of the content)
- Print media (free content could kill quality papers)
- […]

Thanks for your attention

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