

The status quo and emerging challenges for ICTs in PNG

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Agenda

- introduction
- ICT sector in PNG
- trends and experiences
- current challenges
- emerging possibilities
- policy and regulatory issues
- policy recommendations
- conclusions

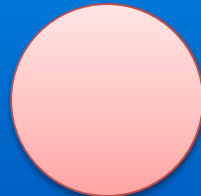
Introduction

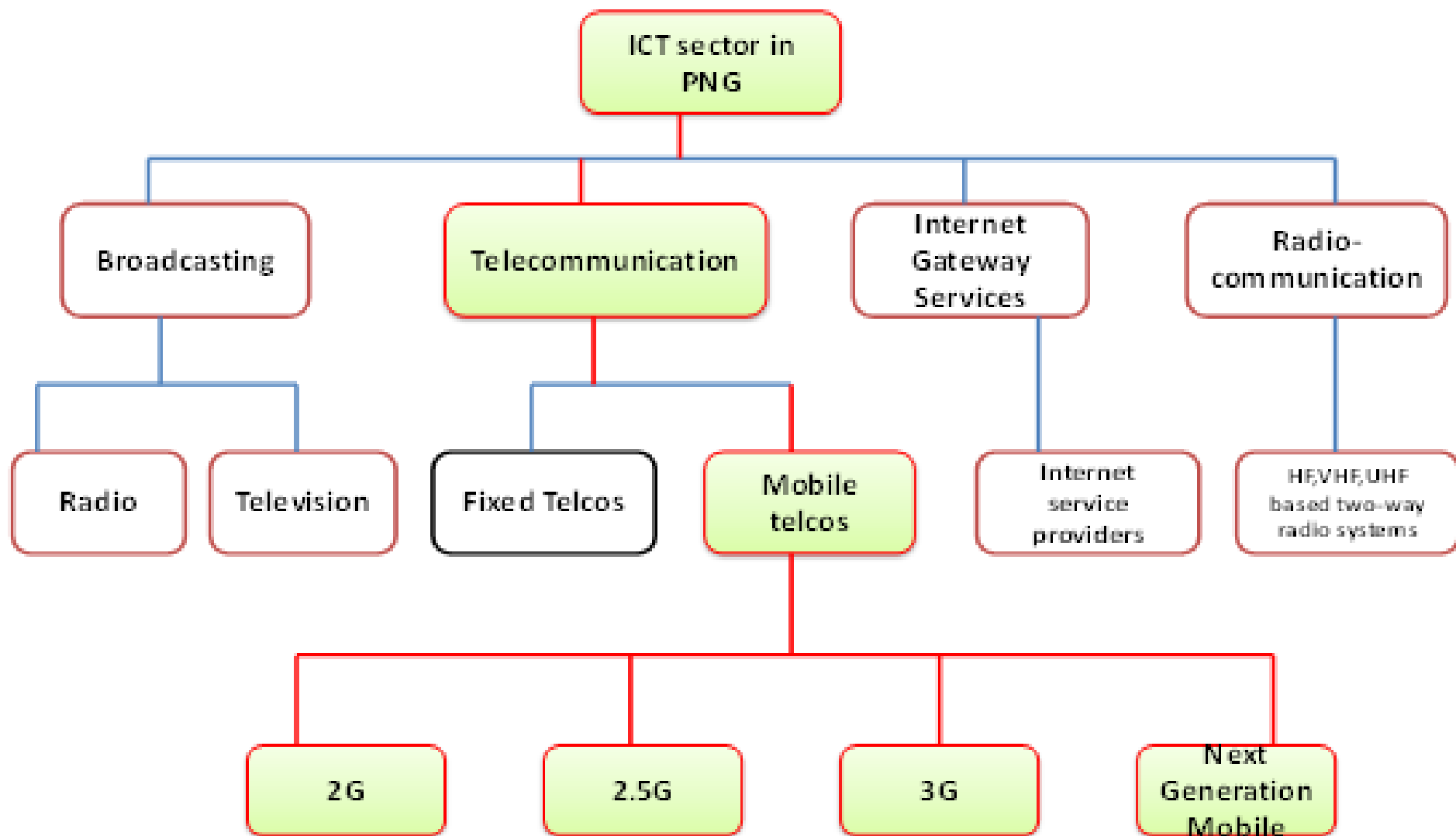
- ICTs landscape started changing mid 2007 when an NEC 257/2005 authorized competition amidst legislative restrictions.
- The entry of Digicel enabled accessibility and affordability to citizens across PNG in comparison to the old Telikom monopoly.
- SIM card prices decreased from \$80 to lower than \$20 and call rates dropped by 70 per cent (Stanley 2008).

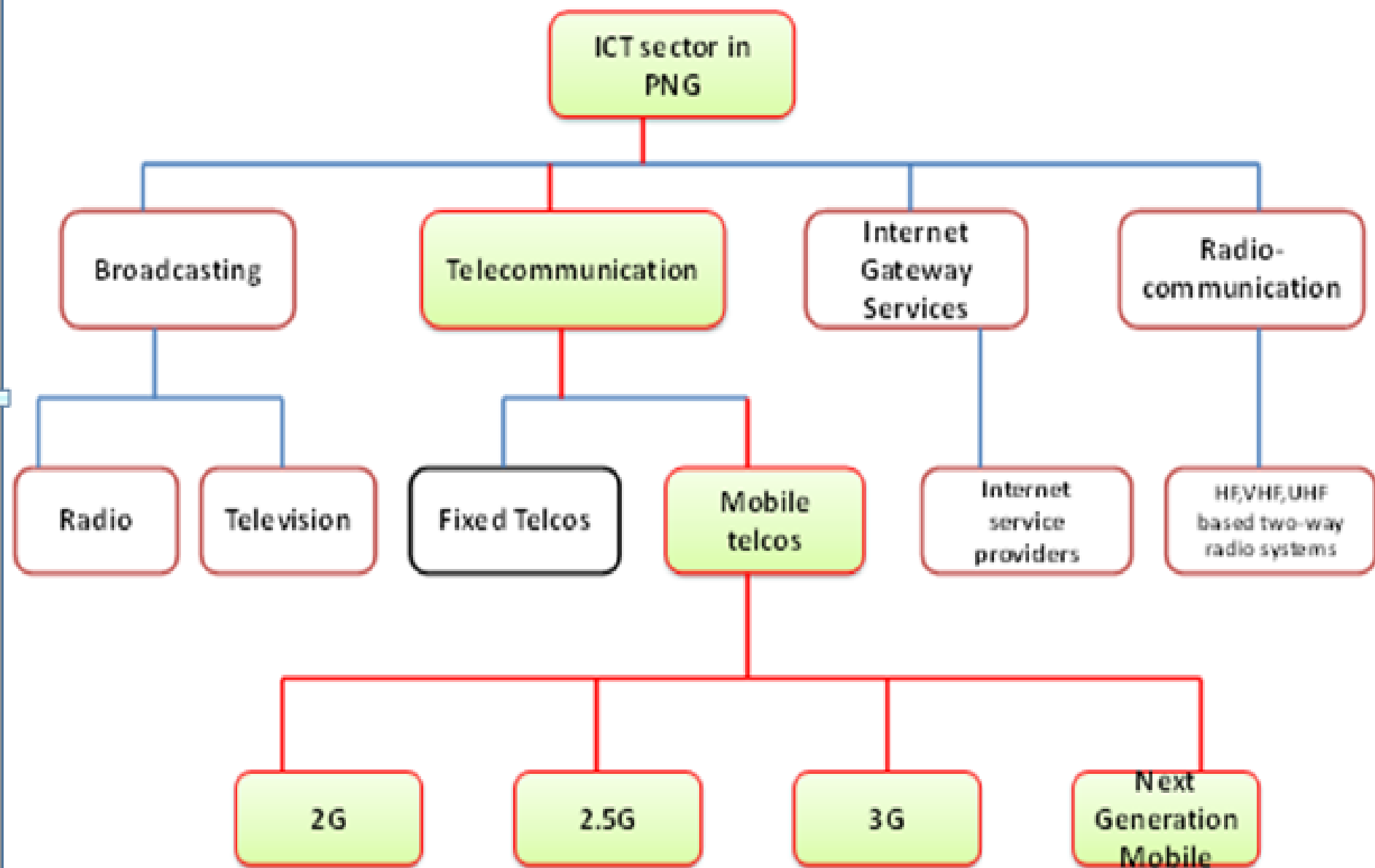


Introduction

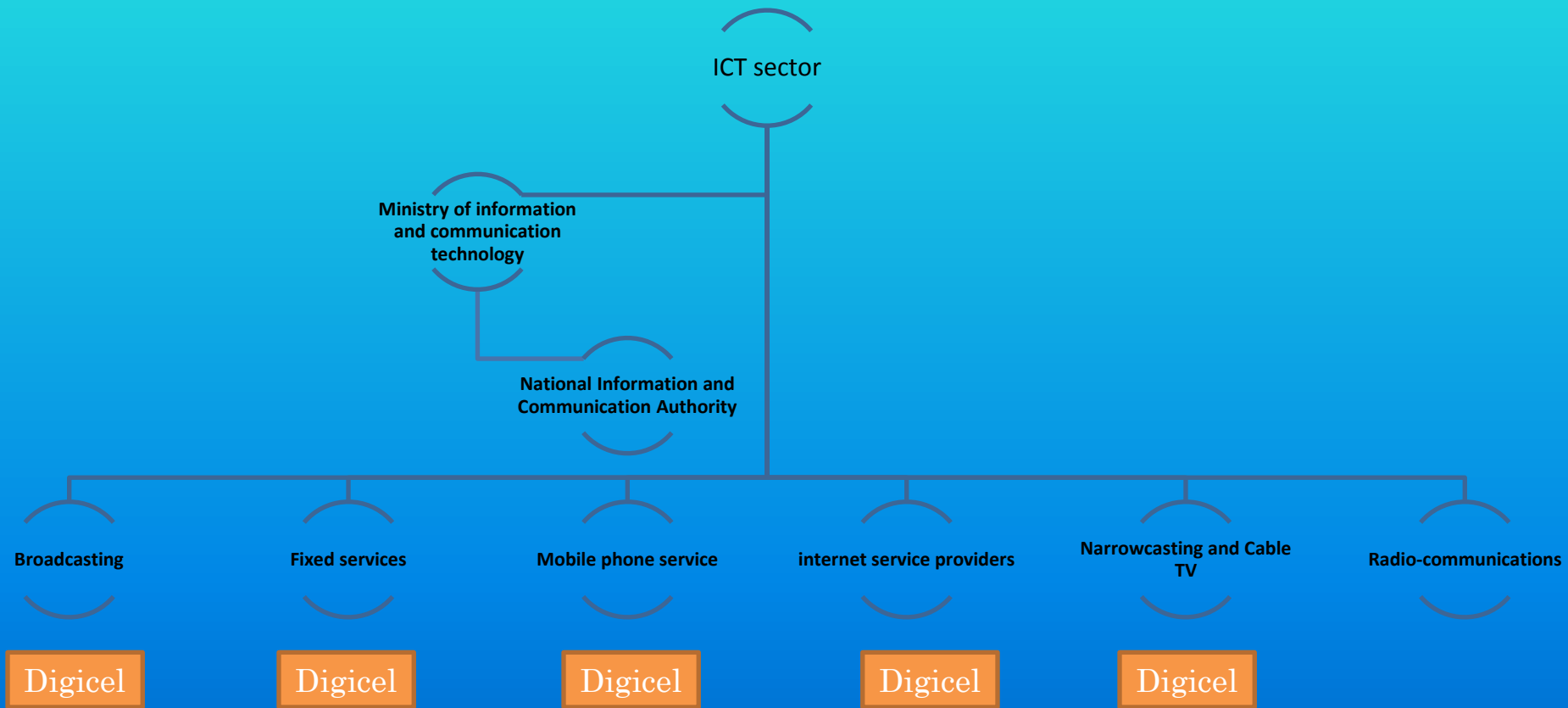
- Currently Digicel has 1100 towers across PNG as opposed to 200 towers for B-mobile.
- Digicel commands more than 80% of the total market.
- Digicel has since made inroads into other portfolios within the ICT sector.
- A number of challenges have emerged necessitating regulatory diligence.







ICT industry structure - status quo



Expansion of Digicel

- Telikom PNG: Former vertically integrated telecommunication operator (Fixed voice and data services, also owns B-mobile).
- Digicel has acquired NEC, fixed PBX supplier. Digicel is also a fixed service provider.
- 3 mobile phone operators:- B-mobile, Citifone, Digicel, AWAL (A-tel is yet to operate).
- Six internet service providers (ISPs), Digicel bought off DATANets (an ISP) and has partnership arrangement with Daltron (another ISP).
- Broadcasting (3 local TV stations, DigiTV is the 4th).
- Narrowcasting and Cable TV (Digicel has acquired Hitron and Channel 8, a cable television operator).
- Future trend - multimedia content transported over a single owner network.

Chain of towers linked via an array of wireless microwave systems...

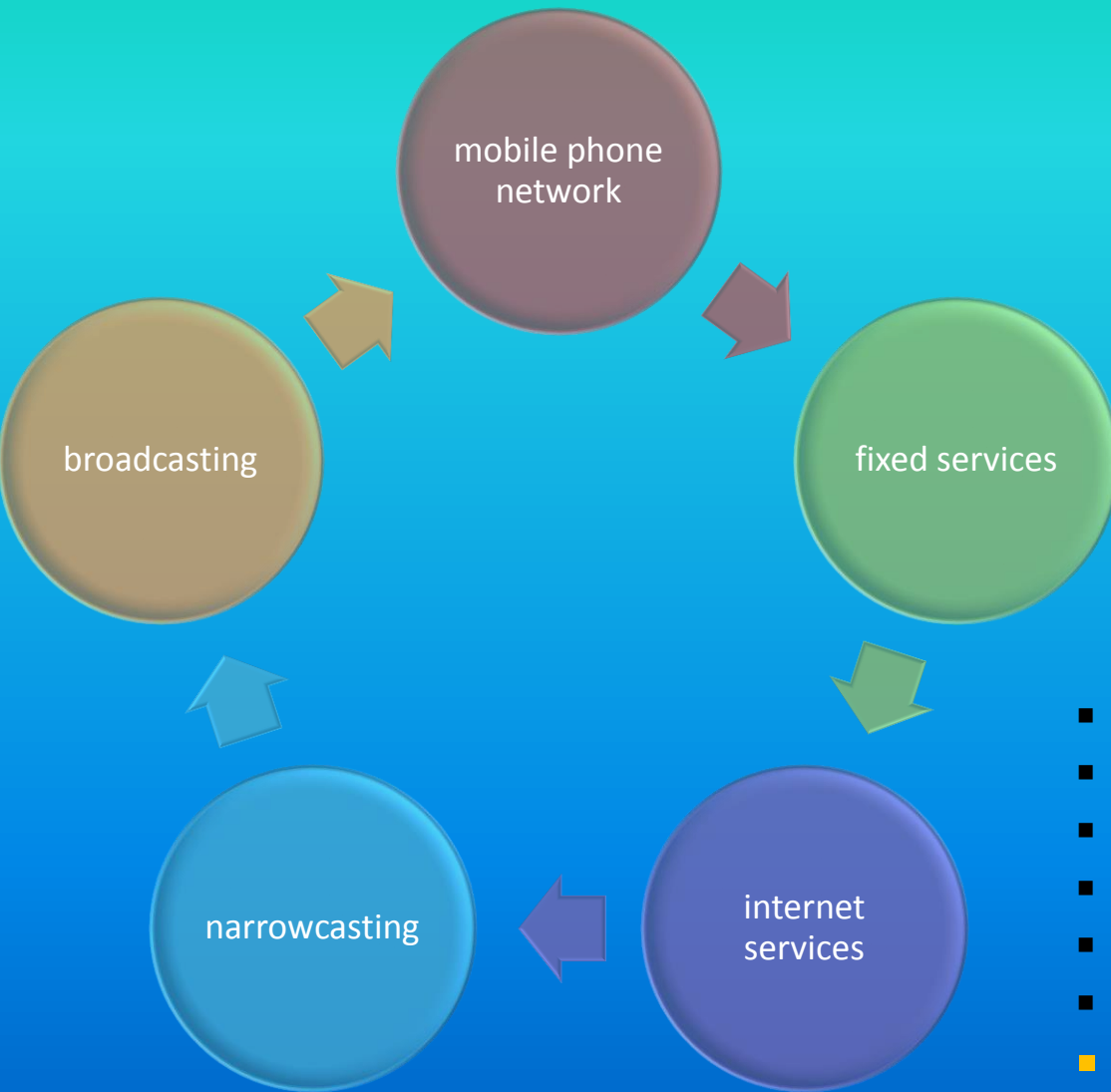


Extensive network

- Chain of towers across mountainous terrain, swamps, plains and oceans to provide domestic connectivity.
- There are satellite backup routes in certain domestic routes, in particular between mainland PNG and the islands.
- International connectivity is supported via satellite and undersea fiber-optic submarine cable.

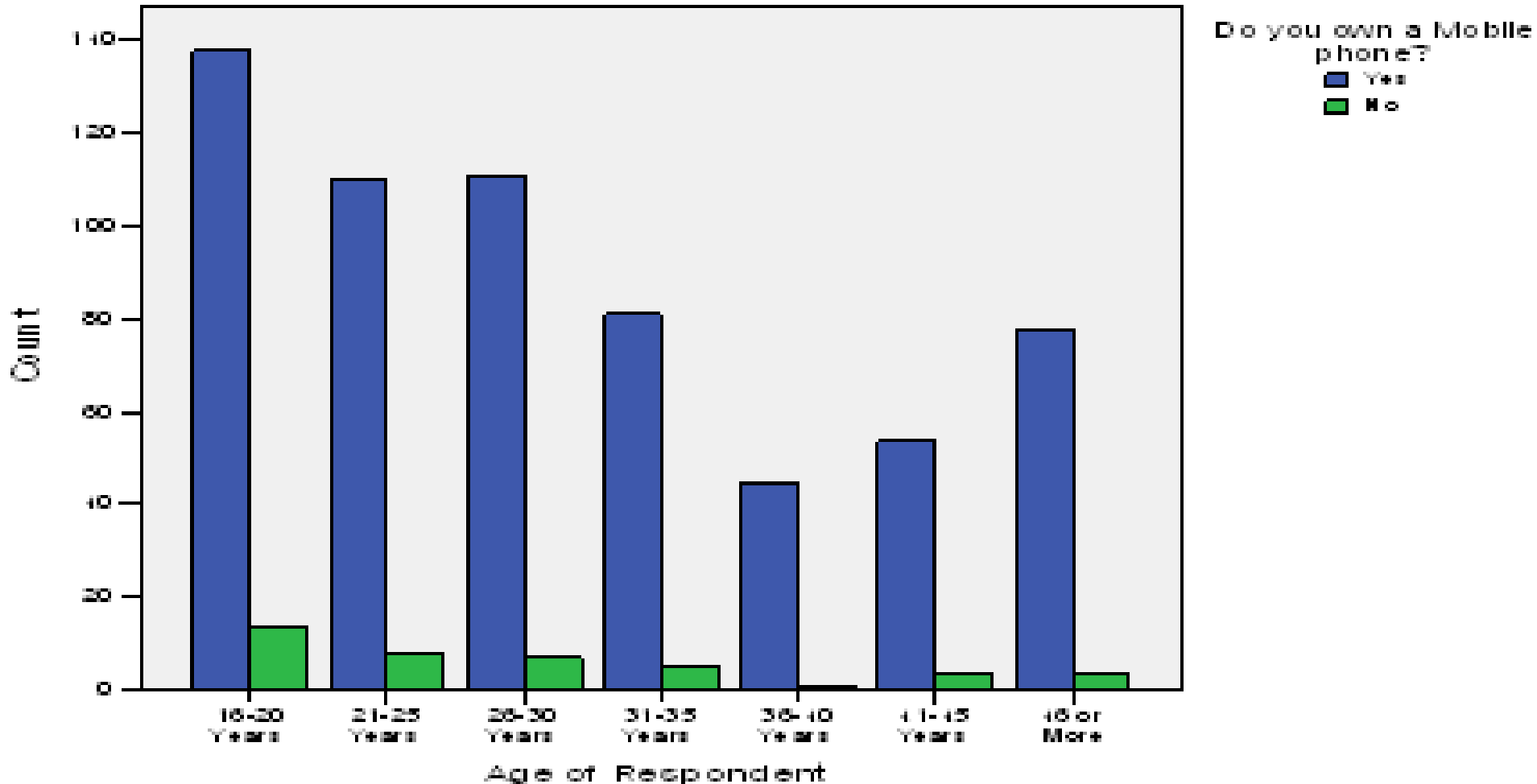


Single owner 'network of networks'



- Single owner 'network of networks'
- Monopolistic behavior
- Cost shifting to decimate competition
- Predatory termination rates
- Deny access to infrastructure
- Lack of choice in price and value
- **Requires competent regulations**

Mobile phones are pervasive: a recent survey (N=727) 90% ownership



Mobile phones – enablers of business



Quantum and monetary value of horticulture produce supplied to urban markets supported via mobile phones.

Volume and monetary value for produce sold to distant markets within PNG		
Crop	Fresh produce sold to markets (Kg)	Monetary value (PNGK)
Cabbage (English)	253,720	5,418,840
Sweet potato	239,400	229,870
Potato	181,790	59,790
Tomato	22,920	11,430
Bulb Onion	8,640	12,480
Broccoli	18,400	13,520
Carrot	114,320	81,900
Pineapple	2440	35,880
Total	841,630 Kg	PNGK 5,863,710

Source: Worinu, 2013

Mobile phones – direct income earners



Sales of call-credits, mobile handsets and accessories are direct income earners.

Proliferation of SMS services

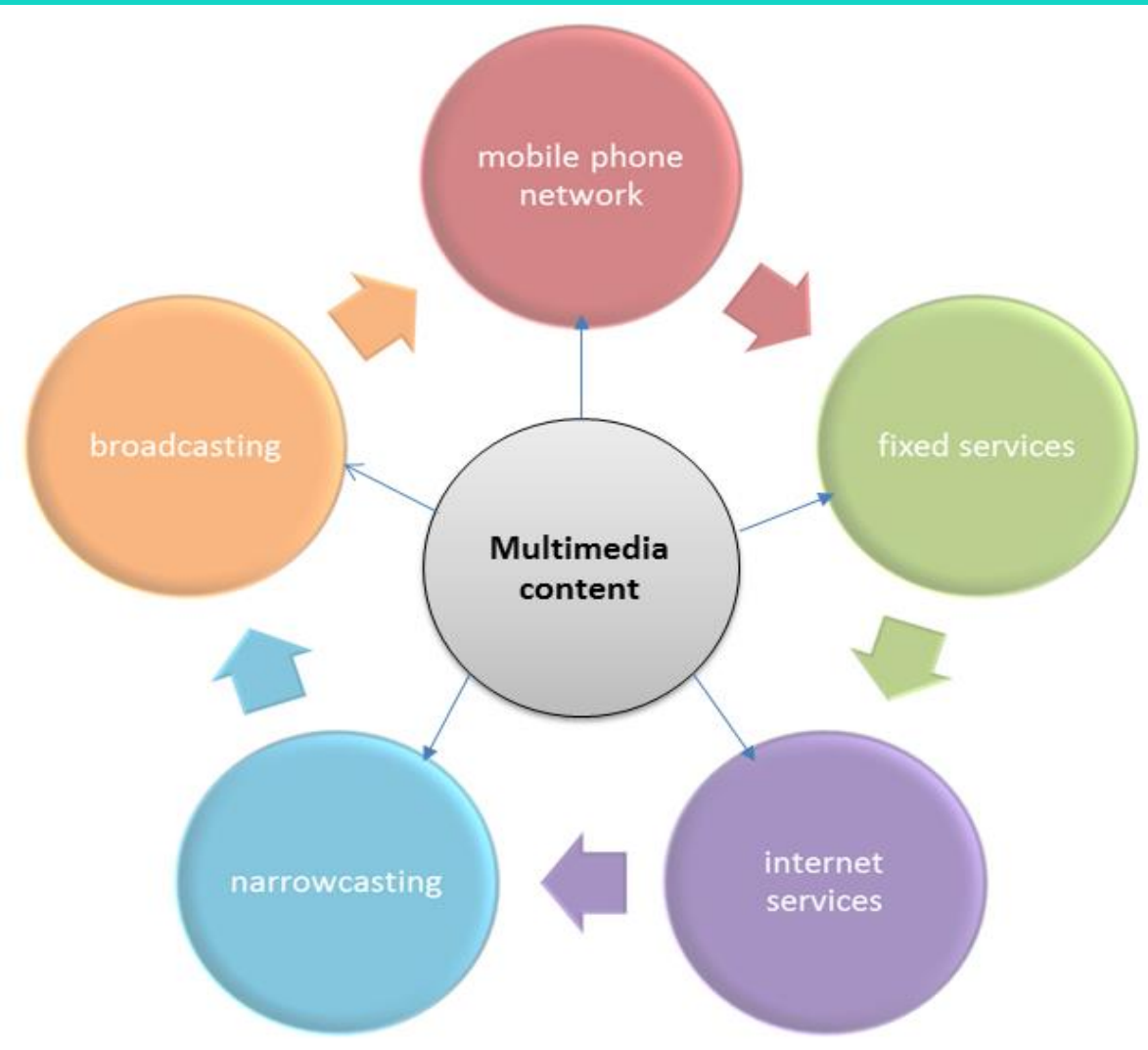
- **M-banking offered by all banks via mobile phones**
 - Enables transfer of funds between accounts.
 - Checking balances.
 - Exchanging credits for later sale.
 - More than 25,000 transactions per day on Digicel (Ramamurthy, 2013).
- **Purchasing of electricity credits via mobile phones**
 - More than 7,000 transactions per day for citizens to top up electricity using Digicel to access the PNG power system (Ramamurthy, 2013).
 - These attract higher tariffs than normal SMS.

Broadband internet access via mobile phones



Port Moresby, Lae, Mt Hagen,
Kokopo, Alotau, Madang and expanding.

Multimedia content via an integrated monopoly network



Content issues.
What is appropriate content?

Education and health content?
What is the price/tariff to support
development initiatives.

emerging challenges



- Lack of independence of the regulator
 - Undue political interference can cause uncertainty.
 - Regulatory duty not independent and for citizens' interest.
- Interconnection rates
 - Biased termination rates.
 - Dropped calls and lower quality of calls.
 - e.g PBX installer directed to block calls emanating from certain carriers.
- Policy and regulatory vacuum on infrastructure sharing
 - Dominant operators deny requests for access to towers by other operators.
 - Not economically efficient as it leads to infrastructure duplication.
 - When dominant player denies access, this is deemed an anti-competitive behavior.
- Lack of mobile number portability
 - Numbers are scarce resources: increases in allocations lead to increases in the number of digits.
 - The current numbering plan by the regulator does not support the capability to provide number portability..
 - Number portability enables users to maintain the same number even when changing phone companies.

Policy recommendations for PNG

- Interconnection issues must be acted upon.
- Numbering plan needs to be revised to ensure the capability and technological compliance for number portability.
- Infrastructure sharing between operators should be mandated.
- License terms and conditions should be enforced to encourage B-mobile to increase coverage.



Conclusions

- There is more room for improvement in ICT regulations in PNG. Regulator must be independent and competent.
- Interconnection arrangements, infrastructure sharing and number portability issues are critical for effective competition.
- Continuously monitoring and benchmarking Quality of Service is paramount.
- Effective competition may sustain choice in value and price for citizens.
- To complement lessons from overseas jurisdictions, regulator upskilling and in-house research initiatives for PNG specific regulations are important.



Thank you very
much!

