

# *Telecommunications regulation*

Strategy and policy

*December 2011*



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# 1

## *Introduction*

PricewaterhouseCoopers provides industry focused assurance, tax and advisory services to build public trust and enhance value for its clients and their stakeholders.

### *About PricewaterhouseCoopers*

More than 140,000 people in 149 countries across our network share their thinking, experience and solutions to develop fresh perspectives and practical advice.

Clients of PricewaterhouseCoopers firms all over the world select us because of the quality of the service that our people provide them every day. Each PricewaterhouseCoopers firm is dedicated to recruiting the best people, helping them develop their skills and competencies and enabling them to realise their full potential.

### *PwC and the communications industry*

the main drivers for change were the birth and development of new technologies including the advent of mobile, internet, NGN, etc. as well as regulatory changes and increasing liberalisation and convergence. As technologies continue to evolve and market liberalisation continues to progress, the pace of change is still accelerating and decision makers continue to be faced with long lists of complex issues to resolve.

PricewaterhouseCoopers is one of the world's leading advisors to the telecommunications industry, including fixed and mobile operators as well as governments and regulators. PwC has a large dedicated telecommunications industry group of business advisers. It is well placed in terms of resources, experience and reputation due to its size and range of skills including dedicated telecoms sector specialists with regulatory, commercial, economic and engineering expertise.



The communications industry has been characterised by rapid change.

# 2

## *Regulatory strategy and case building*

Given our specialisation in regulatory policy and strategy, we are ideally placed to advise operators and regulators in this context.

- We assist regulatory authorities in designing and defining their regulatory policy.
- We assist operators in shaping regulatory policy.

### *This work typically involves a combination of:*

- Support in Regulatory Negotiations
- Regulatory Impact Analysis
- Writing of regulatory submissions
- Representation at meetings
- Preparation of Regulatory Roadmaps
- Outlining regulatory issues likely to be raised by regulator and other operators
- Outlining regulatory issues the client would like to see tackled
- Developing strategy / position on each of the regulatory issues.

### *Our assistance in the area of regulatory strategy and case building covers a wide range of regulatory issues, including:*

- Regulated interconnection and access: Definition, terms, pricing, Local Loop Unbundling (LLU), Bitstream Access
- Mobile Termination Rates, Network effects
- NGN regulation
- Universal service obligations (USO): Scope and definition, Net cost of provision, Funding mechanisms, Tenders
- Access Deficit Contributions (ADCs)
- Numbering
- Spectrum issues and Licensing
- Regulatory Accounting: Asset Valuation, Accounting Separation, etc.
- Comparative efficiency studies (Stochastic Frontier Analysis)
- Cost of Capital.

# 3

## *Sector policy*

*We have advised Governments and Telecoms Regulators on many aspects of sector policy including:*

- Liberalisation
- Privatisation
- Licensing
- Spectrum allocation
- Regulatory Frameworks
- Regulatory Impact Analysis
- Interconnection regulations, retail regulations, etc.
- Universal Service Policy
- Numbering



We have extensive experience in advising policy makers on sector policy objectives and on appropriate targets that may be used in order to monitor the extent to which these objectives are reached. Targets should then be underpinned by an appropriate policy and implementation strategy.

The implementation will involve the formulation of suitable regulations to govern the relevant areas of the telecoms sector, including retail pricing, interconnection pricing, interconnection processes, spectrum allocation, numbering, etc.

# 4

## Cost modelling

Cost modelling is central to large parts of regulatory scrutiny in the telecoms sector. Due to the high proportion of fixed costs and the large extent to which network elements are shared between different services, the calculation of service costs in telecoms requires relatively sophisticated cost models.

### *Cost concepts and methodologies*

Depending on the precise purpose of the analysis, a range of different cost concepts may be applied, e.g:

- Fully Allocated Costs (FAC)
- Long Run Incremental Costs (LRIC)
- Stand Alone Costs (SAC)
- Marginal Costs (MC).

Whereas FAC models calculate average service costs by distributing costs over services based on cost allocation keys, the LRIC concept focuses on the additional costs caused by a given service (or set of services).

The SAC concept looks at the costs of producing a given service in isolation from others (i.e. without the economies of scope (or synergies) arising from the provision of several telecoms services).

Finally, MC focus on the cost of producing an extra unit (e.g. minutes) of a given service.

Different cost concepts are used for different purposes:

- Statutory accounts are based on FAC.
- Incremental costs (LRIC) are used for regulatory and commercial purposes as well as in the context of competition policy issues.

- Marginal Costs (MC) are particularly relevant in the context of short term pricing strategy and competition analysis.
- SAC represent an upper boundary in the context of price regulation.

### *Cost models*

Two major types of cost models may be used in the calculation of telecoms service costs:

1. Top Down models which are typically based on historical accounting data from the general ledger.
2. Bottom Up engineering models based on a simulation of the network an efficient entrant would build in order to provide the services in question.

### *Applications*

Cost models are essential tools used in a variety of commercial and regulatory contexts including:

- Product Profitability Analysis
- Interconnection
- Accounting Separation
- Competition Policy
- Pricing Strategy.

# 5

## *Interconnection*

We advise operators and regulators on a wide range of technical and commercial aspects of interconnection, including the preparation and negotiation of Reference Interconnect Offers (RIOs) and Reference Access Offers (RAOs).

The RIO details the terms and prices of access to interconnect services. It is one of the cornerstones of the liberalisation process, enshrining competitors' access to essential facilities and comprising the following elements:

- Service definitions: outline the permitted interconnection services, charging mechanism, form of access, and network layers at which interconnection can occur
- Technical manuals: specify principles and standards for interoperability including physical and functional interfaces
- Operations & Maintenance manual: covers procedures to be followed in the provision of points of interconnection and the handover of interconnection traffic
- Tariff schedules: specifies the prices to be charged for interconnection services.

A key issue for operators to manage is the initial and future definition of essential facilities and the price at which access to those facilities is determined. The initial focus of regulators and competitors is on access to core public switched telephone network (PSTN) services in order to support Carrier Pre-Select-based competition. The next step tends to encompass Local Loop Unbundling (LLU) (through the Reference Unbundling Offer (RUO), leased lines and data services, with some jurisdictions debating whether to impose the obligation to provide shorthaul data services such as gigabit Ethernet.

***Our assistance to regulators and operators in the context of interconnection includes:***

- Scenario analysis
- Regulatory submissions
- Support in negotiations with incumbent operators, entrants and regulators
- Facilitation of industry groups
- Communications strategy
- Production of consultation documents
- Responses to consultation documents, and
- Position papers.

We also provide advice on interconnection in Next Generation Network (NGN) and Next Generation Access (NGA) (see chapter 14).

We provide advice to mobile operators and regulators in the context of mobile termination rates and the role of network effects in the context of calculating Mobile Termination Rates (see chapter 16).

# 6

## *Retail price regulation*

### *Tariff rebalancing*

Historically, state owned telecoms operators have used revenues from profitable services such as international calls to subsidise unprofitable services such as line rental and local calls.

Apart from the absence of service costing information, this was due to the fact that governments used to set prices based on social desirability criteria.

With the advent of competition, cross subsidies are being eroded. As a result, the tariffs of incumbent operators need to be rebalanced with a view to reflecting service costs more closely. In this context, we advise on the extent and speed of recommended tariff rebalancing depending on an impact analysis by customer decile and depending on overall regulatory objectives.

### *Price cap regulation*

In the absence of effective competition, National Regulatory Authorities (NRAs) take direct action to regulate both end-user and network prices to prevent exploitation of dominance.

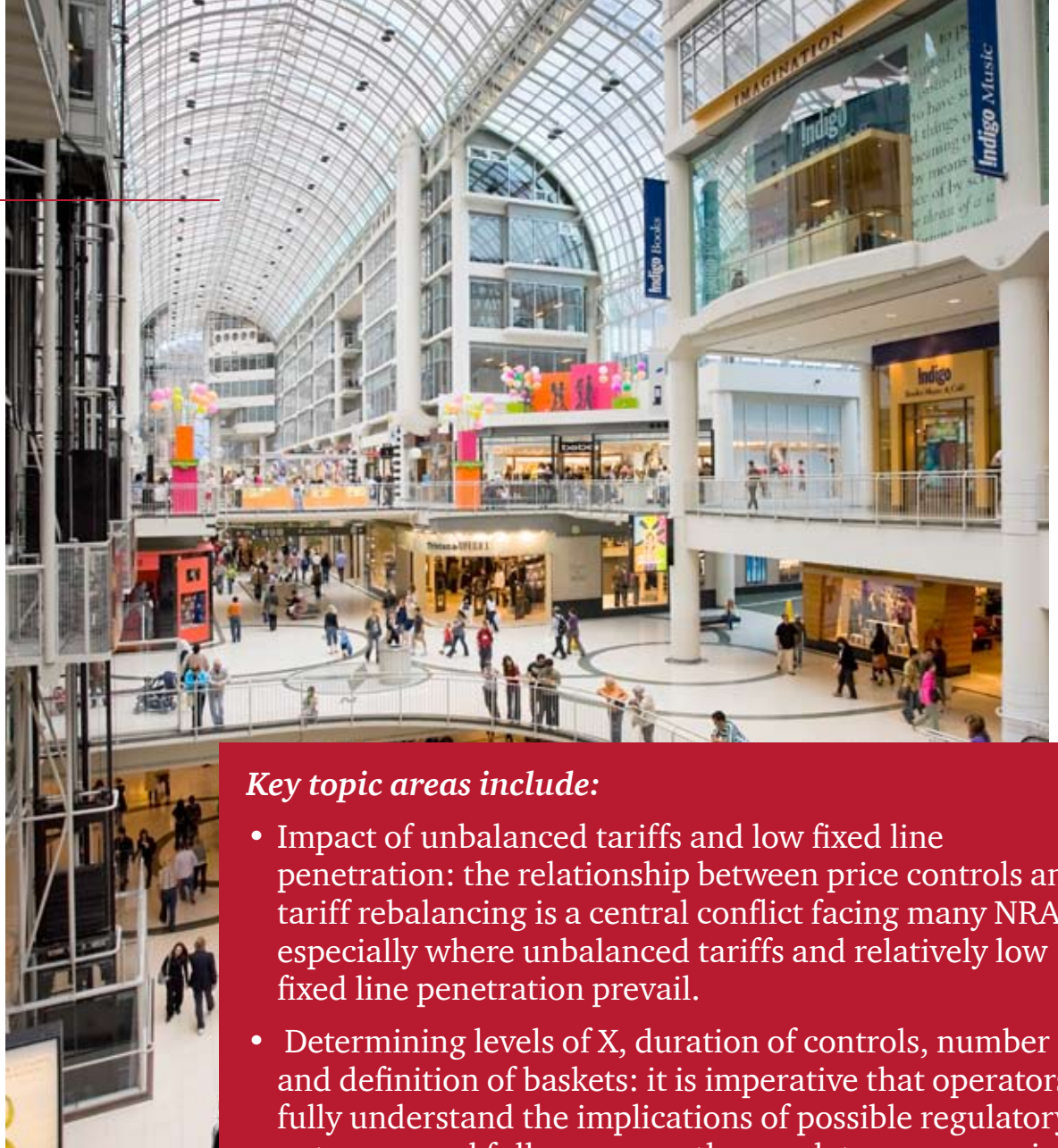
In the majority of cases, this has been performed through the establishment of a price control regime which limits the price changes permitted on baskets of services using a pricing formula such as “CPI – X”, where prices are permitted to increase by the rate of inflation less an “X-Factor” calculated to ensure that perceived inefficiencies are removed over time.

Price cap regimes limit the increase of the average price of a given set of services (or, in fact, prescribe a decrease). This method has the advantage of combining two desirable features, namely:

- A certain extent of pricing flexibility that enables the regulated entity to compete effectively, and
- Incentives to operate as efficiently as possible (when price increases are limited, extra profit can be generated from cost reductions).

Often set in a multiyear period, this has the advantage of removing the requirement to review prices on an annual basis, but increases the risk of applying an inappropriate cap. This issue has historically been one faced by fixed operators, but the current mobile call termination rate debate has brought it to the centre of MNOs’ board agendas (see chapter 16).

It is imperative for operators and regulators to fully engage in this process and to undertake their own modelling in order to contribute to the debate on the basis of an informed position.



### *Key topic areas include:*

- Impact of unbalanced tariffs and low fixed line penetration: the relationship between price controls and tariff rebalancing is a central conflict facing many NRAs especially where unbalanced tariffs and relatively low fixed line penetration prevail.
- Determining levels of X, duration of controls, number and definition of baskets: it is imperative that operators fully understand the implications of possible regulatory outcomes and fully engage in the regulatory process, in order to influence decisions.
- High levels of fixed cost: the telecoms industry is characterised by high levels of fixed cost and capital expenditure – increasing the sensitivity of financial performance to price cap levels.

### *Retail Price Regulation and Universal Service*

We assist governments and regulators in designing regulatory safeguard caps and other measures aimed at regulating the conduct of universal service providers (see chapter 15 on Universal Service Obligations).

We assist operators in maximising their commercial and strategic potential under the constraint of retail price regulation (see chapter 7 on Retail Pricing Strategy).

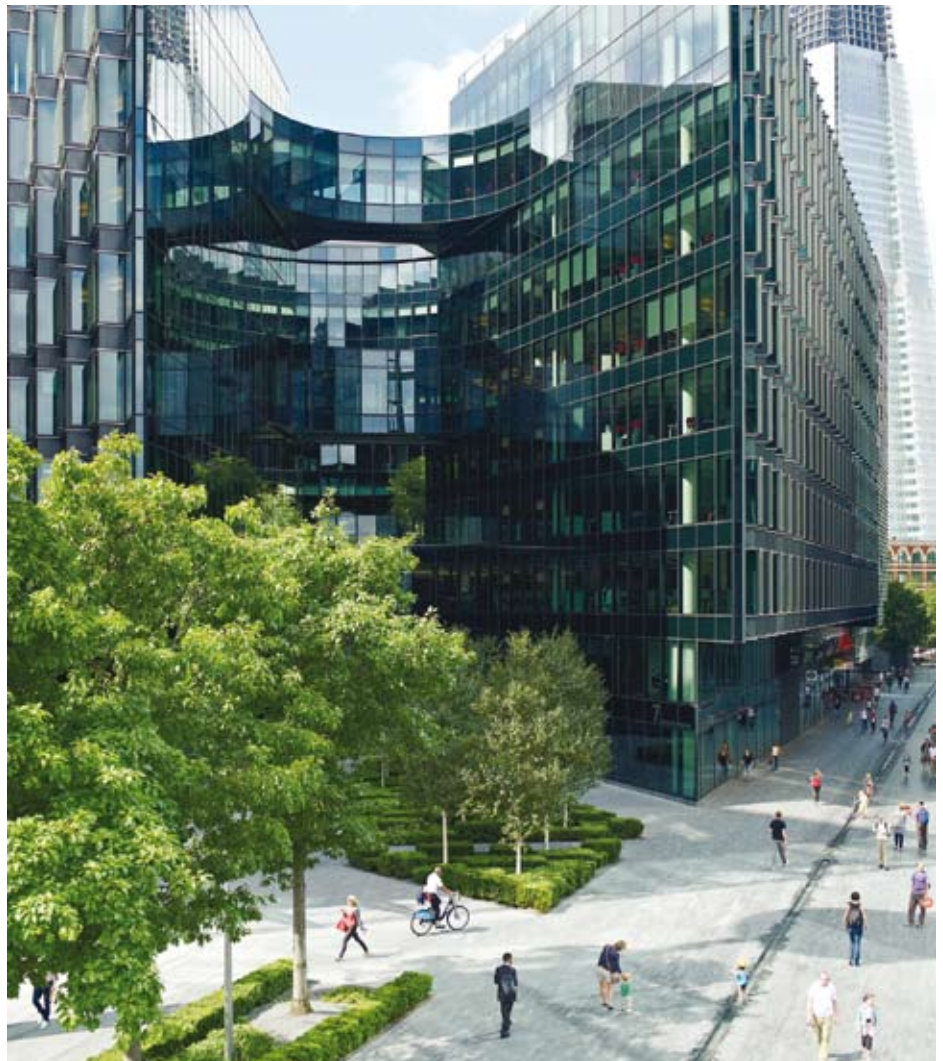
# 7

## *Retail pricing strategy*

### *PwC approach to retail pricing strategy*

We have advised fixed and mobile operators across the globe on retail pricing strategy. PwC uses a retail pricing strategy approach based on the following key elements:

- The level of prices, in relation to:
  - Service costs
  - Demand elasticity
  - Competitive pressures
  - Regulatory constraints.
- Optimal rebalancing between high and low value customers on the one hand and high and low vulnerability on the other hand.
- Strategic market segmentation is used to tailor packages to specific customer segments and to estimate the revenue impact (Brand buyers, Value buyers, Price buyers, etc.).
- Addictive and creative pricing strategies are used to attract additional customers by offering attractive introductory offers and or price packages.
- We also advise telecoms operators on competition policy issues related to retail (and wholesale) pricing (see chapter 13).



### *Retail pricing strategy and competition policy*

Successful retail pricing strategies need to be checked against regulatory constraints including provisions against anticompetitive behaviour (see chapter 13 on Competition Policy).

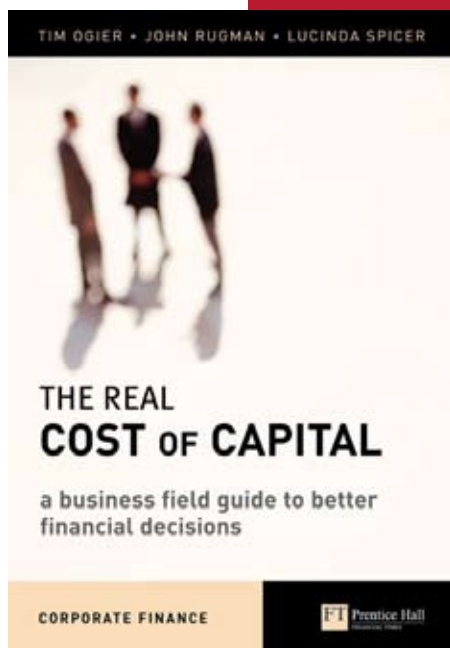
# 8

## *Cost of capital*

*The cost of capital tends to play a central role in regulation, i.e. in the context of:*

- Price cap regulation
- Interconnection rate regulation
- Competition analysis
- Discounted Cash Flow Models (DCF)
- Licence valuations
- Business valuations.

Typically, telecoms operators use a combination of debt and equity to fund their operations. PwC has developed a proven methodology for calculating the weighted average cost of capital (WACC) based on the cost of debt, the cost of equity and the funding structure in question (see “The Real Cost of Capital” by PwC Partner Tim Ogier and PwC Director John Rugman at [www.pwc.co.uk/costofcapital](http://www.pwc.co.uk/costofcapital)).



# 9

## *Comparative efficiency analysis*

In regulating retail and/or interconnection tariffs, regulators tend to consider the costs incurred by an efficient operator in providing a given set of services.

The rationale is that operators should be compensated for the necessary costs only, not for any costs that may have been incurred due to inefficient operation.

We have used a number of approaches in assessing and/or defending the level of efficiency of telecom operators. The main approaches used are:

- Stochastic Frontier Analysis (SFA)
- Ordinary Least Square Analysis (OLS)
- Data Envelopment Analysis (DEA)
- Total Factor Productivity Analysis (TFP).

### *Stochastic frontier analysis & ordinary least square analysis*

These are statistical and economic methods that can be used to assess an operator's efficiency relative to a theoretical optimum efficiency of 100% (SFA), against the average performance (OLS) and against the 'best in class' operator. The SFA approach has the added advantage of filtering out statistical 'noise', i.e. observation errors.

### *Data envelopment analysis*

The DEA approach is a (deterministic) linear programming technique that can be used to construct an efficiency frontier based on a sample of observations (operators).

### *Total factor productivity analysis*

The TFP approach focuses on the relationship between the respective quantities of input and output factors (as opposed to the cost of input factors).

All these techniques have their own pros and cons but are generally superior to simplistic comparisons with the help of simple index numbers (such as the number of lines per employee). In many cases it is advisable to use several of the above approaches, potentially with different specifications in order to arrive at a full assessment of comparative efficiency.

# 10

## Separation support

*Separation of integrated businesses is a regulatory tool aimed at:*

- Increasing transparency
- Identifying cross subsidies
- Facilitating scrutiny from a competition policy perspective
- Ensuring non-discrimination (e.g. between a downstream business unit and its competitors).

*We advise clients on the various forms of separation and their respective regulatory, commercial and strategic implications.*

- Accounting Separation separate financial reporting for each of the operator's lines of business in its regulatory accounts (see chapter 11).
- Operational Separation creation of a separate business unit, and operational rules to establish Chinese walls between this new business unit and the incumbent operator's other operations.
- Structural Separation making the new business unit into a separate subsidiary.
- Ownership Separation divestment by the operator of its newly created subsidiary (resale to different shareholders).

The costs of implementing separation tend to be very significant but depend on the form of separation and on the boundaries chosen. We advise operators and regulators on the form of separation most suitable to the situation in hand, and on the implementation of the recommended form of separation.



# 11

## Regulatory accounting

*PwC provides expert advice to operators and regulators on regulatory accounting. The main areas include:*

- Service Costing (FAC, LRIC, etc.)
- Production of regulatory accounts
- Regulatory Reporting and Accounting Separation
- Asset valuations
  - Historical Cost Accounting (HCA)
  - Current Cost Accounting (CCA)
  - Index based valuation
  - Market price based valuation
  - Modern Equivalent Asset (MEA) valuation.

We have the breadth and depth of expertise to advise on both the design of regulatory accounting frameworks as well as the implementation of regulatory accounting systems in a range of suitable software options. This includes the design and negotiation of valuation methodologies as well as the implementation of asset valuations.

In many cases an asset revaluation has to be preceded by a review or reconstruction of the Fixed Asset Register (FAR).

In a world of falling technology prices and rising costs of labour and land, valuations often have a significant impact on regulated companies' allowed profits, on service costs, interconnection rates and therefore on the bottom line of company results (and therefore market prices).

We also advise on different accounting conventions, in particular Operating Capital Maintenance (OCM) and Financial Capital Maintenance (FCM). The latter differs from OCM in that it includes the effect of holding gains (or losses) in the Profit and Loss (P&L) account.

# 12

## *Business modelling*

We support governments, regulatory authorities as well as fixed and mobile operators in all areas of business modelling.

*PwC uses proven business modelling techniques in order to assess a wide range of regulatory and commercial uses:*

- Full Financial models
- Regulatory negotiation tools
- Options and impact analysis
- Demand forecasting and Revenue Modelling (e.g, in the context of price cap negotiations, licence bids, etc.)
- Elasticity estimation (e.g. based on traditional surveys, internet surveys, and/or econometric analysis based on time series and/or cross sectional data)
- Licence valuations
- Merger clearance (see chapter 13)
- Network externalities (see chapter 16.2)
- Service costing (see chapter 4).



We have the in-house capability to use a range of suitable business modelling software (e.g. Excel, Access, Mathematica) depending on the type and purpose.

# 13

## Competition policy

*PwC Global Telecoms Group Cooperates closely with PwC's Competition Economics Group in advising operators, regulators and competition authorities on a wide range of competition policy issues:*

- Market definition and analysis
- Market Dominance – an important issue for many telecoms operators
  - Methodology for assessing market dominance
  - Moved away from simple market share based assessment
  - Moving towards a more differentiated approach assessing market power on the basis of several variables (ability to influence market price, etc.)
  - Obligations of dominant operators (e.g. price regulation, accounting separation, detailed regulatory cost reporting, etc.)

We assist operators in ensuring compliance with the relevant competition law and policy. In this process we set out the relevant issues and restrictions imposed by competition law and we provide compliance check models using the relevant pricing and costing information to assist operators in monitoring compliance.

We support regulators and competition authorities in identifying and investigating instances of suspected anticompetitive behaviour and we advise operators on how to ensure that their pricing strategies (and

other aspects of conduct) stay clear of anticompetitive activities. In this context we provide operators with check lists and spreadsheet models that facilitate compliance checks.

*We also advise on aspects to do with anticompetitive behaviour such as:*

- Predatory pricing
- Price squeeze and margin squeeze
- Bundling
- Horizontal and vertical leveraging of market power
- Refusal to deal / supply.

*We have advised many clients of the assessment of mergers:*

- Impact of merger on consumers, prices, competition
- Merger clearance support: Merger simulation
- Looks at trade-off between unit cost increase and margin decrease
- Efficiency defence of mergers
- Optimal number of operators.

# 14

## *Next Generation Networks (NGN)*

Due to the transition from parallel circuit switched voice networks and packet switched data networks, to integrated IP networks, telecoms operators are faced with new cost allocation challenges.

- Cost allocation on the basis of voice minutes: no longer meaningful
- How to split costs between voice and data?
- How to account for differences in Quality of Service (QoS) requirements of different services?
  - Delay
  - Packet loss
  - Blocking probability

As voice becomes less significant as percentage of total traffic: what will happen to the business model (still very reliant on voice revenue)?

*PwC are at the forefront of research in this area. We have developed an approach to allocate costs in the context of IP based (and other packet switched) networks:*

- Based on effective bandwidth concept
- Takes into account data amount and QoS characteristics
- Can be used to allocate costs between voice and multiple data services.

*Our NGN service costing approach lends itself to a wide range of applications:*

- Service costing
- Interconnection regulation
- Capacity planning
- Pricing

We also advise operators in the context of their NGN strategies including the transition and migration to NGN networks and procurement strategies.

# 15

## *Universal Service Obligations (USO)*

Universal service policy aims at ensuring that a sufficient level of communications services are provided in areas and to customers that are unprofitable (due to low usage and/or high cost locations such as remote or mountainous areas).

Regulators use various tools in order to implement their universal service policy objectives. These range from Universal Service Obligations (USO) on the incumbent (or another) operator to tender processes under which operators compete for subsidies that are offered for the provision of a given set of services to areas that are not commercially viable.

Understanding the scale of USO costs, and establishing a mechanism for compensating operators, is a key element of any telecoms social policy.

- Traditionally, incumbent fixed line operators face a situation where they are required to install lines for all customers who request them yet are only permitted to charge a standard rental fee. This ignores the fact that some customers, particularly in rural areas, may be very expensive to connect
- This excess cost in some cases can be a significant contributor to the overall access loss
- For mobile operators, uncertainty over the cost of incremental fixed access leads to the fundamental question of whether it is more cost effective to contribute to a Universal Service Fund (USF) or to participate in the delivery of Universal Service Targets (UST)

The accurate estimation of the cost of universal service by an independent party is critical to incumbent and competitor alike: the incumbent's perception that excessive cost disadvantages the providing operator is balanced by competitors' perceptions of any Universal Service Fund as a stealth tax.

### *Key drivers of the cost of universal service costs include:*

- Population density
- Existing fixed and mobile penetration levels
- Scope of universal services to be provided
- Subscriber traffic consumption patterns by area
- Relative prices for fixed and mobile line rental
- Intangible benefits of brand ubiquity

### *Key drivers of the appropriate funding mechanism include:*

- Level of independence of the regulator / Universal Service Agency from the Government and the incumbent
- Level of executive powers granted to the regulator/ Universal Service Agency
- Number and size of competitors



***We advise regulators and operators on many aspects of universal service including:***

- Review of international precedent including our own breadth of experience in respect of USO costing and negotiation
- Design of Universal Service Policy
- Specification of robust methodologies for determining the net USO cost using best in class Long Run Incremental Cost modelling (see chapter 4)
- Identification of the level of uneconomic exchange lines and quantifying the average loss incurred per line
- Calculation of the impact of mobile substitution on net cost going forward
- Assessment and quantification of the other potential benefits of USO provision
- Calculation of the total funding requirement and identification and specification of all potential funding mechanisms
- Design and implementation of Funding Mechanisms for universal service
- Implementation Strategy for Universal Service Policy
- Design of Pilot Projects and Tenders

# 16

## *Mobile Termination Rates (MTR)*

**Mobile Termination Rates tend to be regulated because of the bottleneck nature of this service: a call to a mobile subscriber can only be terminated by this subscriber's operator.**

Mobile Termination Rates have been examined by regulators around the world. Regulators, almost without exception, have concluded that the market is not sufficiently competitive to drive the price of mobile-termination rates to reasonable levels. As such, regulatory intervention has been widespread. The main tool of regulators has been to require operators to charge cost-based rates for calls terminating on their networks.

Regulated MTRs tend to be based on the costs of providing this service – although it may be advisable to consider the inclusion of a mark-up for network effects (see chapter 16.2 on Network Effects).

***In establishing the costs of mobile termination it is essential to adopt an appropriate approach in relation to a number of modelling issues, including:***

- Spectrum
- Technology (GSM, CDMA, TDMA, UMTS)
- Depreciation
- Efficiency
- WACC
- Service volumes
- Size of operator.

There has been much debate as to what cost-based prices mean, and no clear trend has been established in the regulatory community as to what best practice cost modelling is. As such, operators face enormous risks and uncertainty when a regulator embarks on a process to set cost-based mobile termination rates. Regulators, on the other hand, face the challenge of identifying and implementing welfare maximising approaches to MTR regulation (see chapter 16.2 on Network Effects).

We have advised operators and regulators in many countries on the conceptual design and the implementation of suitable costing systems for the calculation of the costs of mobile termination.

In addition to the costing issues above there are further aspects to be considered (see chapter 4).

### **Network effects / network externalities**

The benefit a subscriber derives from using a mobile phone depends on the number of other persons who can contact, or be contacted by, this subscriber.

In economic terms, this is an externality: current subscribers receive a benefit (or not) from another person's decision to subscribe to this service as well (or not) – which is taken into account by the latter.

Economic theory and models demonstrate that the market will not lead to an optimal outcome unless a suitable mechanism is used to correct ('internalise') the externality. In the case of mobile networks, the market would lead to an outcome in which less than the desirable number of people subscribe to the service. This market failure can be corrected with the help of a mechanism that induces additional persons to subscribe to the service as well. Typically, this mechanism involves higher termination rates and lower charges for subscription (or handset subsidies).

We have applied a range of demand models in order to quantify the level of mobile termination rates that lead to a socially optimal outcome, i.e. maximum welfare.

In this context it is important to ensure a suitable choice and specification of the model in functional terms as well as the

estimation of the applicable parameters, in particular the demand elasticities (see chapter 12 on Business Modelling).



# 17

## *Number portability*

Number Portability is a widely-used tool to enable customers to switch networks without having to change their number.

There are a number of different NP solutions and we can help operators or regulators argue for the NP solution that maximises the net benefit to consumers, given that the cost of implementing NP is significant.

In some instances, especially in smaller markets, the costs of NP can outweigh the benefits and we can help operators articulate this in their submissions to regulatory authorities.

We advise regulators on regulatory impact analysis related to NP (and other issues) and we assist operators by modelling the impact of NP on their churn levels, business plans, and commercial position.

# 18

## *Mobile Virtual Network Operator (MVNO) Access*

Mobile Virtual Network Operator access is a key issue for both access providers and access seekers. We can help operators estimate the appropriate cost of providing or gaining access to a mobile network depending on the different MVNO models deployed.

We also provide advice on the various other issues that should be considered with respect to MVNO access from both a regulatory and strategic viewpoint. This will help operators understand the risks and implications before setting/requesting a price for wholesale MVNO access.

We can also help operators develop their MVNO strategy in terms of customer segmentation, margin expectations and competitive response.

We can also help operators implement their MVNO offering by writing Service Level Agreements (SLAs) and advising on the organisational tools that will be required to support MVNO activity.

We advise regulators on the tradeoffs between MNO and MVNO entry to the market in terms of welfare impact and the implications for sector policy.

# 19

## *Spectrum allocation and policy*

Spectrum constitutes a scarce resource. Many communications regulators are under an obligation to implement a spectrum allocation framework designed to ensure optimal use of spectrum.

As markets are liberalised and new technologies evolve, the historical use of available spectrum tends to require updates. In many cases part of the spectrum that was initially allocated to government can be reallocated. Frequently, benefits can be achieved by reallocating spectrum in such a way that frequencies are freed up for new technologies and for usages that result in maximum benefit and welfare generation.

Over the last few years, increasing use has been made of market based mechanisms in the allocation of scarce spectrum. Market based allocation mechanisms include various types of auctions and spectrum trading.

An efficient spectrum policy also requires a streamlined and effective spectrum allocation mechanism in line with international best practice.

*We provide advice on a wide range of spectrum allocation policy including the following areas:*

- Spectrum usage
- Spectrum allocation process
- Spectrum reallocation (e.g. from government to commercial usage)
- Spectrum auctions
- Spectrum trading
- International trends and best practice in relation to spectrum policy and allocation.



# 20

## *Regulatory compliance and assurance*

PwC provides assurance to operators and regulators over regulatory financial statements and compliance with other regulatory requirements.

PwC provides expert advice to operators and regulators on the design and implementation of reporting requirements, compliance programmes and independent assurance regimes. The main areas include:

- Compliance risk assessment
- Governance and compliance processes and controls
- Negotiation of independent assurance requirements
- Audit of regulatory financial statements (Accounting Separation, CCA, LRIC etc)
- Assurance over all aspects of regulatory compliance reporting:
  - Price-cap compliance
  - Market statistics
  - Product performance statistics
  - Operational separation requirements.

As the regulatory environment develops, the compliance risk faced by operators changes rapidly with the focus of information provided to the regulator moving from historic cost financial information, through current cost valuations and incremental cost models, towards a greater reliance on operational data such as product delivery lead times, fault rates and comparative performance indicators in support of operational separation requirements.

We have the breadth and depth of experience to advise on all aspects of regulatory compliance. PwC has worked with operators and regulators worldwide to advise on the development of compliance frameworks, reporting requirements and independent assurance requirements. We have provided assurance over:

Historic and current cost accounting separation statements

- Financial reporting associated with operational separation requirements
- LRIC service costing models
- Price cap compliance
- Controls assurance over operational separation governance and monitoring processes
- Product performance KPIs
- Behavioural measures such as provision of employee training
- Contract assurance.

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## *Selected project experience*



A number of examples of our project experience are available via our web site [www.pwc.co.uk/eng/issues/telecoms\\_regulation.html](http://www.pwc.co.uk/eng/issues/telecoms_regulation.html) (or in printed form on request).

If you require any additional examples of our experience in relation to a particular issue or geographical area, please do not hesitate to contact one of the individuals listed opposite.

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## Contacts

In this section we provide contact details for some of our regulatory specialists below.



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