Tariff Regulation and Implementation

Scott W Minehane
Managing Director

Presentation to
Regional Meeting of Study Group 3
Hanoi
4 March 2009

Principal Company Office

22 Derby Street
Collingwood
Victoria 3066
AUSTRALIA

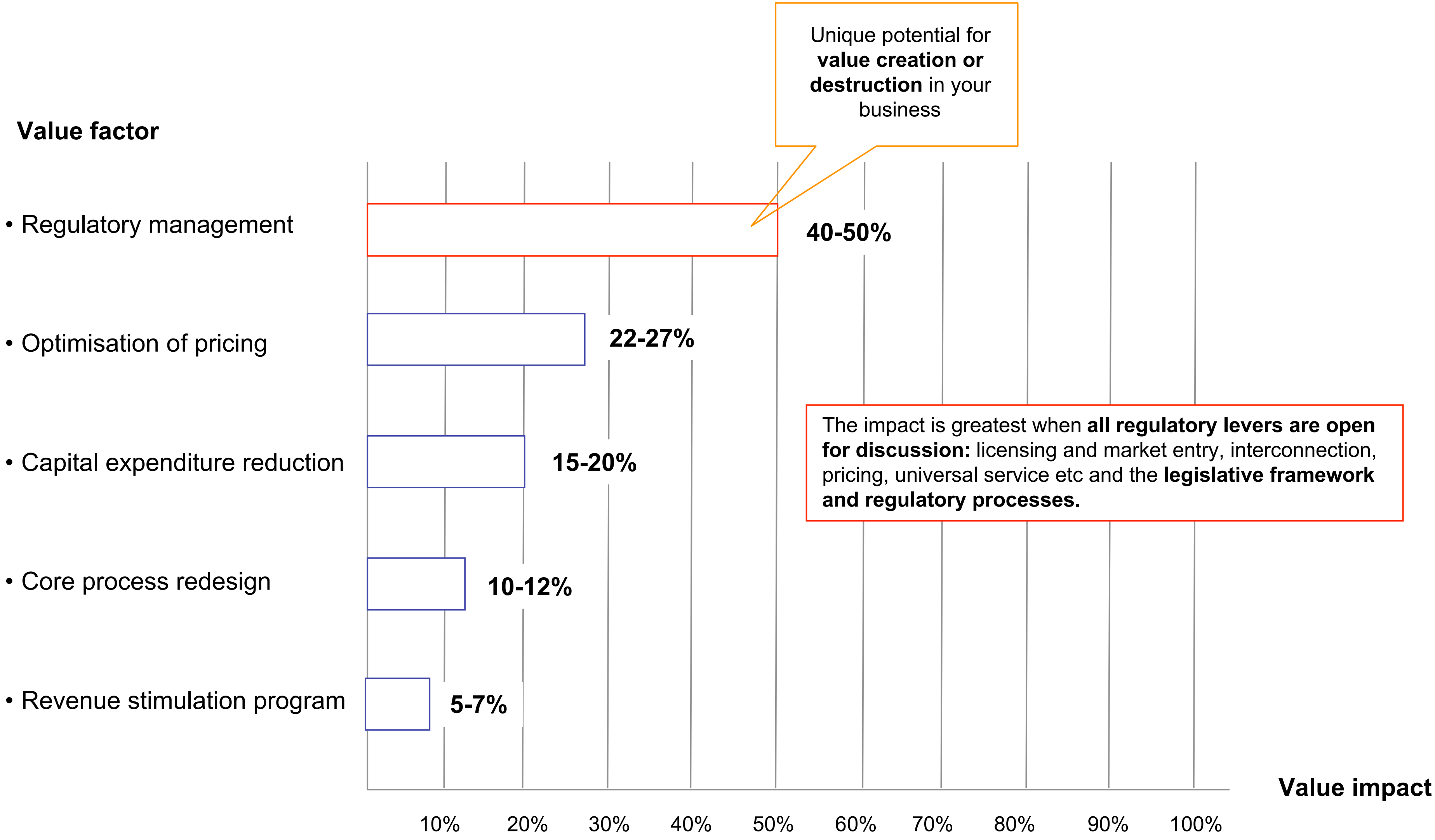
P: +61 3 9419 8166
F: +61 3 9419 8666
W: www.windsor-place.com

‘The ten most frightening words in the English language are …

I am from the Government and here to help you.’

Ronald Reagan: Campaign Speech, Texas, 1984

Regulatory issues is the largest single value lever affecting the industry



Source, McKinsey, A Case Study in Assessing and Managing the Impact of Telecommunications Deregulation, Brussels December 2000

The agenda for today's presentation is the following:

1. The meaning of 'tariffs'
2. Tariffs and policy objectives
3. Retail tariff regulation
4. Wholesale tariff regulation
5. Case studies in tariff implementation

It is important to be clear about what is meant by “tariffs”.

- A tariff for a given telecommunications service is more than just the charges for that service
- A tariff consists of a description of the service, the terms and conditions of service provision and the applicable charges
- Different regulatory approaches apply to retail tariffs and to wholesale tariffs reflecting different policy objectives

1. The meaning of ‘tariffs’
2. Tariffs and policy objectives
3. Retail tariff regulation
4. Wholesale tariff regulation
5. Case studies in tariff implementation

Regulation is the deliberate and conscious action of governments to intervene in the free workings of the market

Regulation is generally only justified on two grounds:

- To prevent or to correct market failure
- To pursue specific policy objectives

Intervention to regulate tariffs may be readily justified.

Retail

To ensure that certain services are affordable to users

(i.e., pursuit of policy objective)

To prevent excessive charges for services

To prevent below cost charging for services

(i.e., guard against market failure)

Wholesale

To ensure that certain services are available to competitors, e.g., ULL, bitstream

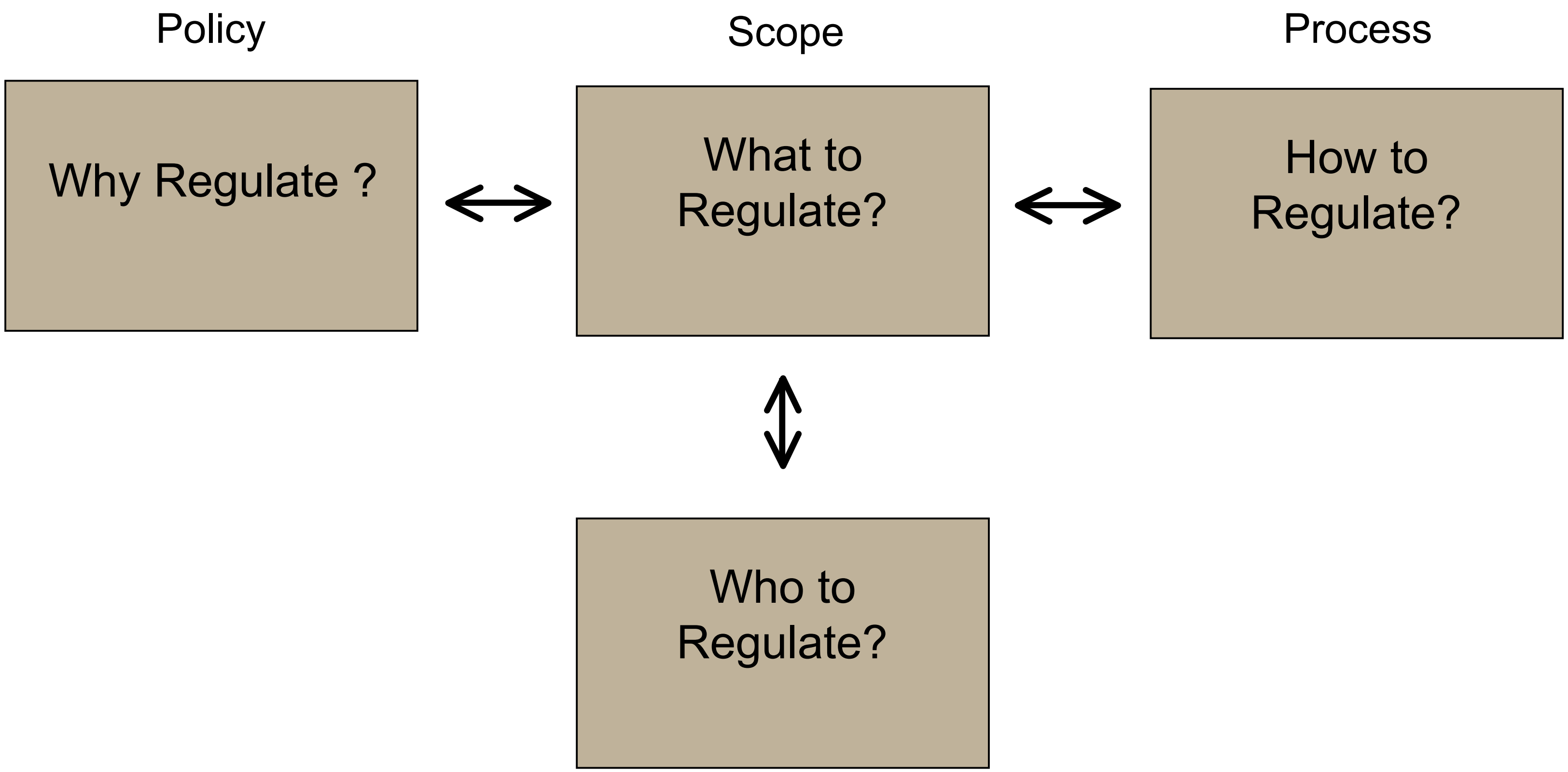
(i.e., pursuit of policy objective)

To prevent excessive charges for services

(i.e., guard against market failure)

1. The meaning of ‘tariffs’
2. Tariffs and policy objectives
3. Retail tariff regulation
4. Wholesale tariff regulation
5. Case studies in tariff implementation

Retail tariff regulation is addressed in a four part framework.



Regulation of retail tariffs is a key competitive safeguard - particularly in the early stages of market liberalisation.

- Basic fixed line service charges have typically been regulated because of their social importance and the absence of effective competition
- Regulation helps ensure that the costs of each service are recovered, i.e., cross-subsidisation of services is eliminated
- Regulation helps ensure that consumer interests are protected, (i.e., price, quality, fair trading, misleading advertising)

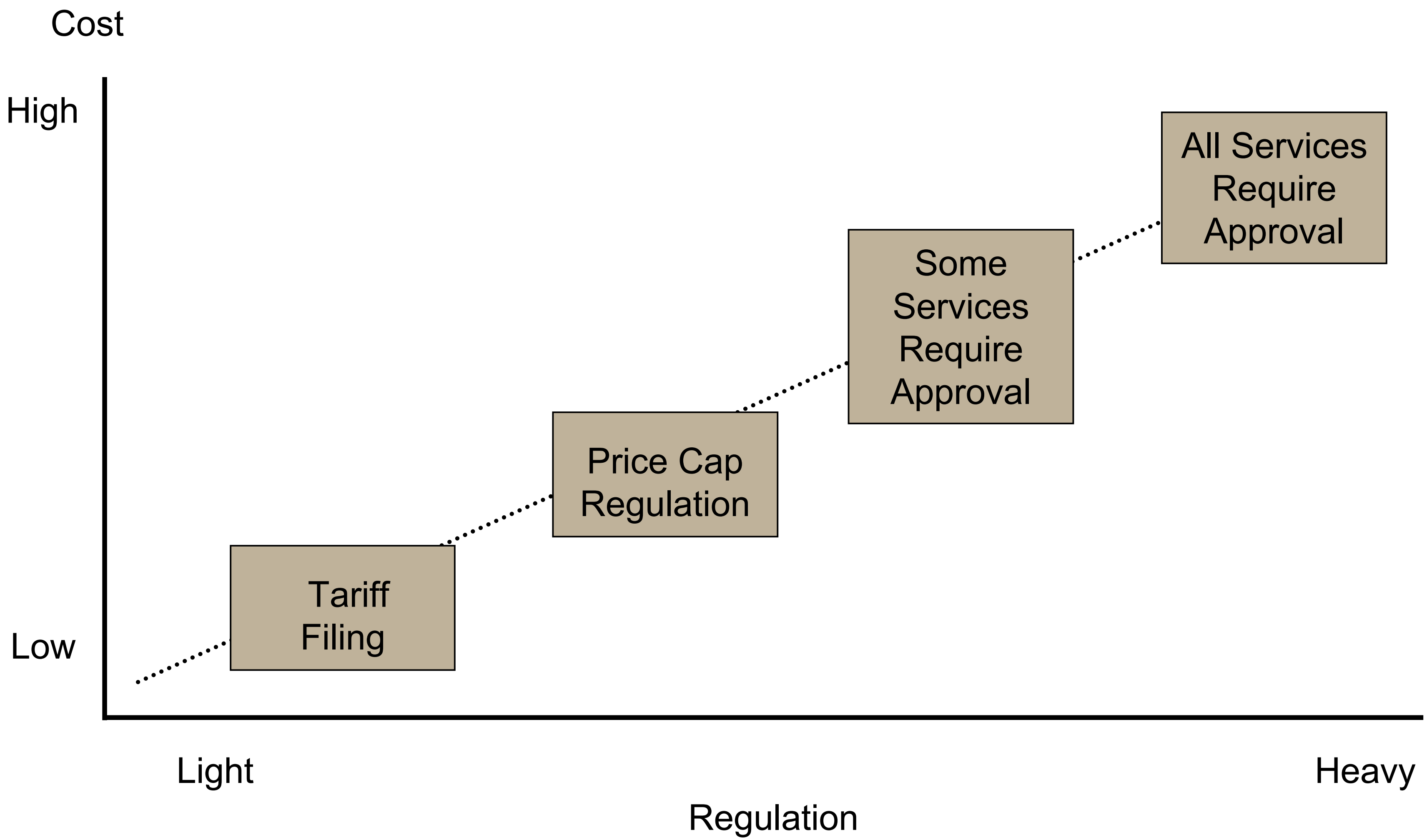
Regulatory requirements may differ across the range of services that operators provide on the basis of market competitiveness.

- Fixed line rentals and service charges have typically been regulated (limited competition and social importance)
- Mobile services have not generally been subject to close regulation (regarded as competitive)
- Internet services have rarely been regulated (considered competitive or too difficult)
- Some markets, (e.g., US) draw a distinction between competitive and monopoly markets

Regulatory requirements may differ between operators.

- Incumbent operators or operators with SMP are often subject to tariff regulation while other operators are not
- SMP regulation or dominant carrier regulation is intended to promote competition through creating a level playing field
- Mobile operators and ISPs may fall outside the scope of tariff regulation on the basis of the services that they provide

Regulation of retail tariffs may be applied in different forms



All Services Require Approval	• Regulator must approve tariffs for all new services and any changes to tariffs for existing services • Emphasis is on general regulatory control
Some Services Require Approval	• Regulator must approve tariffs for specified services only • Emphasis is on critical services
Price Cap Regulation	• Operator must manage tariffs across a group of specified services • Emphasis is on charges and consumer benefits
Tariff Filing	• Operator files tariffs with regulator • Emphasis is on transparency and consumer interests

Regulation of retail tariffs may be applied through different yet reinforcing regulatory instruments

Legislation

- Requirement for operators to comply with regulation, policies, licence conditions generally or
- Requirement for operators to comply with specific tariff regulation

Regulation

- Sets out scope and process of tariff regulation

Policy / Guideline

- Sets out scope and process of tariff regulation

Licence Condition

- May contain specific tariff requirements or
- Obligation to comply with tariff regulation or policies

A generic Tariff Regulation may contain the following:

- Regulator may require operators to file tariffs for specific services
- Services must be supplied in accordance with tariffs
- Charging principles (fair, cost based, non-discriminatory)
- Tariffs are deemed approved if not rejected within 30 days
- Applicable charges for specific services
- Tariffs must be publicly available

1. The meaning of ‘tariffs’
2. Tariffs and policy objectives
3. Retail tariff regulation
4. Wholesale tariff regulation
5. Case studies in tariff implementation

Regulation of wholesale services is a key regulatory safeguard

- Regulation helps ensure that essential input services are available in the marketplace
- Regulation helps to promote competition by encouraging new market players
- Regulation guards against "margin squeeze", i.,e., inflating wholesale prices to reduce available retail margin

Wholesale services have been regulated because:

- Wholesale services have been fundamental to the success of competition policy
- Significant differences exist in market power between incumbents and new operators
- Complex technical, legal and economic issues are involved
- Interconnection has been a stumbling block to effective competition

Services at the wholesale level comprise three categories.

Interconnection

- Services to enable traffic to pass between networks
- For example, call termination, call origination
- Service scope and terms subject to regulation

Access

- Services which enable the network facilities of one operator to be used by another operator
- For example, unbundled local loops
- Service scope and terms subject to regulation

Other Wholesale

- Services which enable the network facilities of one operator to be used by another operator
- For example, directory services
- Service scope and terms subject to commercial negotiation

While “interconnection” and “access” are related they are distinct.

- Interconnection is a bridge between different networks to enable customers of each network to communicate with each other

- Access enables an operator to use the facilities and / or services of another operator

Wholesale tariff regulation applies to specific operators.

- Incumbent operators when markets are liberalised
- Operators which are deemed to have SMP or are declared to have SMP through a formal process

Wholesale tariff regulation may be applied in different forms.

Interconnection

- Reference Interconnection Offer (RIO)
- Regulator establishes RIO requirements, decides which operator prepares RIO and approves RIO
- Interconnection requirement typically in legislation and reinforced through regulations, guidelines and licence conditions

Access

- Reference Access Offer (RAO) similar to RIO
- Access services list or “declared” services subject to specific supply requirements

Other Wholesale

- General principles apply only
- Commercial negotiation

Four generic approaches to interconnection regulation

Effective and efficient **interconnection arrangements need to be backed by the regulator**. The rates and procedures for interconnection must be enforceable, available publicly and supported by dispute resolution mechanisms (because there are ALWAYS disputes!)

Can we **map each of the Region 3 markets** against these approaches?

Mandatory Interconnection.	Regulatory Guidance	Bias to Commercial Negotiation.	Pure Commercial Negotiation.
The regulatory agency prescribes key terms	Using mechanisms such as Reference Interconnect Offer	With a fall back to regulatory intervention	With a fall back to commercial legal arrangements

Spectrum of Regulatory Intervention

High ← → Low

The key components of a RIO are the following:

- RIO is presented as an Access Provider's offer to an Access Seeker
- Comprehensive description of services and terms & conditions of service provision
- Charges for services
- Service quality requirements

In the light of current industry pressures, interconnection pricing trends are emerging.

Trends	Key Drivers
• Interconnection charges are falling	• IP technology reduces costs • Incumbent power eroded
• Differentials in interconnection charges between fixed and mobile networks are eroding	• Fixed mobile convergence • Power shift from fixed to wireless operators given substitution
• Interconnection charges are becoming reciprocal	• Power shift from fixed to wireless operators with convergence • Incumbent power eroded
• Interconnection pricing structures are being simplified	• Power shift from fixed to wireless operators • Incumbent power eroded

Best practice interconnection pricing principles include the following.

- Prices are based on underlying cost using an acceptable methodology, LRAIC, FDC
- Prices are non-discriminatory
- Prices are transparent

Interconnection prices can be set via a range of cost and non-cost based approaches:

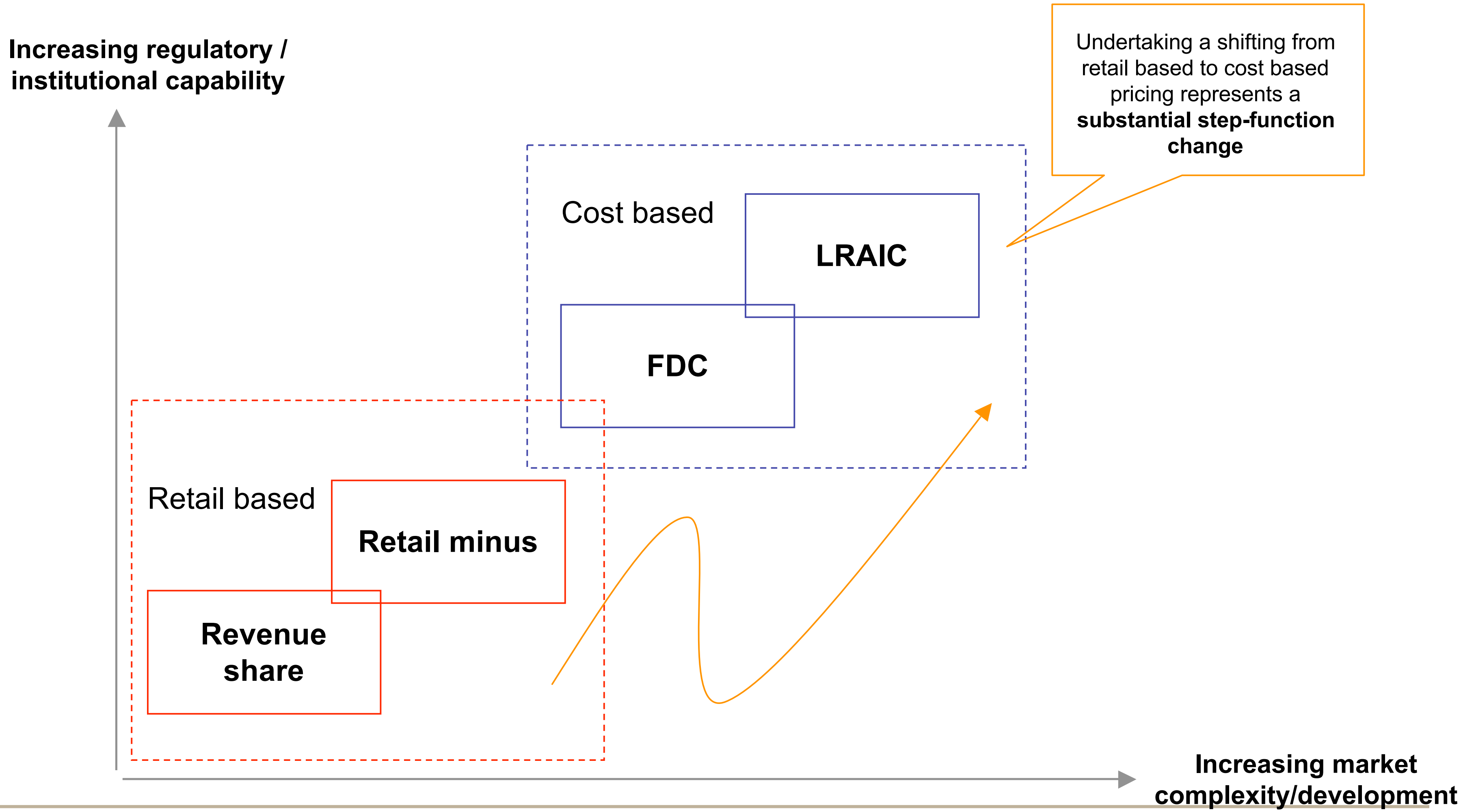
Cost Based

- Long run average incremental cost (LRAIC)
- Fully distributed cost (FDC)

Non Cost Based

- Retail minus
- Revenue Sharing
- Sender Keeps All
- Negotiated
- Benchmarking

As telecommunications markets become more complex and institutional capabilities develop, there is a common shift to cost-based models



The key features of the LRAIC costing approach are as follows:

- LRAIC is a forward looking cost methodology
- Measures the direct additional cost of providing interconnection allowing for the replacement of assets and the cost of capital
- Average cost of providing an additional service group

There are also other LRIC variations …

Including the following which are used in various global jurisdictions.

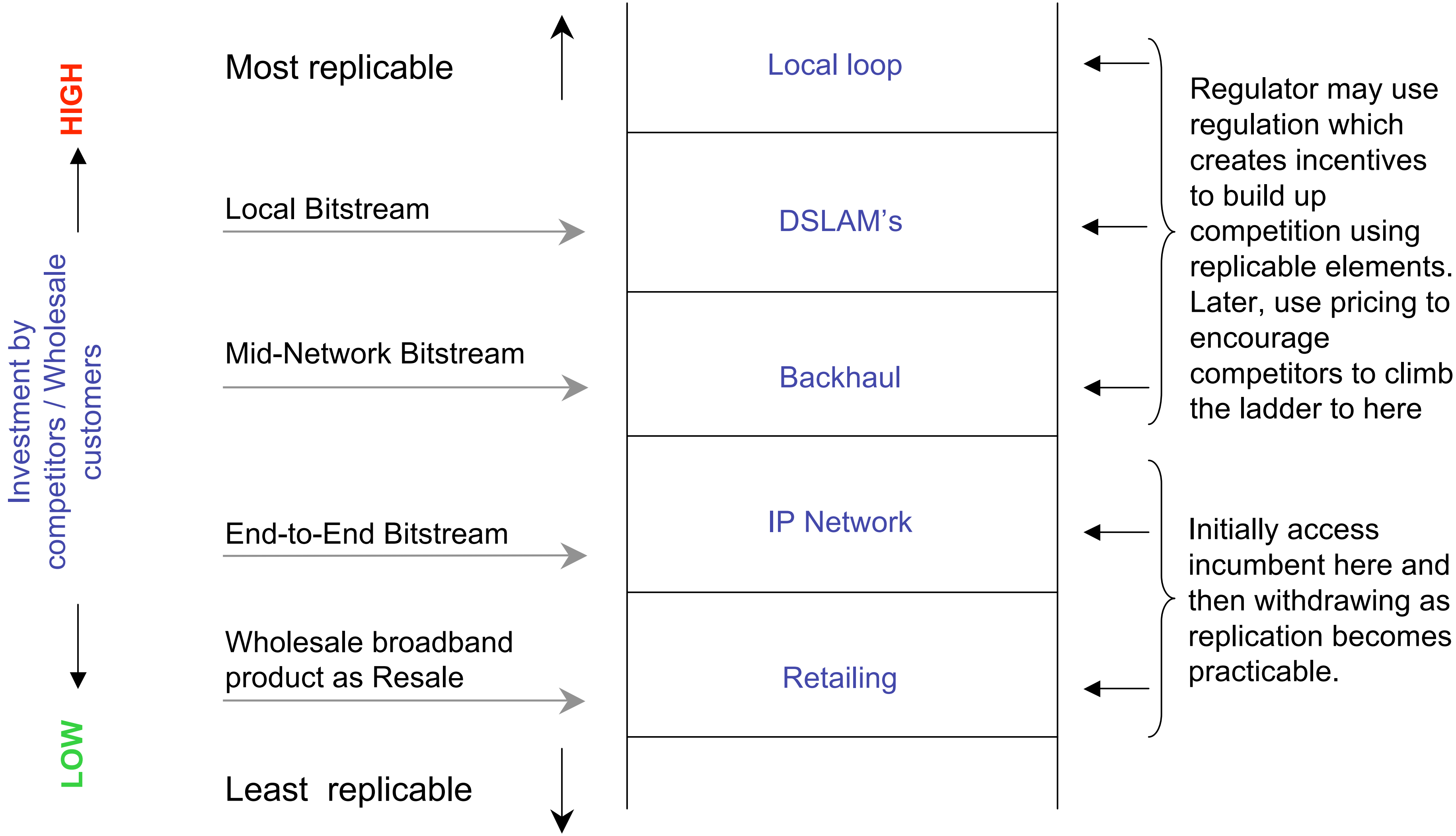
TSLRIC

- Total Service Long Run Incremental Costs
- Incremental costs associated with the provision of an increment of a product or service
  - long run incremental costs a firm incurs in providing a defined service assuming all other production remains constant
  - alternatively, total annual cost a firm would avoid in long run by not providing a defined service
- Includes all costs associated with service provision including service specific fixed costs and service volume sensitive costs
- Used in various countries including
  - Australia,
  - European Union
  - New Zealand

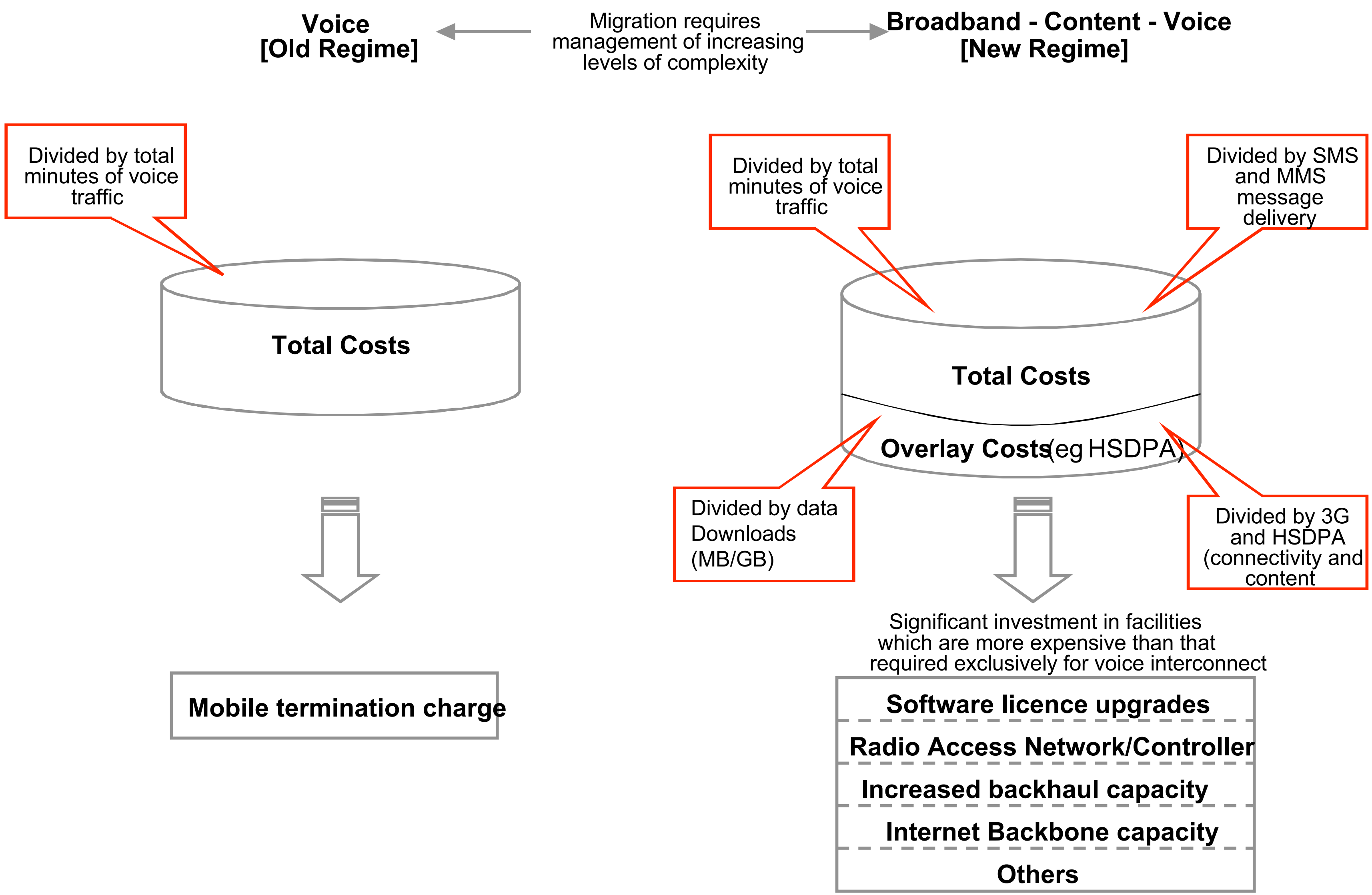
TELRIC

- Total Element Long Run Incremental Cost
- The incremental costs associated with the provision of an increment of a network element (rather than a specific service)
  - defined by FCC to set prices incumbents may charge new entrants to lease Unbundled Network Elements (‘UNEs’) as established by 1996 Telecoms Act
  - designed to calculate the long-run average incremental cost of a network element incorporating cost of capital and depreciation
  - should provide scope of incumbent operators to fully recover forward-looking costs of providing UNEs to new entrants
- Primarily used in the United States

NGN introduces a range of options for interconnection



Adopted from The University of Warwick, Business school. Telecommunications to Electronic Communications, Martin Cave, as


Voice
[Old Regime]
Migration requires management of increasing levels of complexity
Broadband - Content - Voice
[New Regime]
Divided by total minutes of voice traffic
Total Costs
Mobile termination charge
Divided by total minutes of voice traffic
Divided by SMS and MMS message delivery
Total Costs
Overlay Costs (eg HSDPA)
Divided by data Downloads (MB/GB)
Divided by 3G and HSDPA (connectivity and content
Significant investment in facilities which are more expensive than that required exclusively for voice interconnect
Software licence upgrades
Radio Access Network/Controller
Increased backhaul capacity
Internet Backbone capacity
Others

1. The meaning of ‘tariffs’
2. Tariffs and policy objectives
3. Retail tariff regulation
4. Wholesale tariff regulation
5. Case studies in tariff implementation

1. United Arab Emirates
2. Malaysia
3. Bangladesh

- Duopoly market structure
- Etisalat is a state owned incumbent providing a full range of fixed and mobile services
- du is a new entrant providing mobile services and fixed services on a limited basis
- TRA is the regulatory authority

The TRA has promulgated several key regulatory instruments to regulate retail and wholesale tariffs:

Price Control Policy	R & W
Price Control Procedure	R & W
Price Transparency Policy	R
Interconnection Pricing Policy	W
Interconnection Instruction	W
Interconnection Dispute Resolution Procedure	W
Directions on Interconnection Price	W

- Under the Price Control Policy, unless exempted, all new services and tariffs for existing services must be submitted to the TRA for approval
- Prices must not be anti-competitive, involve cross-subsidy or bundle “monopoly” with “competitive” services
- The Price Transparency Policy requires that tariffs must be readily available to users and fully disclose terms and conditions
- Etisalat and du are subject to the same rules

- The Interconnection Instruction sets out the contents of a RIO including the services to be offered
- The Interconnection Pricing Policy requires Etisalat to develop a costing model for the pricing of interconnection services
- The Interconnection Dispute Resolution Policy sets out a procedure for resolving interconnection disputes
- In the absence of a cost model, the Directions on Interconnection Price establish charges for specific interconnection services

- Retail tariff regulation is burdensome for operators and the TRA
- TRA can hold up approval indefinitely
- Regulatory instruments are poorly structured (instruments should be consolidated, RIO not relevant in a duopoly market, “monopoly” and “competitive” services not defined)
- Requirement for cost model has not been complied with / enforced

1. United Arab Emirates
2. Malaysia
3. Bangladesh

- Fixed network operators: Telekom Malaysia, Time and Maxis
- Mobile network operators: Celcom, Maxis, DiGi, U Mobile and Time dotCom
- 4 companies awarded with 2.3 GHz spectrum for WiMAX roll-out
- Fixed line penetration of 15.9%, cellular penetration of 80.8%
- MCMC is the regulatory authority

15 July 1998	**General Framework for Interconnection and Access - TRD 006/98**	•Introduced cost based interconnection charging •Retail price floor for STD and IDD Calls
1 July 2003	**Commission Determination on the Mandatory Standard on Access Pricing, Determination No. 1 of 2003**	•Access pricing for regulated facilities and services in the form of 24 hour weighted average prices fixed for 2003-2005 •Revoked parts of TRD 006/98
1 January 2006	**Commission Determination on the Mandatory Standard on Access Pricing, Determination No.3 of 2005**	•Extended access pricing in MSAP 2003 Determination from 1 Jan 2006 until MSAP is revoked. •NFP, NSP and ASP subjected to MSAP
15 February 2006	**Commission Determination on the Mandatory Standard on Access Pricing, Determination No.1 of 2006**	•New access pricing for regulated facilities and services in the form of 24 hour weighted average prices fixed for 2006-2008 •NFP, NSP, ASP and CASP subjected to MSAP
1 August 2007	**Variation to Commission Determination on the Mandatory Standard on Access Pricing (Determination No. 1 of 2006), Determination No. 2 of 2007**	•Variation to MSAP 2006 to include access pricing for fixed origination/termination based on IP
31 December 2008 - 30 June 2010	**Variation to Commission Determination on the Mandatory Standard on Access Pricing (Determination No. 1 of 2006), Determination No. 1 of 2008**	•Variation to MSAP 2006 to extend access pricing in MSAP 2006 from 31 Dec 2008 to 30 June 2010. •Note that there was no public consultation on the extension

Fixed

Telephone Regulations 1996

⇩

Communications and Multimedia (Rates) Rules 2002

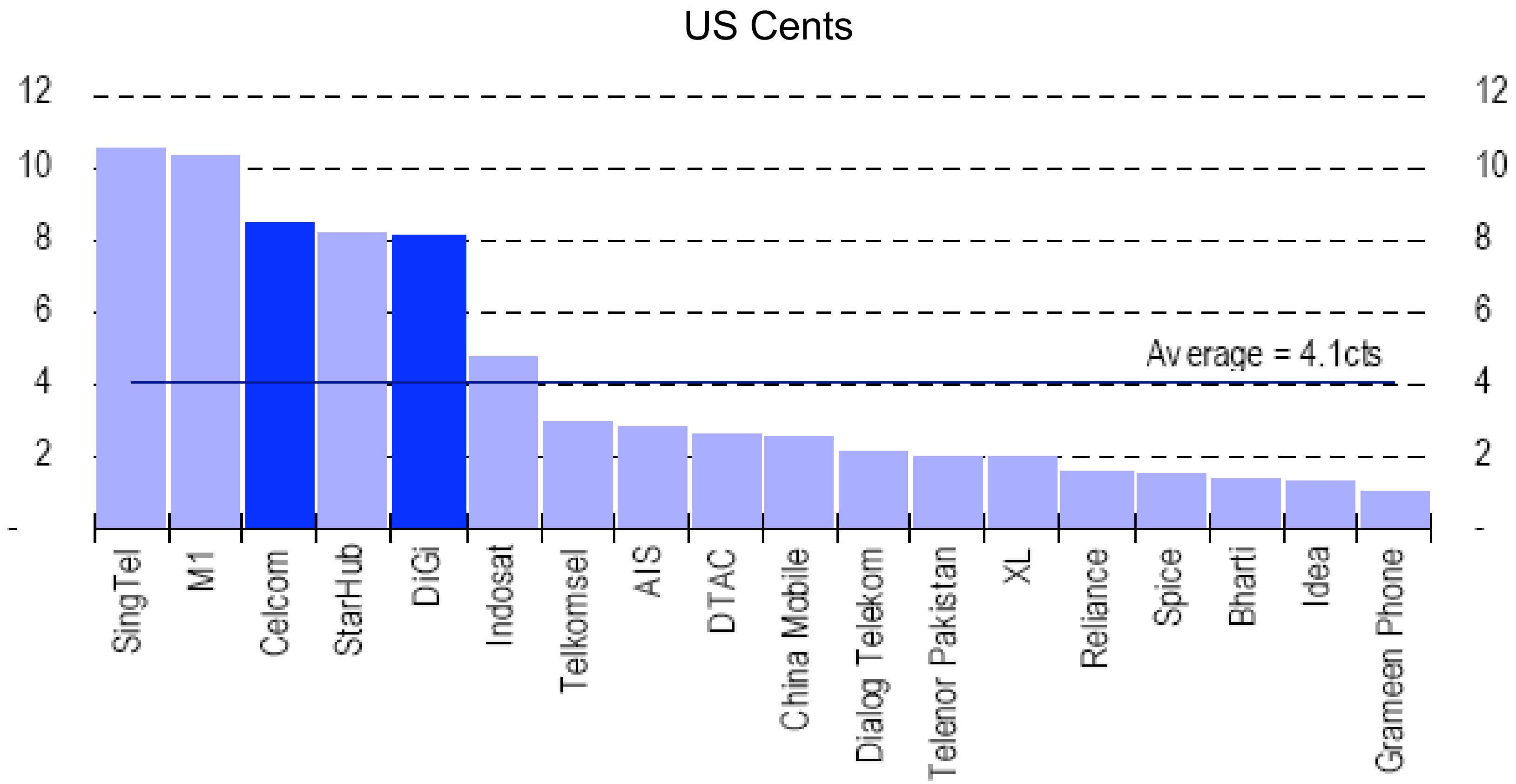
•Revoked Telephone Regulations 1996
•Came into operation on 1 March 2002
•Implemented major tariff rebalancing which reduced long distance and international call charges by more than 20% while increased maximum residential rentals by 10% and local call charges by 25%

Cellular

Telecommunication (Automatic Telephone Using Radio Services) Regulation 1986

•Fixed rates for mobile calls
•Amended in 1996 to prescribe a price cap
• 1 August 2000, Government abolished controls on rate setting for mobile services.
•As such, mobile operators are free to determine access fee and airtime charges in accordance with market rates.

Regional comparisons of average per minute tariffs are interesting



Source: CIMB Research, Kuala Lumpur, 2008

- The Government's policy of introducing competition is one of the key reasons for deregulation of mobile tariffs. However, this has to be considered in light of ensuring investment and revenue returns to operators.
- While the Government implemented major rebalancing of tariffs in 2002, the tariffs are not yet as balanced as those in Australia where rebalancing was much more extensive. But fixed to mobile substitution means that further rebalancing not possible (eg Singapore).
- The extension of 2006 MSAP for a surprisingly long 18 months without public consultation is without recent Malaysian precedence and not consistent with global best practice.

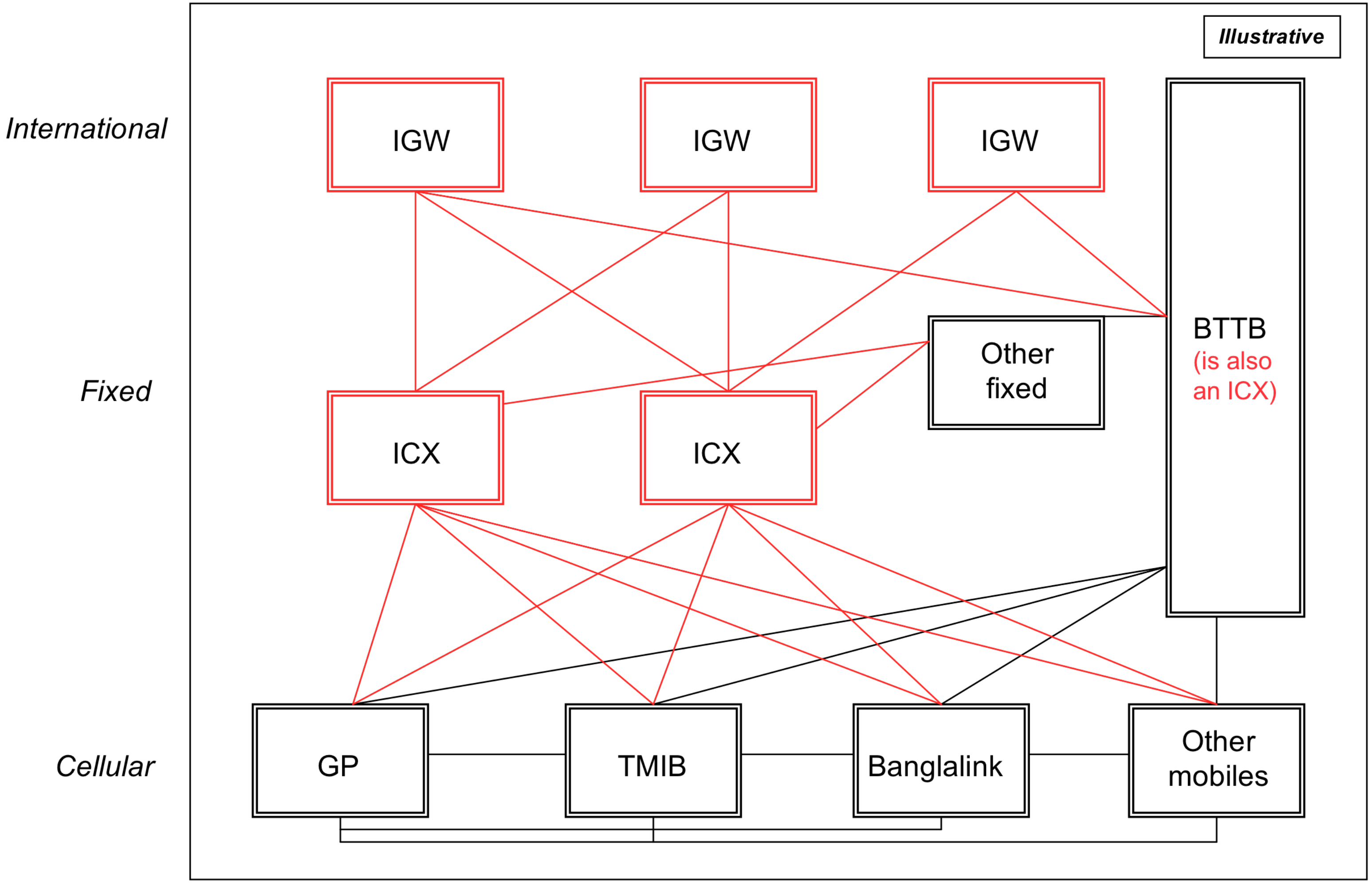
- New approaches to interconnection pricing will be required for NGN given fundamental changes to network economics and declining relevance of time based charging.
- There is likely to be a debate in Malaysia as whether wholesale and retail pricing for High Speed Broadband Services should be regulated.
- While implications of wholesale regulation on retail behaviour in the NGN is likely to remain relevant to the regulator, a more dynamic flexible approach should arguably be adopted - especially given the current economic situation.
- While it is debatable whether the Government's partial funding [nearly USD1 billion] for the rollout of HSBB Network is sufficient basis for regulation of HSBB charges, the optimal approach should be for the operators themselves to commercially negotiate wholesale charges for access to HSBB Services. This approach is consistent with the intention of the Ministerial Direction on High Speed Broadband.

1. United Arab Emirates
2. Malaysia
3. Bangladesh

- BTCL (previously known as BTTB) is the largest domestic fixed line and until recently, had monopoly over international gateway services.
- There are 6 operators providing cellular mobile services: GrameenPhone, Aktel, Citicell, Banglalink, Warid Telecom and Teletalk.
- Mobile phones continue to be the main means by which most of Bangladesh’s consumers gain telecommunications access.
- Mobile tariffs are amongst the lowest in the world.
- The BTRC is the regulatory authority.

- The Interconnection Regulations 2004 and the International Long Distance Telecommunications Services Policy 2007 (“ILDTS Policy”) introduced revenue sharing interconnection arrangements and replaces the previous regime of leaving the methodology of fixing interconnection charges to negotiating parties (although cost-based charging identified as the most appropriate method).
- The ILDTS Policy requires routing of all access network service operator’s domestic inter-operator calls and international calls interconnection exchange operators.
  - Given the mandatory routing of all interconnection traffic to ICX operators, this means that ANS operators will only have interconnection agreements with ICX operators.
  - ANS operators do not have direct contact with a third party such as a foreign correspondent or international gateway operators.

Key structural changes from the implementation of the ILDTS Policy



ILDTS Policy changes in Red

Domestic Inter-Operator Call Traffic	**International Incoming Calls**	**International Outgoing Calls**
•BTRC declare Domestic Interconnection Charges. •ANS operator pays VAT (if any) •ANS operator pays 10% of the balance of the prevailing Domestic Interconnection Charges after deducting VAT (if any) to ICX operator.	•BTRC declare minimum Termination Rate. •IGW operator may negotiate with a foreign operator to fix the Termination Rate above the minimum rate declared by BTRC subject to BTRC's approval. •IGW operator pays 15% of the balance of the Termination Rate after deducting VAT (if any) to ICX operator. •IGW operator pays 20% of the balance of the Termination Rate after deducting VAT (if any) to ANS operator.	•BTRC declare maxim Origination Rate. •IGW operator may negotiate with a foreign operator to fix the Origination Rate above the maximum rate declared by BTRC subject to BTRC's approval. •ANS operator pays VAT (if any). •ANS operator pays settlement amount to foreign operator. •ANS operator pays 15% of the balance of the Origination Rate after deducting VAT (if any) to IGW operator.

We will not be focussing on retail tariff regulation today. However, we would like to highlight that:

- There is no price capping regulation structure in Bangladesh.
- Section 48 of the Bangladesh Telecommunications Act 2001 imposes obligations on operators in respect of tariffs and charges.
  - Prior to providing a service, an operator must submit a tariff setting out the minimum and maximum charges for the service, to the BTRC for approval.
  - When submitting a proposed tariff to the BTRC, an operator must provide justifications for it.
- According to the ILDTS Policy, BTRC will formulate tariff structures with the objective of providing affordable telecommunications and generating government revenue.
  - Tariffs will be fixed and subject to periodic review.

- The endorsement of revenue sharing in the ILDTS Policy is in global terms unusual.
- The lack of any principles or move to introduce cost-based wholesale charging is at the root of recent attempts to reduce call termination rates.
- The ILDTS Policy does not deal with a requirement on BTCL to pay for call termination even though there is a directive to this effect. This means that general mobile subscribers are effectively subsidising fixed subscribers.
- BTCL as a PSTN operator will pay for termination of calls at TK0.40 per minute. Under the ILDTS Policy, BTCL as an ICX will charge for transit of calls at TK0.04 per minute.
- The move to the ICX regime provides an opportunity to move away from the situation where mobile operators also pay for or contribute to the cost of BTCL's interconnect capacity which BTCL then charges the mobile operators to use.

- In the medium term, there should be a move to cost-based charging for wholesale tariffs.
- International benchmarking should be applied to determine initial cost-based levels for interconnection charges, with potentially a glidepath to the new interconnection charges.
- Fixed to mobile interconnection charges should be introduced to compensate mobile operators and to increase mobile penetration.
- Mobile to fixed interconnection charges should be reduced to cost to end inefficient subsidy from mobile to fixed sector.

In conclusion ...

‘If you don’t know where you are going you are certain to end up somewhere else.’

Yogi Bera, New York Yankees Coach, 1969

Thank You

I would be pleased to answer any questions you might have ….