

STATUS OF SPECTRUM MANAGEMENT

PAPUA NEW GUINEA

**ITU WORKSHOP on ECONOMIC ASPECTS of
SPECTRUM MANGEMENT - TEHRAN, IRAN**

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1. BACKGROUND

- PNG



Country: Papua New Guinea (PNG)
Government: Parliamentary Democracy
Capital: Port Moresby
Land Area: 463 840 sq.km

- Population (2011): about 7.3 Mil**
- Mobile penetration: over 50%**
- PSTN penetration: 1.2%**
- Broadband penetration: <5%**
- 3 MNOs [GSM (2), UMTS (3), LTE (2)]**
- 1 fixed operator**

2. Mobile and Fixed Telephone Subscriptions

Source: ITU data 2000-2015

	Mobile-cellular telephone subscriptions										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Papua New Guinea	75,000	100,000	300,000	874,000	1,417,546	1,909,078	2,400,000	2,709,000	3,000,000	3,358,900	3,560,000

	Fixed-broadband subscriptions										
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Papua New Guinea				2,987	4,453	6,100	7,500	9,200	11,300	13,200	15,000

3. Major Operators & Spectrum Users



TELIKOM PNG : (FIXED and MOBILE)

- FIXED - ADSL, Fiber, WiMAX, Satellite
- MOBILE –UMTS (3G), LTE (4G)



BEMOBILE : (MOBILE)

- MOBILE - GSM EDGE (2.5G) UMTS+HSDPA (3G)



DIGICEL : (MOBILE & FIXED WIRELESS)

- FIXED - Satellite
- MOBILE - GSM +EDGE (2.5 G) UMTS+HSDPA (3G)
LTE (4G)

4. Operator Statistics

Mobile Market Share

	2014	Share	2015	Share	2016	Share	
Digicel	3,247,484	96.7%	3,487,544	95.3%	3,727,544	94.2%	Source: Calculated
Bmobile	70,926	2.1%	130,866	3.6%	190,866	4.8%	Source: Bmobile
Telkom/Citifon	40,490	1.2%	40,490	1.1%	40,490	1.0%	Source: Telkom
Total	3,358,900	100.0%	3,658,900	100%	3,958,900	100%	Source: ITU with growth assumption

Population est' at 7.3 Million, 2016 penetration rate 54.2%

5. ICT Regulation Environment

- PNG

REGULATORY SETTING

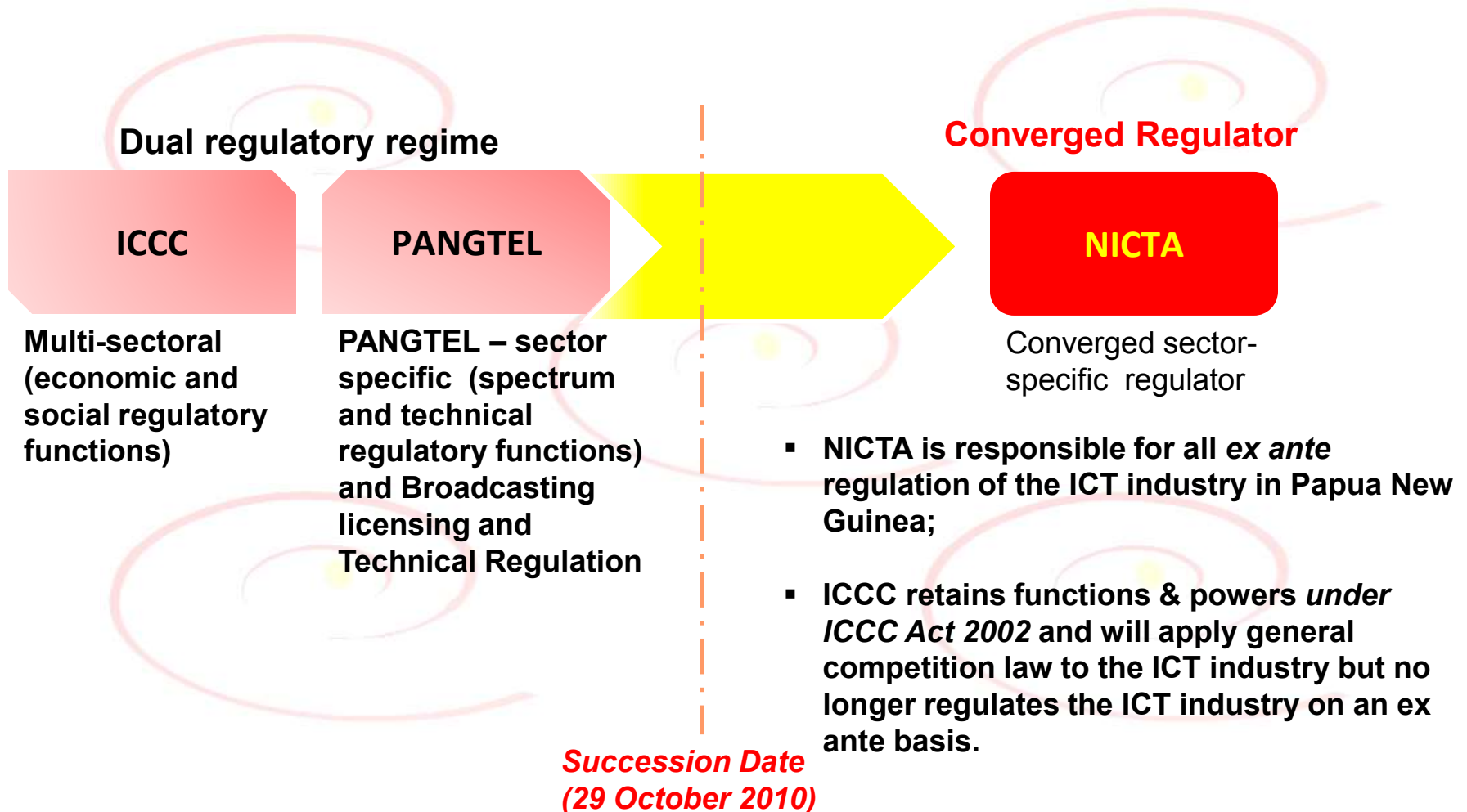
- Single Converged Regulator – NICTA
- NICTA with all ex – ante functions & powers
- Vertical Licensing regime that is focused on SERVICE rather than TECHNOLOGY specific
- ADMINISTRATIVE based Spectrum Allocation
- MARKET Based allocation is also being considered
- Regulatory Regime remains focused on PROMOTING OPEN COMPETITION
- National ICT Act 2009** – The main legislation which provides for the powers, functions, obligations and responsibilities of NICTA

Regulatory Principles

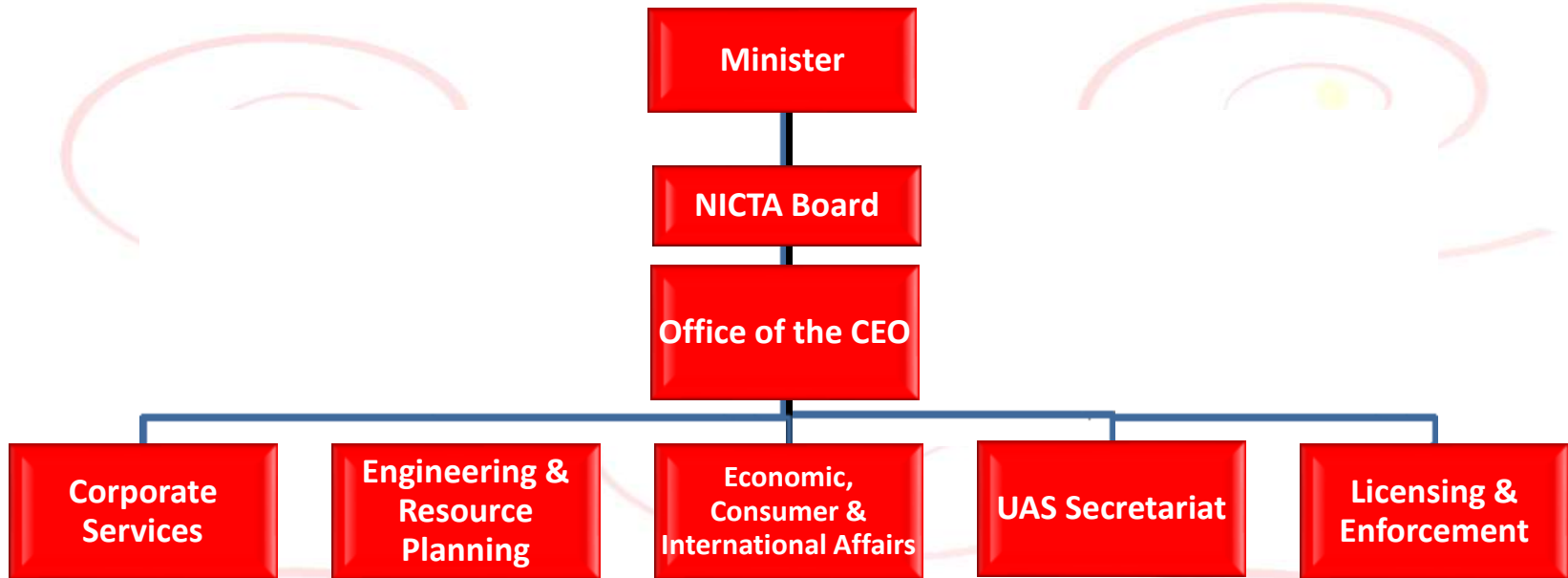
To achieve the objective of the Act, the ICT industry in Papua New Guinea should be regulated in a manner that recognises

- Effectiveness of market forces to promote consumer welfare
- That regulatory measures be:
 - proportional; principled; technologically neutral; transparent; timely; and non-discriminatory.

6. NICTA the Converged Regulator



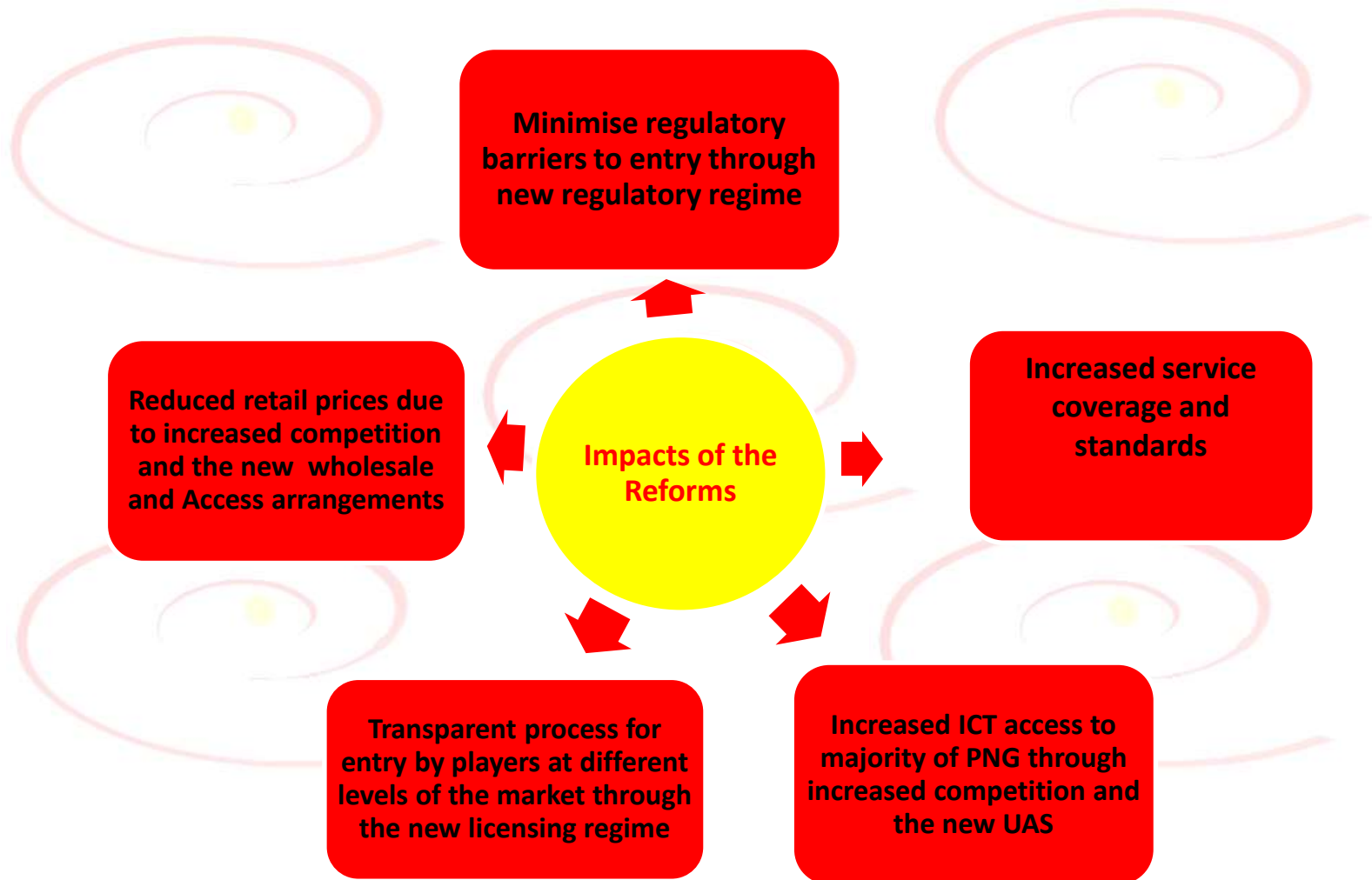
7. NICTA Organisational Structure



Some Benefits of Converged Regulator

1. One stop shop for all ICT licensing and regulatory matters (Converged Regulator)
2. Timely decision making processes as only one Converged Regulatory entity to deal with;
3. Reduction in cost of regulation
4. Removal of past uncertainties and grey areas due to overlaps between functions of regulators

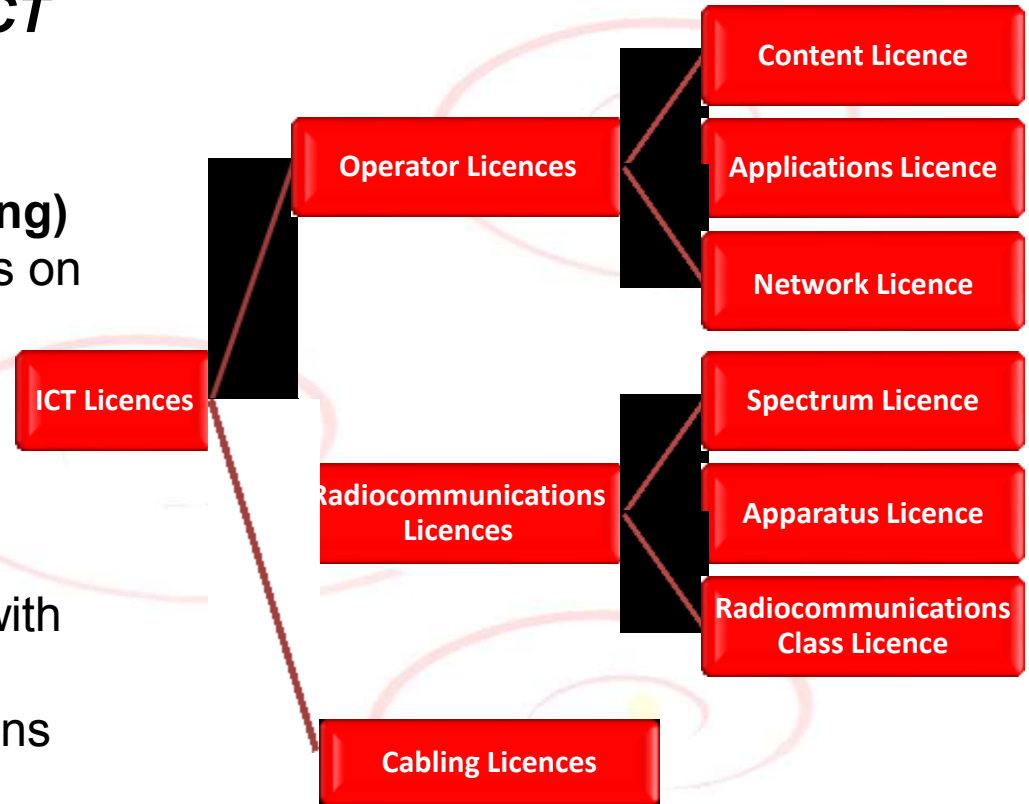
8. IMPACTS OF THE REFORMS UNDER NICTA



9. ICT Licensing Regime

- **Main Regulations (Per NICT At 2009)**

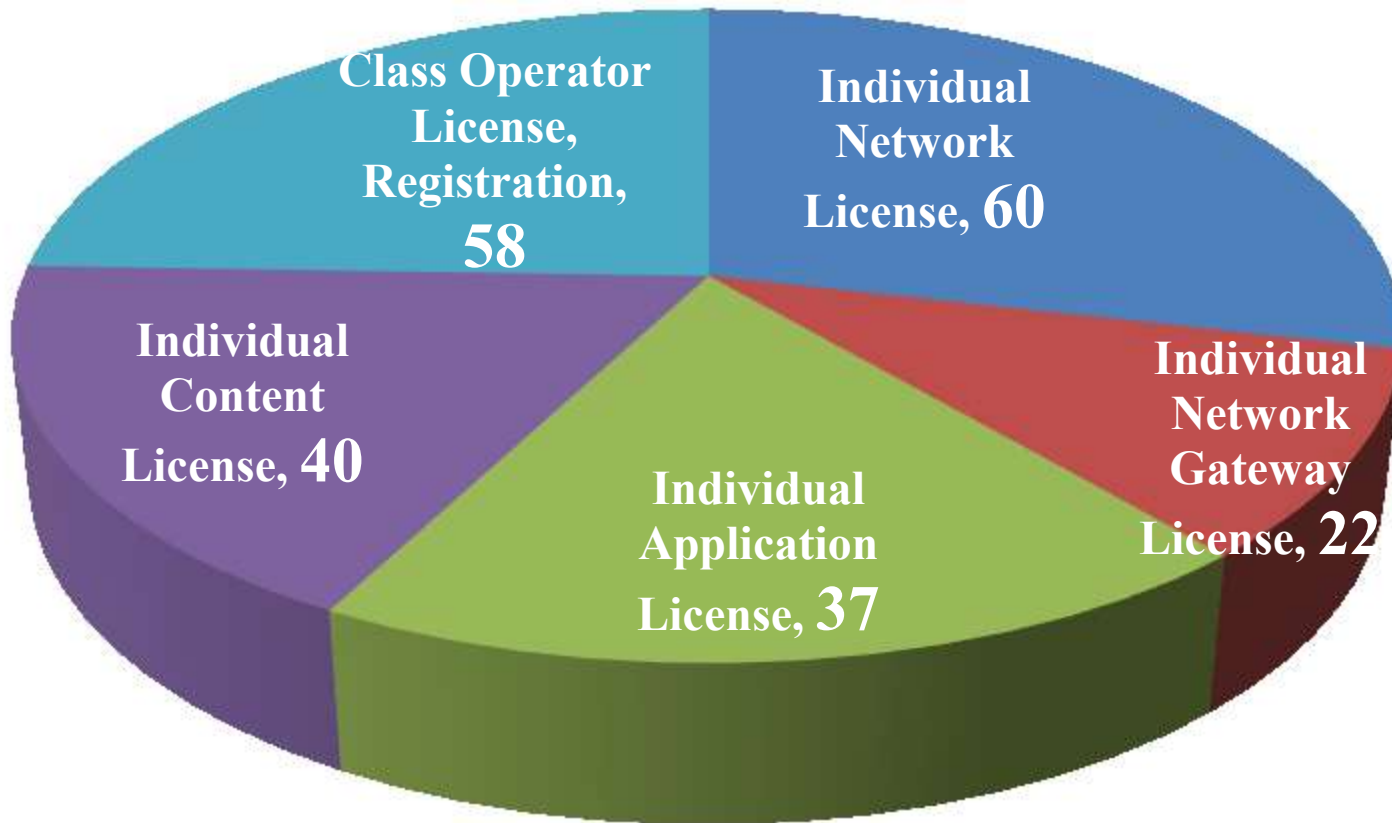
- **National ICT (Operator Licensing) Regulation 2010** - which focuses on operator licensing and the obligations of operator licensees; and
- **National ICT (Radio Spectrum) Regulation 2010** - which deals with radiocommunications and the obligations of radiocommunications licensees.



Objectives

Ensure that the ICT industry contributes to the greatest extent possible to the long-term economic and social development of Papua New Guinea, taking into account constitutional National Goals and Directive Principles

10. ICT Licenses Issued (Update: Nov 2016)



11. Radiocommunication Licensing

Radiocommunications Licenses

Spectrum License

- Spectrum licences are tradeable (Market), long-term licences that delegate management of a segment of spectrum to the spectrum licensee;
- May be allocated by NICTA on a market basis and/or administrative basis;
- Licensees may deploy any apparatus within their designated spectrum;
- Issued for a period of between five (5) to fifteen (15) years;
- Only issued in frequency bands designated for spectrum licensing.

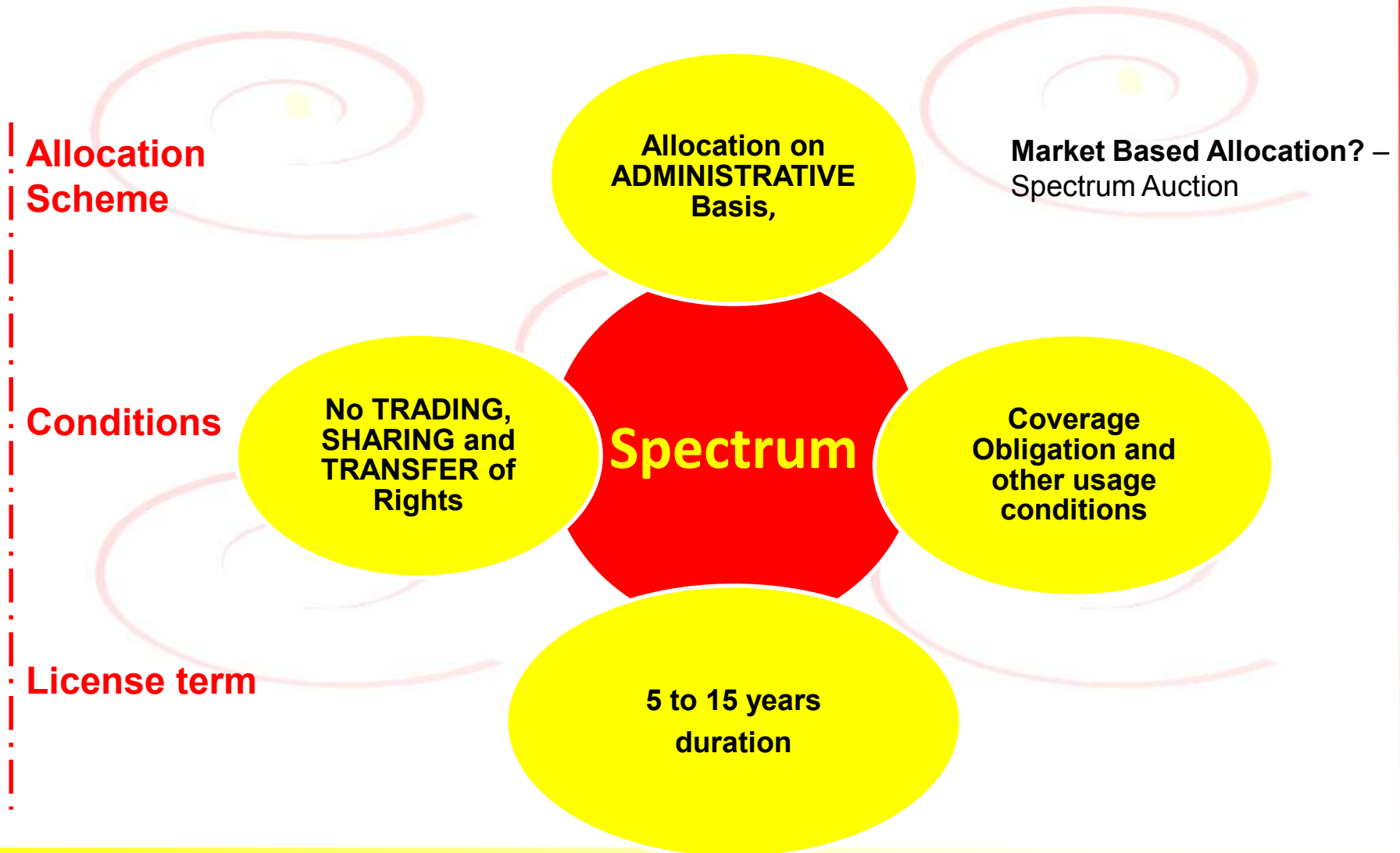
Apparatus License

- Apparatus licences are short-term licences that are issued to an apparatus licensee to authorise the ownership & operation of a particular type of apparatus;
- Only allocated by NICTA on an administrative basis;
- Are processed in the order received, subject to interference issues;
- Issued for a period of up to five (5) years;
- Cannot be issued in bands designated for spectrum licensing.

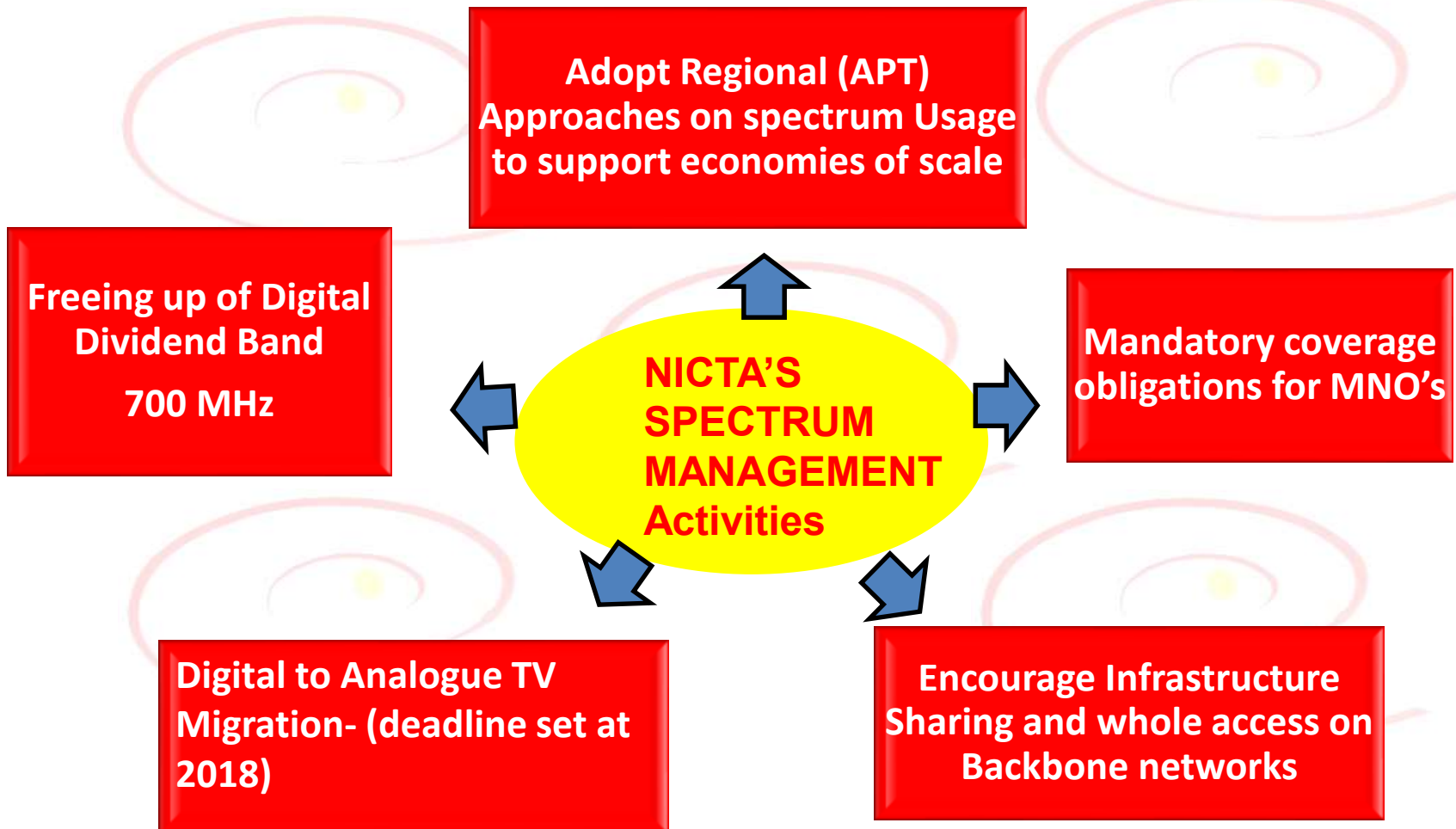
Class License

- Class licences are generic authorisation that allow any person to operate specified types of equipment within the conditions of the class licence;
- Not issued to individuals, but generic authorisations within terms & conditions;
- Do not need to be applied for and no licensing fees are payable;
- Common frequencies used by apparatus operated under common conditions;
- Can apply to bands subject to spectrum licensing or apparatus licensing.

12. Spectrum Licensing



13. Economic Use of Spectrum



14. PNG Case Study Spectrum Auction Analysis – Market Based Assignment

TARGET

- Multi-band auction (700,1800,2100 MHz etc..)
- Current and Intending MNO's
- Open Format to discover potential pricing
- Assess Level of interest

ANALYSIS

NICTA

Year: 2014

OUTCOME

- Limited Response from MNO's
- Value of spectrum yet to be realized
- No real competition by incumbent MNO's
- Policies needed to ensure a fair allocation process

15. Industry Developments

- 1. Creation of National Broadband Policy 2013 was to ensure growth in the national economy across all sectors**
- 2. Establishment of a Government owned entity, DATACO, in 2014 to provide wholesale telecommunication transmission services through Government owned assets**
- 3. Regulator (NICTA) considering policies to enable mobile & telecommunication infrastructure sharing**
- 4. Regulator (NICTA) started a market analysis to determine potential for a competitor in the mobile sector**

16. Challenges

1. Determining appropriate Retail pricing of entry-level broadband services

1. Addressing Online criminal Activities by mobile users (Cybercrime Policy)

2. Implementing the SIM Card regulation in PNG

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THANK YOU..

<http://www.nicta.gov.pg>