Costing and Pricing Methodologies in the Digital Economy

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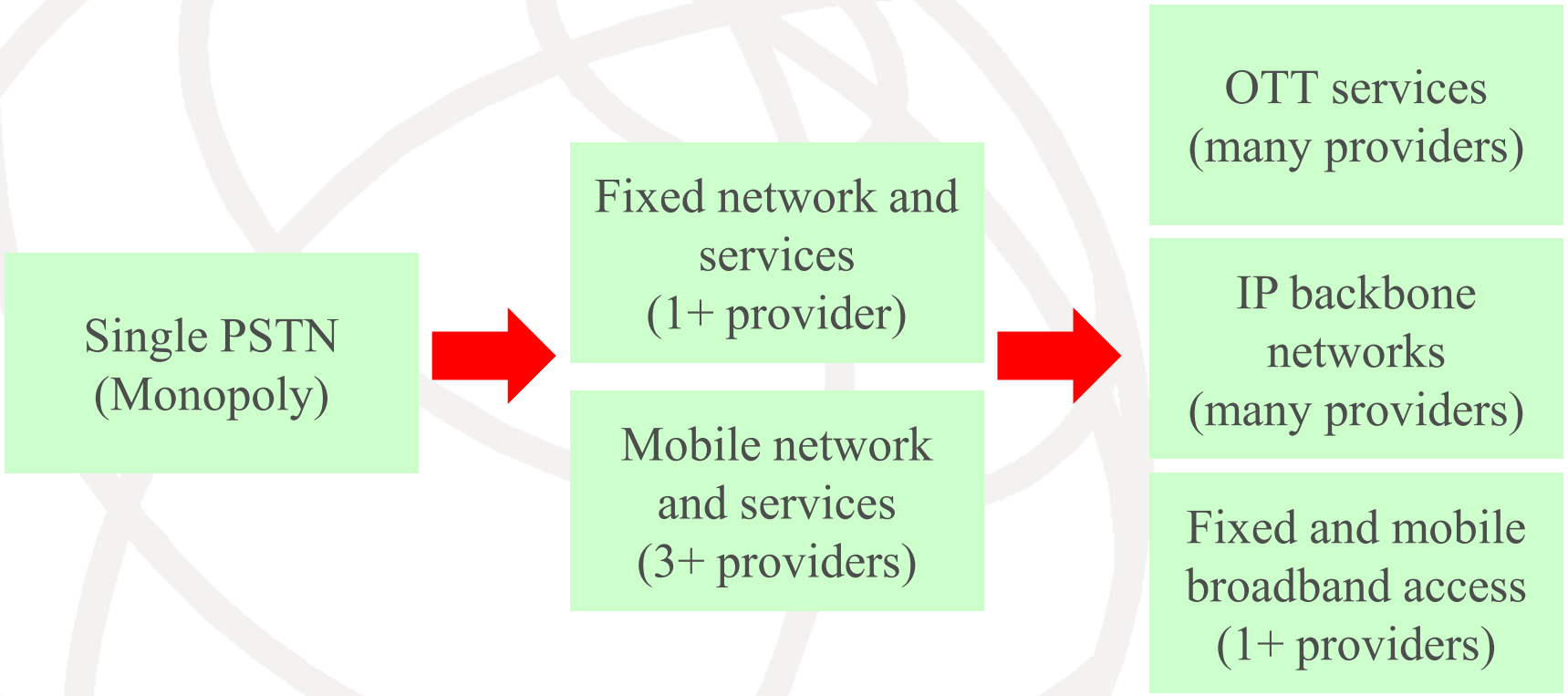
Overview

- Traditional approaches to cost and price regulation
  - Monopoly era
  - Competitive era
- Changing business models and their impact on price regulation
  - The IP network revolution
  - OTT services and multi-play
- Current and future requirements
  - National networks
  - International Internet Connectivity

The digital revolution



(Timelines are only indicative and vary by country)

Price regulation of monopoly

- Public utility service
- State control and ownership
- Pricing based on political and social objectives
- Revenue creation for the Government
  - Cost plus required revenue share
  - Static view of costs without assessing efficiency

Monopoly-based regulation still exists in many countries but it generally holds back investment, innovation and efficiency, results in higher end user prices and holds back the digital economy.

Price regulation of fixed/mobile competition

- Separate platforms with different cost and price structures
- Retail/wholesale and network/service differentiation begins
- Emergence of competition and relaxation of price controls
- Regulation based on Significant Market Power

The objectives of price regulation

- Avoid price controls if you can – don't regulate if the market is competitive
- Concentrate on wholesale price controls as far as possible – prices in retail markets can then be left to competitive forces
- Remember that not all prices need detailed costing (e.g. retail-minus pricing or benchmarking may be appropriate)
- Allow operators to cover their costs plus a reasonable return on capital employed (profit) – makes for sustainable prices
- Goal: find a "simulated" market price – try to mimic the prices that a competitive market would produce

The role of cost-modeling

- New entrants require call termination services (fixed and mobile) in order to compete:
  - Any-to-any connectivity
  - Network effects
- Service competition requires access to bottleneck facilities (e.g. local loops)
- Cost models to ensure prices for these services are fair and transparent, based on efficient and forward-looking prices
  - Long run incremental costs

Three cost model types

Top-down models

Good at:

- Accurately capturing total historical costs

Poor at:

- Transparency
- Dis-aggregation
- Efficiency

Bottom-up models

Good at:

- Transparency
- Efficiency
- Future projections

Poor at:

- Ensuring cost recovery
- Estimating opex

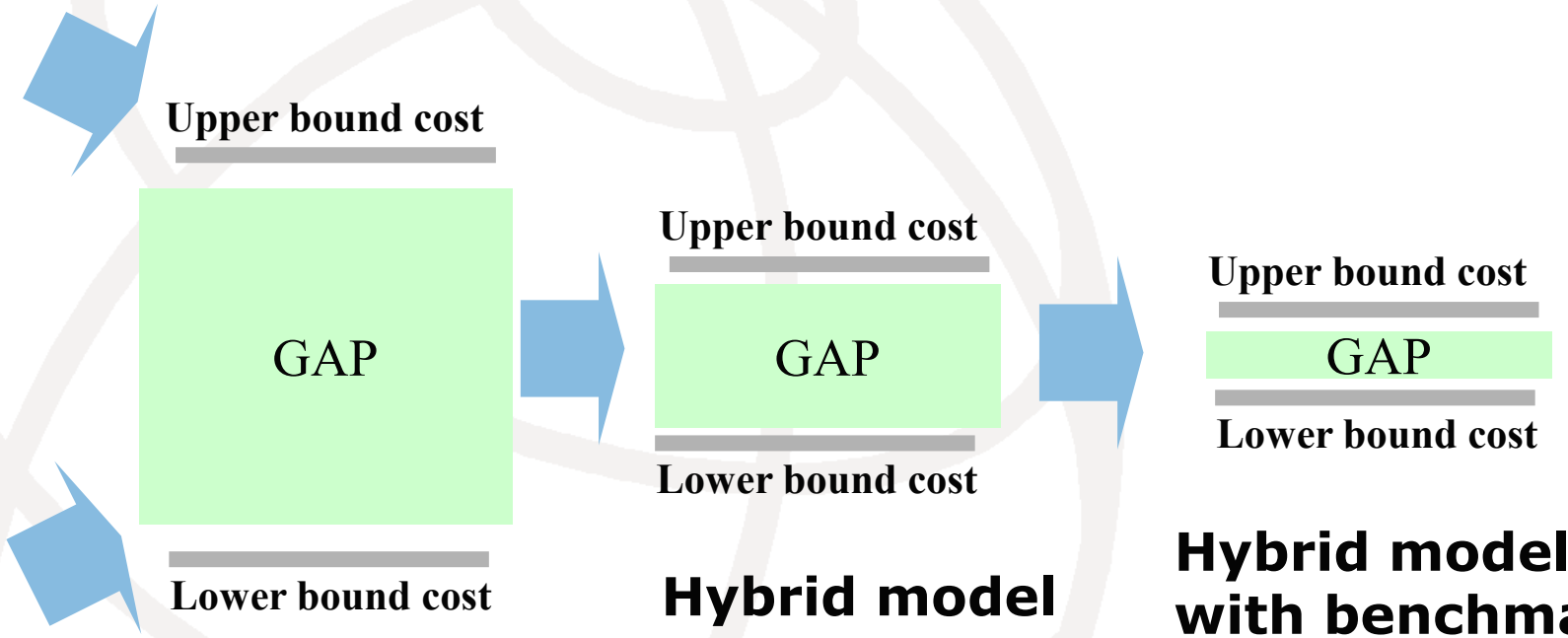
Hybrid models

Combine good points of each approach:

- Accurately capturing total costs (with efficiency adjustments)
- Transparency
- Future projections

Using models in price regulation

Top down



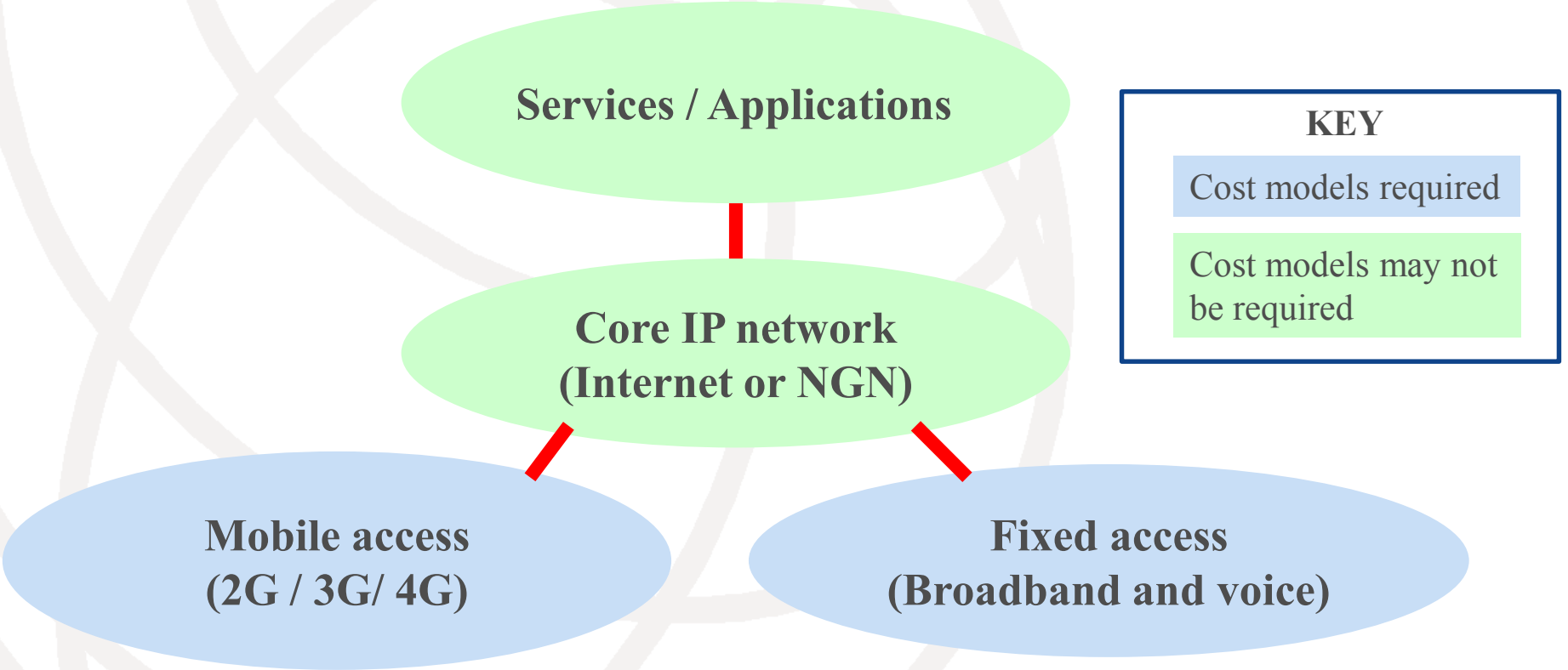
Bottom up

Hybrid model

Hybrid model with benchmarks

Transition to IP networks

- IP networks are radically changing the service supply chain, affecting costs and prices



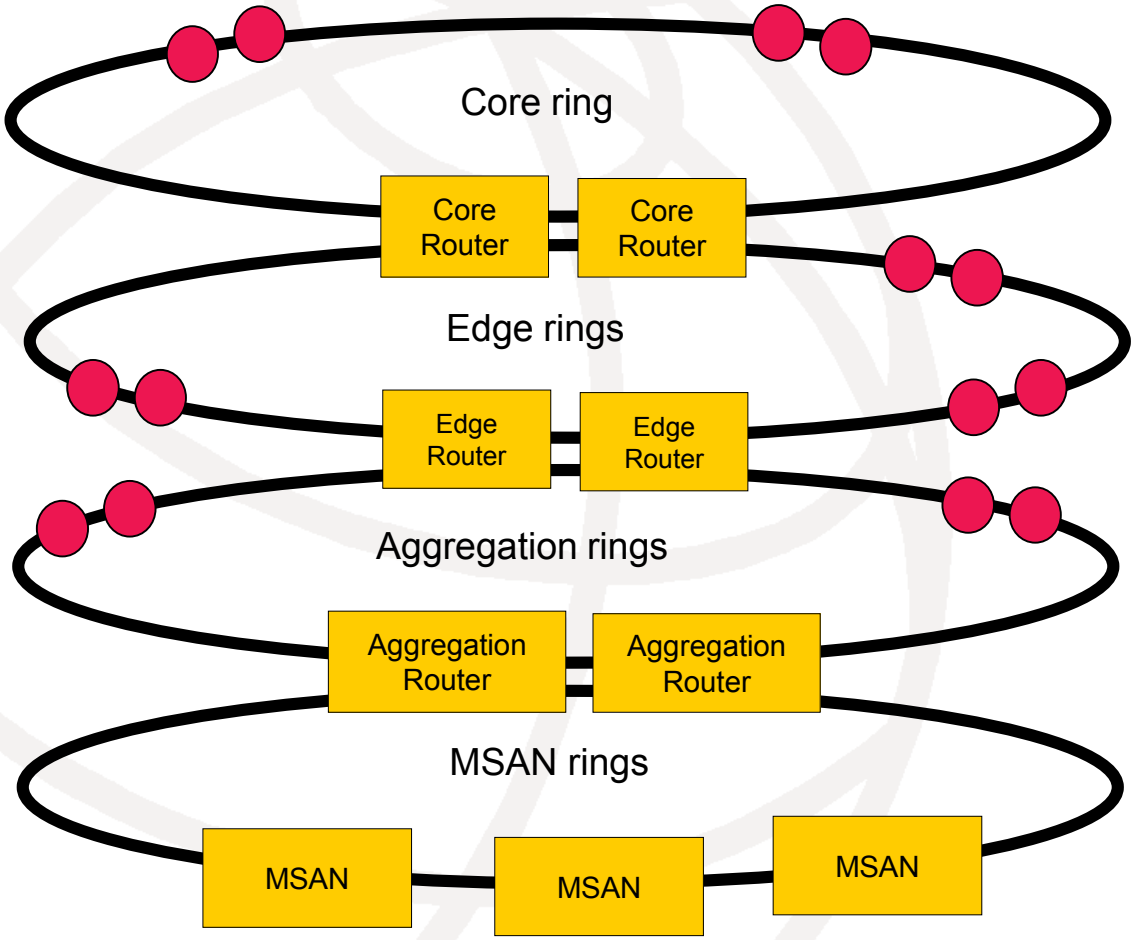
Structure of an IP network

Ring rather than star topology

Routers rather than switches

Fewer nodes

Costs driven by capacity rather than minutes of traffic



Shared transmission paths

End of SDH technology; Ethernet and DWDM

Access nodes further from customer

Cost modeling of IP networks

- IP network models are substantially different from PSTN models.
- The tendency is to have high fixed and low variable costs, thus making usage-based charges somewhat theoretical.
- Variable costs are based on Mbps and not voice minutes
- It is hard to reconcile assumptions within the model between theoretical efficiency and actual deployment practice (e.g. tendency to build in lots of spare capacity)

Price regulation of IP networks

- Key issues:
  - Voice is dying: so cost-based voice termination is of marginal significance
  - Broadband access over fixed and mobile networks is critical to service providers
  - Bundling of retail services: e.g. quad-play (fixed, mobile, internet and TV)
  - Evolution of markets and market power; potentially less SMP and less need for ex-ante regulation
  - Cost-based regulation may still be important but more likely in ex-post dispute resolution.

A shift in the regulatory balance

The need for regulated cost-based interconnection is reducing

The need for regulated cost-based access is increasing

Potential outcomes

- Circuit-switched interconnection (with charges based on cost models) remains the default position until IP traffic comprises at least 50% of traffic on both interconnected networks.
- Deviation from this position may be reached via commercial agreements, with the current regulated interconnection acting as a price reference point.
- Rather than establish IP equivalents to circuit-switched regulation, there will be an increasing reliance on ex-post remedies to correct for anti-competitive behaviour.

Future regulatory requirement for cost models

- Mobile network cost model
  - With 2G, 3G and 4G components
  - Cost increments for coverage and capacity
  - Capacity to be based on Mbps.
  - Used to set voice termination rates*.
- Fixed access cost model
  - Different technologies (e.g. copper and fibre; buried and overhead cable)
  - Different local geographies (e.g. urban and rural; rocky or sandy terrain)
  - Costs for different access products (e.g. full loop, shared loop, sub-loop unbundling).

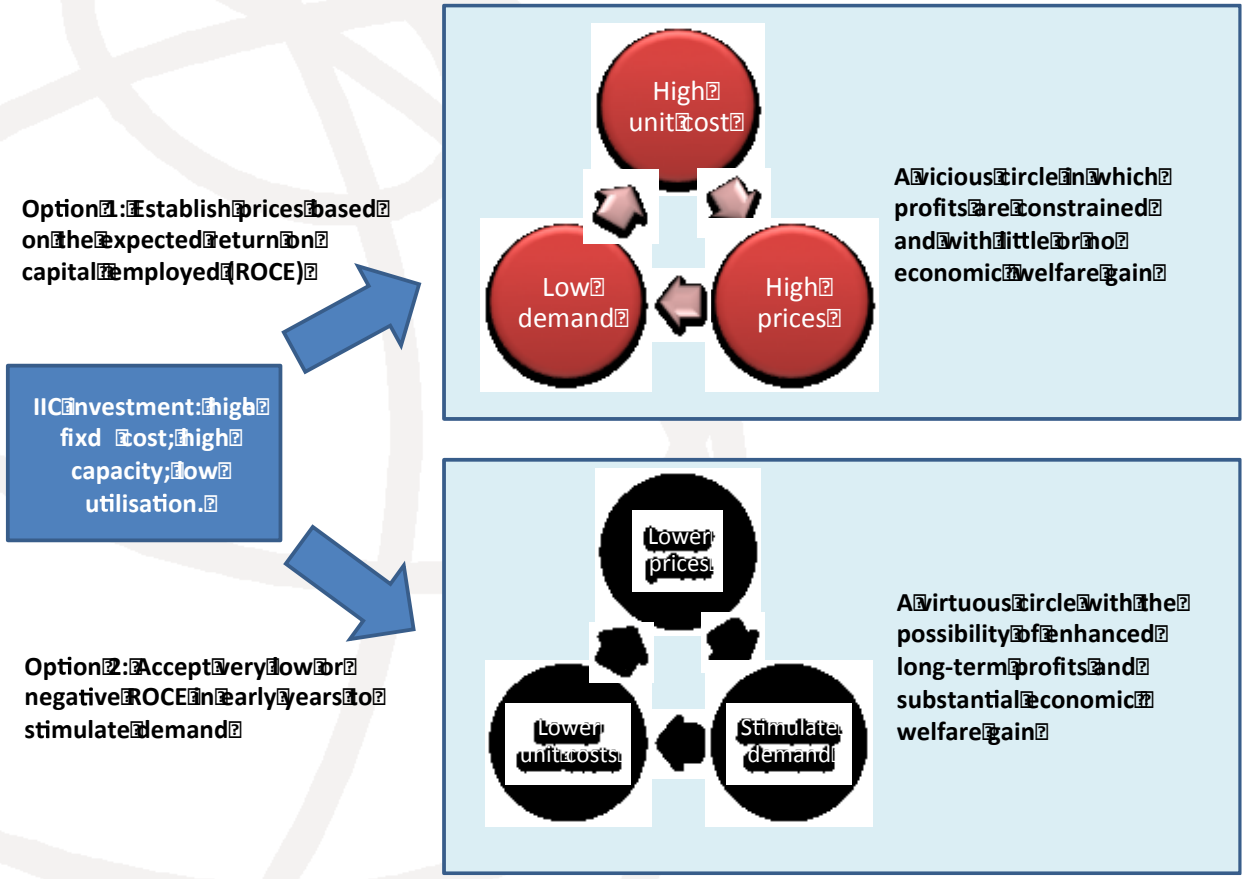
(* A separate fixed core network model may be needed in national markets that have significant fixed line infrastructure)

Strategic recommendations – national IP networks

- Future regulation of the digital economy will primarily be on an ex-post basis.
- Allow the market to establish IP interconnection arrangements within broad principle of transparency and non-discrimination.
- Do not extend circuit-switched regulation to IP networks unless justified and proportionate.
- Retain cost-based circuit-switched interconnection charges as a reference point during transition to IP.
- Retain ex-ante cost-based regulation for broadband infrastructure access.
- Mobile and fixed access cost models will continue to be required for effective regulation.

International internet connectivity

- Why are internet prices in Africa so high?
- Would cost models help to regulate prices down?
- A Catch 22 situation.



Strategic recommendations – international Internet connectivity

- Optimising the use of international bandwidth:
  - Regional Internet Exchanges; Local content
- Reducing the cost of international bandwidth
  - Removing investment barriers; regulating submarine cable bottleneck
- Facilitating the construction of basic broadband infrastructure.
  - National broadband backbone with open access
- Improving the legislative and regulatory framework
  - Regional harmonisation
- Developing and implementing a plan for mass Internet access.

Source: ITU Study on international Internet connectivity in sub-Saharan Africa, 2013: at http://www.itu.int/dms_pub/itu-d/opb/pref/D-PREF-EF.IIC.AFR-2013-PDF-E.pdf

Thank You

If you have any questions please contact me:
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