



# Overcoming policy and regulatory challenges to NREN development

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# Outline

- ■ Research ICT Africa!
- ■ Factors influencing the development of R&E Networks
- ■ How the factors (are supposed to) come together
- ■ In reality ...
- ■ Development in spite of, despite ...

# Research ICT Africa!

- ■ Network of researchers conducting ICT policy and regulatory research in 20 African countries across the continent in the absence of data and analysis required for evidence based policy
- ■ Policy research based on series of supply and demand side research undertaken by the network which is triangulated with a telecommunications regulatory environment perception survey
- ■ Series of policy papers that provide decision-makers with an assessment of policy performance, provide oversight and identify points of intervention

# Factors influencing the development of R&E Networks

- Physical infrastructure: specifically relating to connectivity
  - Communications infrastructure
  - Power infrastructure/Supply
- Pricing & demand: that influence both access to and use of infrastructure, and the services that are offered to R&E communities
- Participation & coordination: including development of, and engagement between research and education communities
- Advocacy: raising awareness of the importance of R&E networking to Africa's development
  - Amongst the various levels and types of policy & decision makers
  - Reflected in relevant documents (National ICT Policies etc.)

# How the factors come together

The diagram illustrates the relationships between various factors in a networked system, showing positive and negative feedback loops.

**Key Factors and Interactions:**

- Advocacy** (blue box) has a positive influence (+) on **Participation** (blue box) and a positive influence (+) on **Innovation – product, service, equipment**.
- Participation** (blue box) has a positive influence (+) on **Use** and a positive influence (+) on **Access**.
- Innovation – product, service, equipment** has a positive influence (+) on **Competition** and a positive influence (+) on **Price**.
- Competition** (dashed box) has a negative influence (-) on **Price** and a positive influence (+) on **Demand**.
- Price** (blue box) has a negative influence (-) on **Demand** and a positive influence (+) on **Profit**.
- Demand** (blue box) has a positive influence (+) on **Investment in networks** and a positive influence (+) on **Physical infrastructure**.
- Physical infrastructure** (blue box) has a positive influence (+) on **Access** and a positive influence (+) on **Network expansion**.
- Access** has a positive influence (+) on **Use**.
- Use** has a positive influence (+) on **Profit** and a positive influence (+) on **Participation**.
- Profit** has a positive influence (+) on **Advocacy** and a positive influence (+) on **Participation**.
- Investment in networks** has a positive influence (+) on **Physical infrastructure**.
- Cost** (dashed box) has a negative influence (-) on **Investment in networks** and a positive influence (+) on **Competition**.

**Feedback Loops (Green Circles with +):**

- Loop 1:** Advocacy → Participation → Use → Profit → Advocacy.
- Loop 2:** Innovation → Competition → Price → Demand → Investment in networks → Physical infrastructure → Access → Use → Profit → Innovation.
- Loop 3:** Demand → Investment in networks → Physical infrastructure → Access → Use → Profit → Demand.

**Other Factors and Interactions:**

- Isolation** (dashed box) has a negative influence (-) on **Participation**.
- "Brain Gain"** (dashed box) has a positive influence (+) on **Participation**.
- "Massification"** (dashed box) has a positive influence (+) on **Participation**.
- Collaboration / Integration** (dashed box) has a positive influence (+) on **Participation**.
- Network expansion** has a positive influence (+) on **Access**.



# In reality ...

## Policy Paper: *ICT Access and Usage in Africa 2008*

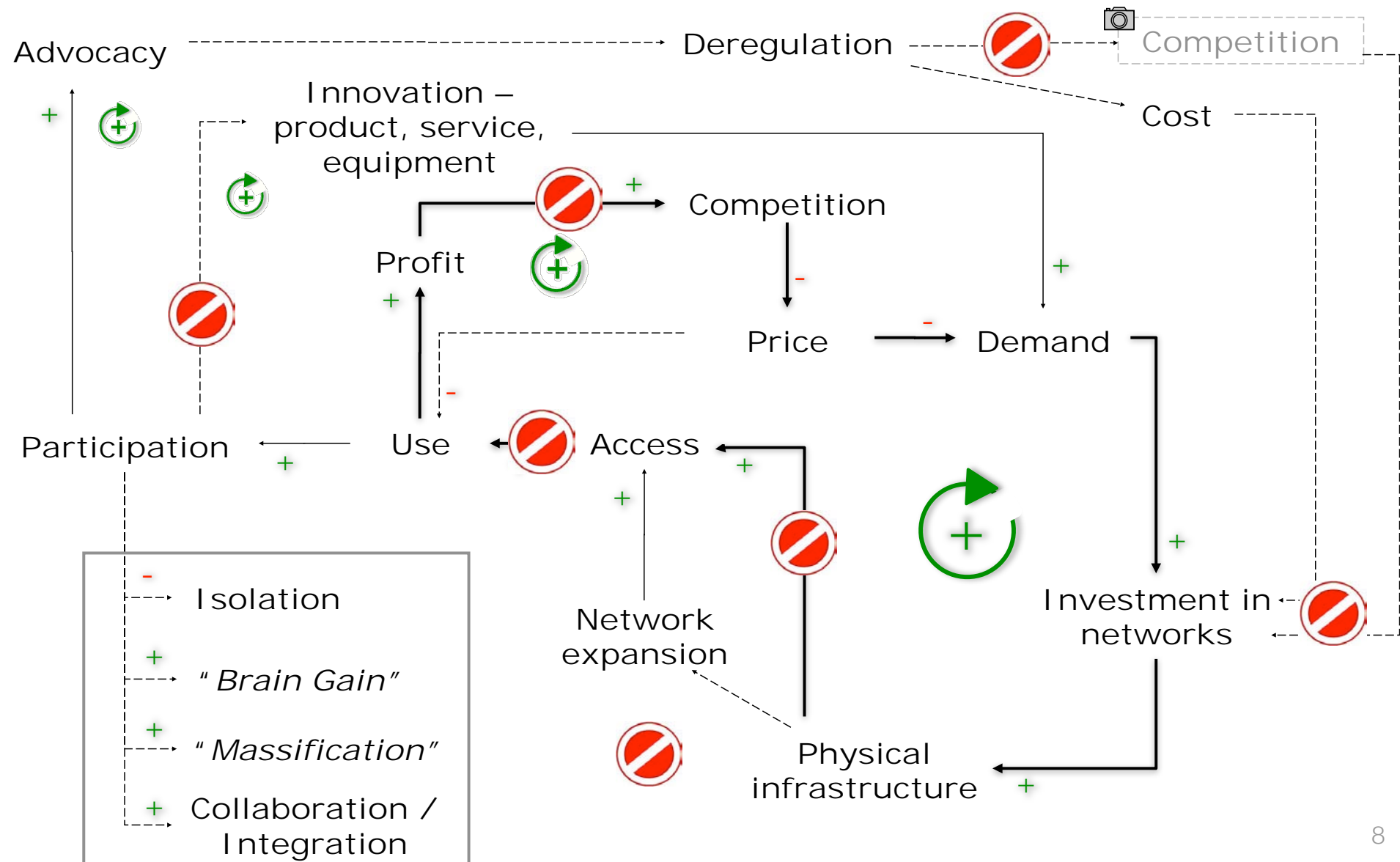
- ■ Reform of telecoms' markets has been uneven
  - ■ *inequality* and *exclusion* remain key characteristics of most markets
  - ■ introduction of competition has been limited
  - ■ some markets have not been fundamentally restructured
- ■ Highly imperfect markets
  - ■ dominant players extract monopoly rents
  - ■ duopolies and oligopolies engage in price matching rather than competition

# In reality ...

## Policy Paper: *ICT Access and Usage in Africa 2008*

- ■ “...failure to establish working markets”
  - ■ behaviour of operators sometimes unchecked by regulators
  - ■ some national/sectoral policies contribute to high prices (e.g. Retrogressive taxes on equipment and services)
- ■ High regulatory risk/uncertainty
  - ■ lack of capacity in regulatory agencies
  - ■ existence of institutional arrangements that constrain autonomy of regulatory agencies
  - ■ administrative processes not always transparent and participatory

# In reality ...





# In spite of, and despite ...

Factor	Strategy
Physical infrastructure	<i>Strategies that acknowledge that transmission routes are in the hands of a relatively small number of operators</i>
Demand	Aggregate current demand (bandwidth) and create new demand: “not just about bandwidth”!
Pricing	1. Use position as a significant market/customer segment in negotiation with operators. 2. Adopt funding models that are conducive/
Participation	1. Build/reinforce trust relationships, and a culture of collaboration. 2. Develop broader/wider range of services
Advocacy	Use optimism of submarine cable project to promote NREN interest and influence discussions at national and regional levels



Thank You

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