Towards Evidence-based Policy
Session 1&2 - DOC Indicator Portal training, Tshwane, August 2012.
Prof Alison Gillwald, University of Cape Town/RIA
Perfect Competition

- Markets with ‘perfect competition’:
  - Structure and requirements:
    - many buyers, many sellers
    - Complete transparency
    - Homogeneous goods
    - Conduct and performance
    - Incentives to lower prices and costs
    - Incentives to innovate
    - ‘Normal’ returns to firms in this risk-class
  - But, there are market failures:
    - natural monopolies,
    - information asymmetries,
    - public goods etc
Network industries and natural monopoly aspects

- Historically, utilities considered "natural" monopolies
- Natural monopoly exists if the least cost production of the total market demand is achieved by the existence of a single firm.
- Impractical or inefficient to duplicate
- Changes over time due to technological advances, from vertically integrated chain of supply to isolated network component
- Throughout the world: telecommunications, electricity, natural gas and water granted legal monopoly status
- More recently, natural monopoly restricted to grid
- Introduction of competition in other parts of the market, e.g. VANs in telecoms, electricity generation and retail etc.
Changing market structure of network industries

- Historically: public-owned vertically-integrated monopoly provision of services, more recently:
  - Competition in up- and/or downstream markets
  - ...+ Vertical integration, or
  - ...+ Vertical separation with independent infrastructure, or
  - ...+ Joint ownership of infrastructure
  - Competing vertically integrated firms
Why regulate? (1)

- Public interest
- Market absence of failure
- Monopolies and natural monopolies
  - single seller, no substitutability, market entry and exit difficult
  - Reduced output, higher prices, transfer of income from consumers to producers
- Externalities
- Spillovers- price of a product does not cost true cost to society
- Information inadequacies
- Continuity and availability of services
- Tough and cream skimming
Why regulate? (2)

- Anti-competitive behaviour and predatory pricing
- Public Good and Moral Hazard
- Scarcity and rationing - regulating short supply
- Distributional justice and social policy
- Market allocative efficiency to maximise welfare, but not within groups/individuals in society
- Rationalisation and co-ordination
Objectives of regulation

- Promote universal access to basic telecommunications services
- Foster competitive markets to promote:
  - efficient supply of telecommunications services
  - good quality of service
  - advanced services, and
  - efficient prices
- Prevent abuses of market power (excessive pricing and anti-competitive behaviour by dominant firms)
- Create a favourable climate to promote investment to expand telecommunications networks
- Promote public confidence in telecommunications markets through transparent regulatory and licensing processes
- Protect consumer rights, including privacy rights
- Promote increased telecommunications connectivity for all users through efficient interconnection arrangements
- Optimize use of scarce resources, such as the radio spectrum, numbers and rights of way
Tools of Regulation

- Price Regulation (Wholesale and Retail)
  - Rate of Return
  - Price Caps
- Entry control (Licences)
- Various types of licences with various powers and obligations
- Vertical disintegration (e.g., AT&T)
- Legislative prohibition: Rules compelling operator to provide interconnection and governing the provision of that interconnection (Unbundling of network components)
- Transparency
  - Prescribing cost accounting procedures
  - Require operators to publish prices of products for usage baskets
Best practice regulation

- Legislative mandate
- Accountability
- Due process
- Expertise
- Efficiency
- Trade off of claims
Dynamic issues in Regulation

- Regulatory lag: A lag between rate reviews – incentives for cost reduction under rate of return regulation, more profit...
- Ratchet effect: The use of information on past profits in deciding future price caps lowers incentives in price cap regulation
- Operator might act contrary to regulators objective:
  - Lowering the quality of access to the network (delay upgrades that allow rival to offer new services, degrading rival quality)
  - Increasing their access price to the network (refusing to unbundle network components, require rivals to get interface equipment)
  - Denying access to the network altogether (arguing that no spare capacity, tech choice that favours own operations)
  - Tying: Monopolist can make sale of regulated service dependent on purchase of unregulated service. This permits pricing above MC on unregulated service as tie prevents competitive entry
Regulatory sector reforms

- Privatisation - attract investment for network extension, efficiency, government revenues
- Licensing competitive operators - expand range of service, unserved markets, improve sector efficiency, drive down prices, stimulate innovation, government revenues.
- Transparent regulatory framework - increase credibility, gov revenues, market confidence, investment.
- Mandatory interconnection and unbundling of PSTN - remove barriers to competition
- Price cap regulation - incentive based, great efficiency, reduce regulatory lag.
- Universal access - replace less transparent and potentially anticompetitive subsidies.
- Removal of barriers to international trade. *(Intven 2000)*
Exercise

- Consider each of the sector reforms in the previous slide and consider if they are policy, regulatory or operational reforms and how they have been implemented or not in Namibia.
References

- Baldwin and Cave (1999)
- Evans (1995)
- Fukuyama (2005)
- Levy and Spiller (1996)
- Noll, R (1996)
- Pierre (2000)
- Majone (1997)
Why regulate? (2)

- Anti-competitive behaviour and predatory pricing
- Public Good and Moral Hazard
- Scarcity and rationing - regulating short supply
- Distributional justice and social policy
- Market allocative efficiency to maximise welfare, but not within groups/individuals in society
- Rationalisation and co-ordination
Objectives of regulation

- Promote universal access to basic telecommunications services
- Foster competitive markets to promote:
  - efficient supply of telecommunications services
  - good quality of service
  - advanced services, and
  - efficient prices
- Prevent abuses of market power (excessive pricing and anti-competitive behaviour by dominant firms)
- Create a favourable climate to promote investment to expand telecommunications networks
- Promote public confidence in telecommunications markets through transparent regulatory and licensing processes
- Protect consumer rights, including privacy rights
- Promote increased telecommunications connectivity for all users through efficient interconnection arrangements
- Optimize use of scarce resources, such as the radio spectrum, numbers and rights of way
Tools of Regulation

- Price Regulation (Wholesale and Retail)
  - Rate of Return
  - Price Caps
- Entry control (Licences)
- Various types of licences with various powers and obligations
- Vertical disintegration (e.g., AT&T)
- Legislative prohibition: Rules compelling operator to provide interconnection and governing the provision of that interconnection (Unbundling of network components)
- Transparency
  - Prescribing cost accounting procedures
  - Require operators to publish prices of products for usage baskets
Best practice regulation

- Legislative mandate
- Accountability
- Due process
- Expertise
- Efficiency
- Trade off of claims
Dynamic issues in Regulation

- Regulatory lag: A lag between rate reviews – incentives for cost reduction under rate of return regulation, more profit...
- Ratchet effect: The use of information on past profits in deciding future price caps lowers incentives in price cap regulation
- Operator might act contrary to regulators objective:
  - Lowering the quality of access to the network (delay upgrades that allow rival to offer new services, degrading rival quality)
  - Increasing their access price to the network (refusing to unbundle network components, require rivals to get interface equipment)
  - Denying access to the network altogether (arguing that no spare capacity, tech choice that favours own operations)
  - Tying: Monopolist can make sale of regulated service dependent on purchase of unregulated service. This permits pricing above MC on unregulated service as tie prevents competitive entry
Regulatory sector reforms

- Privatisation - attract investment for network extension, efficiency, government revenues
- Licensing competitive operators - expand range of service, unserved markets, improve sector efficiency, drive down prices, stimulate innovation, government revenues.
- Transparent regulatory framework - increase credibility, gov revenues, market confidence, investment.
- Mandatory interconnection and unbundling of PSTN - remove barriers to competition
- Price cap regulation - incentive based, great efficiency, reduce regulatory lag.
- Universal access - replace less transparent and potentially anticompetitive subsidies.
- Removal of barriers to international trade. (*Intven 2000*)
Exercise

- Consider each of the sector reforms in the previous slide and consider if they are policy, regulatory or operational reforms and how they have been implemented or not in Namibia.
References

- Baldwin and Cave (1999)
- Evans (1995)
- Fukuyama (2005)
- Levy and Spiller (1996)
- Noll, R (1996)
- Pierre (2000)
- Majone (1997)
Objectives of policy & regulation

- Promote universal access to basic telecommunication services
- Foster competitive markets to promote:
  - efficient supply of telecom services
  - good quality of service
  - advanced services, and
  - efficient prices
- Prevent abuse of market power (anti-competitive behaviour by dominant firms)
- Create favourable investment climate/extension of networks and services
- Promote public confidence in telecom markets through transparency, regulatory, licensing processes
- Protect consumer rights (next generation rights)
- Promote efficient and seamless communications between competitive infrastructures
- Optimise use of scarce resources - rights of way, spectrum, numbers.
Regulatory sector reforms

- Privatisation - attract investment for network extension, efficiency, government revenues
- Licensing competitive operators - expand range of service, unserved markets, improve sector efficiency, drive down prices, stimulate innovation, government revenues.
- Transparent regulatory framework - increase credibility, gov revenues, market confidence, investment.
- Mandatory interconnection and unbundling of PSTN - remove barriers to competition
- Price cap regulation - incentive based, great efficiency, reduce regulatory lag.
- Universal access - replace less transparent and potentially anticompetitive subsidies.
- Removal of barriers to international trade. (Intven 2000)
Interplay between competition and telecom regulation

- Regulation is ‘ex ante’ and competition policy is ‘ex post’ (except merger control)
- Regulation tends to define market structure with impact on effective and potential competition
- Regulation is aimed at ‘mimicking’ competitive outcomes in the absence of competition
- As competition is introduced less regulation of certain aspects is required
- Generally upstream and downstream,
- Excluding access, safety requirements and technical standards
- Focus shifts from preventing monopoly abuse in retail to interconnection and public service obligation
Changing market structure with competition
Administrative Justice

- Constitution - consultative policy formulation, bill of rights
- Legislative mandate
- Accountability
- Due process
- Expertise
- Efficiency
- Trade off of claims
Ministry of Communication develops overall policy for the telecommunications sector from which Department develops strategies.

It is required that the regulator and competition authorities are consulted and that public hearings are held before a policy is gazetted. Once it is a bill Parliament, through a multiparty parliamentary committee, will also hold public hearings before passing the law.
Parliament

Ministry

Stakeholders/Civil society/
Consumers, citizens, operators, service providers, academia, unions

Policy Formulation Process

inputs

initiates & formulates

Ministry

Regulator & Competition Commission

The Parliaments passes laws based on policies

The Minister can provide policy directives to the regulator between major policy reviews.
The policy determines the institutional arrangement for the sector - the degree of autonomy of the regulator, competition commission and USA - through the appointment process, funding, and delegation of powers.

The policy also determines the market structure through requiring the regulator to licence certain categories of operators/service providers and exempting others. Market conduct is in response to the market structure and determines the nature of the regulation.
The performance of the sector - competitiveness reflected in access, range choice of services, price and quality - is the outcomes of the policy and legal framework and creates the conditions either conducive to investment in the sector or not.
### Comparative investment in infrastructure

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>9,13</td>
<td>10,47</td>
<td>23,28</td>
<td>12,72</td>
<td>18,95</td>
<td>21,56</td>
<td>16,60</td>
<td>19,21</td>
</tr>
<tr>
<td>Korea, Rep. of</td>
<td>134,55</td>
<td>193,69</td>
<td>106,01</td>
<td>112,32</td>
<td>117,89</td>
<td>137,70</td>
<td>141,17</td>
<td>128,65</td>
</tr>
<tr>
<td>Senegal</td>
<td>6,53</td>
<td>10,41</td>
<td>8,61</td>
<td>13,28</td>
<td>15,86</td>
<td>17,37</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>South Africa</td>
<td>31,10</td>
<td>15,74</td>
<td>19,02</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tunisia</td>
<td>22,00</td>
<td>31,26</td>
<td>41,20</td>
<td>41,56</td>
<td>26,83</td>
<td>29,55</td>
<td>22,35</td>
<td>29,32</td>
</tr>
</tbody>
</table>

Total annual CAPEX in telecommunications/population (in USD, including fixed, mobile and Internet services. It should include all operators)


Gaps in South African data reflect its failure to submit data over several years to ITU for global indicator reports.
Telecom investment & economic growth

- Correlations between telecom penetration and growth - fixed, mobile, broadband.
- Causality?
- Network effects
- World Bank 2010: 10% increase in broadband penetration accelerates economic growth by 1.38% points.

<table>
<thead>
<tr>
<th>Country</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>6.04</td>
<td>7.81</td>
<td>8.86</td>
<td>9.75</td>
<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>6.84</td>
<td>8.01</td>
<td>8.86</td>
<td>9.75</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>2.37</td>
<td>4.10</td>
<td>4.62</td>
<td>4.61</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>3.30</td>
<td>3.19</td>
<td>3.86</td>
<td>4.68</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>2.28</td>
<td>2.40</td>
<td>2.60</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Korea</td>
<td>4.94</td>
<td>4.79</td>
<td>4.65</td>
<td>4.66</td>
<td>4.32</td>
</tr>
<tr>
<td>Kenya</td>
<td>4.84</td>
<td>4.79</td>
<td>4.65</td>
<td>4.66</td>
<td>4.32</td>
</tr>
<tr>
<td>Turkey</td>
<td>2.78</td>
<td>2.40</td>
<td>2.27</td>
<td>2.51</td>
<td>2.07</td>
</tr>
<tr>
<td>Tunisia</td>
<td>6.08</td>
<td>4.38</td>
<td>4.17</td>
<td>4.28</td>
<td>4.15</td>
</tr>
<tr>
<td>Korea Rep.</td>
<td>4.62</td>
<td>4.61</td>
<td>4.70</td>
<td>4.86</td>
<td>4.75</td>
</tr>
</tbody>
</table>

Source: World Bank, IC4D database 2010
http://databank.worldbank.org/ddp/home.do
State co-ordination of data gathering

- StatsSA
- ICASA
- DOC
- Public reports, journals
Data gathering

POLICY & REGULATORY REVIEW

Data-mining and economic modelling

ICT Satellite Account
ICT Sector
Performance Review
Supply Side Data

Indicators

Census, national household survey, ICT sector survey, Demand Side Data

National Accounts
Labour Force Survey

ICT Satellite Account
ICT Sector
Access and economic modelling

Croes, national household survey, ICT sector survey, Demand Side Data

Census, national household survey, ICT sector survey, Demand Side Data
Review examples

- RIA ICT Sector Performance Review
- Ofcom Communication Report
- WWW Internet Matters
EXERCISE

- 6% ICT contribution to GDP
- 0.4% ICT professionals employed in entire economy (labour force)
- 9% ICT sector contribution to tax base
- 18% ICT investment in total economy.