



Conducting Auction for Allocating Frequency for IMT-2000: The Case of Indonesia

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Overview of Indonesia Telecommunications Market

Market Size and Potentials:

- **Population: 230 million (adult: 159 million)**
- **Annual per capita income: \$ 1,200 (PPP-adjusted: \$ 3,300)**
- **Fixed line:**
 - **teledensity: 7%,**
 - CAGR 2000-04: **10.0%,**
 - Forecasted annual growth: 10.7% per annum up to 2010
- **Cellular teledensity:**
 - **Teledensity: 18%**
 - CAGR 2000-04: **70.0%**
 - Forecasted annual growth: **20.2%** per annum up to 2010

Competitive Landscape:

- There are 11 fixed and wireless licensed telecommunications operators
- Dominant operators:
 - Fixed line: PT Telkom: (>95%)
 - Cellular: PT Telkomsel, PT Indosat, PT Excelcomindo: (>92%)
- Main technology used: GSM-1800, CDMA-800, CDMA-450, and W-CDMA-2.1GHz



Overview of Problem and Policy

Legacy of Previous Policy (up to 2004 before new government):

- **Inefficiency due to mixed allocation (for IMT-2000: 4 blocks of 2X5 MHz for W-CDMA and for PCS-1900: 2 blocks of 2X5 MHz for FWA [fixed wireless access] and for guard band: 5 MHz)**
- **No benchmark** for market-based up-front fee and annual-frequency fee for previous 2 operators (**PT CAC** and **PT NTS** - 2 blocks of 2X5 MHz each) having received IMT-2000 frequency allocation based on beauty contest mechanism
- **Complicated calculation of annual frequency fee** (based on actual number of BTS, width of band, power, zone of economy, etc)
- **Strong demand** for additional frequency allocation for IMT-2000 (there were unused 3 blocks of 2X5 MHz)

New Frequency Management Policy:

- **No mixed allocation** (2.1GHz is for IMT-2000 and hence [1920-1980 MHz] are cleared for IMT-2000 with transitional period up to end of 2007; FWA are moved to 800MHz)
- **Market-based mechanism** to be implemented whenever possible
- **Simplification** towards only width of band-based frequency-fee calculation



SIGNIFICANT CHANGES IN INDONESIA FREQUENCY ALLOCATION POLICY

PREVIOUS

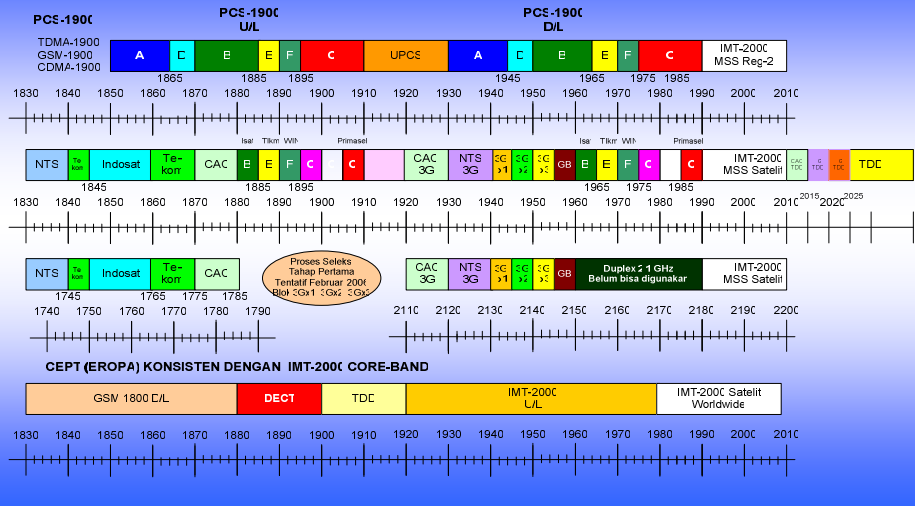
- **Beauty Contest/First Come First Served**
 - Not transparent
 - Not reflect **the scarcity (Economic Value)** of radio frequency spectrum
 - Not encourage efficiency (**frequency hoarding**)
- **Annual Frequency Fee based on Pay as Use (BTS, Power, etc):**
 - Not encourage the most optimal use of radio frequency already allocated (**Denial of spectrum usage cost**)
 - **High transaction cost of fee collection** especially for monitoring and audit (loopholes for various misconducts).

NOW

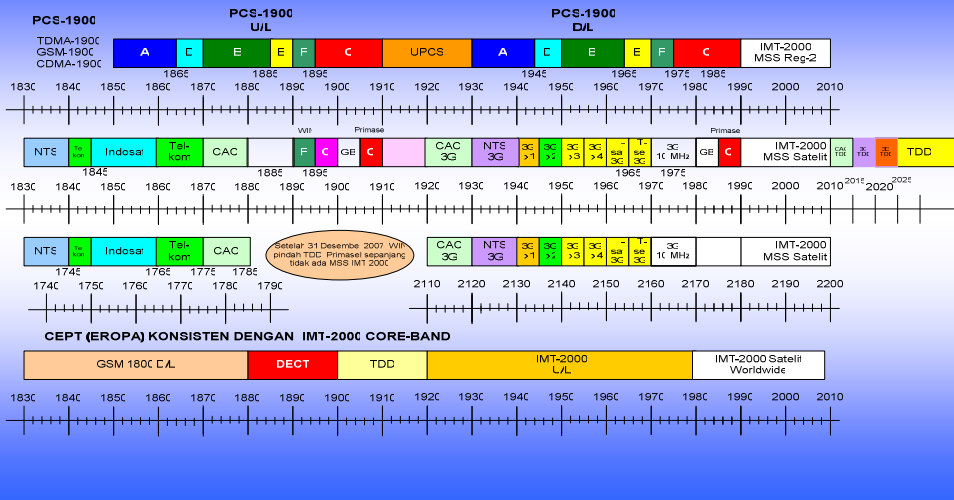
- **Auction** (*whenever feasible*)
 - **Transparent**
 - Allocated only for the company which values frequency **the most (economically)**
 - **Encourage** efficiency
- **Annual Frequency Fee based only on the Width of Band Assigned**
 - Encourage **the most optimal use of radio frequency**
 - Very little administrative cost of collection
 - Very predictable for the purpose of the state budgeting process



Frequency Allocation as of before the auction for IMT-2000



Planned Frequency Allocation as of after the auction for IMT-2000 (to effective by December 2007)





SPECTRUM PRICING POLICY

- In Indonesia, two types of spectrum prices apply:
 - **One time license allocation fee** for allocation of spectrum (in this case we call it **up-front fee**)
 - **Frequency usage fee** imposed on annual basis.
- There is no "**one size fits all**" approach for the determination of spectrum prices, and hence we try to design and apply it based on various related factors:
 - Existing conditions as baseline
 - Market and economic outlook (e.g. supply and demand)
 - Public policy aspects (e.g. to increase telecommunications density, to introduce more competition in the sector, to generate more revenue for the state budget, etc)
- Learning from what other countries experience **is very beneficial!**



BEAUTY CONTEST OR AUCTIONS?

- **Advantage of Beauty Contest:**
 - Regulator can **determine various criteria for comparative selection** (e.g. rollout plan, service quality, coverage, etc.)
 - Regulator preference can be well-accommodated (e.g. national interests, affirmative policy, etc.)
 - Procedure may be less complicated.
- **Disadvantages:**
 - There are **difficulties in defining objective criteria and evaluation**
 - May not so **transparent**, especially in evaluation process.
- **Advantage of Auctions:**
 - **Using only single and clear criteria: PRICE** (can lead to incentives for more efficient spectrum usage)
 - **Transparent process**
- **Disadvantages:**
 - Doable only if there are **more operators** (prospective operators) **than possible licenses**
 - Danger that high license fee will make network deployment costly and thus leads to late network rollout and service delivery and higher end user prices (**very debatable!**)
 - Can be a costly process (*especially if hiring costly special financial adviser or consultant*)



THE DEVILS ARE IN THE DETAILS: AUCTION DESIGN

PRINCIPLES:

- Auction process must be **easy to understand, transparent, fair-equal treatment**
- Various choices:
 - **Sealed or open bid**
 - **Simultaneous or Sequential**
 - **Single round or multiple rounds**
 - **Bid for location or just the quantity**
 - **etc.**

INDONESIA 3G AUCTION DESIGN:

- 3 blocks à 2 x 5 MHz available to be auctioned
- **2-round Sealed Ascending Simultaneous Auction with Pre-Qualification** (*the first case in the world!*)
- Bid for **the quantity**, not for the location
- Maximum bid is for **2 blocks** per bidder
- Bid price represents bidder willingness to pay **annual frequency usage base fee** per block
- Reserve price is **\$ 10.0 million per block**
- No maximum increment limitation
- Each winners has to pay:
 - **Up-front Fee: 2 times of its own bid price**
 - **Annual Fee: The lowest** among the winners



RULES OF AUCTION

- There are **2 rounds of auction**
 - At the **first round**, bid price must be higher than the reserve price
 - At the **second round**, bid price must be at least the same as the previous
- Each bidder has to submit the price in sealed form and envelope especially designed by the auction committee during the period of submission (3-hour window period)
- The bid is **opened publicly at the end of each round**
- Each bidder may bid for 1 or 2 block at each round and may change the number of block at each round (but it has to have sufficient bid bond to cover the bid)
- **The winners** are determined by:
 - The highest ranked bidder and its number of block asked, and
 - The remaining unallocated block(s) for the second-highest ranked bidder, and
 - The remaining unallocated block(if still available) for the third-highest ranked bidder.



THE REASON OF SIMPLE AUCTION DESIGN

- We have **no sufficient facilities** (specialized auction room, system, hardware, and software) to conduct simultaneous multiple round auctions or combinatorial auctions [as conducted by developed countries]
- We want the auction process as simple as possible, but still **incorporating the price-competition adjustment process**
- We **keep everything on the substance** [e.g no glossy information memorandum document, no meeting with operators or prospective bidders in a luxurious place, etc]
- We have **no precedence and experience** in conducting real auctions for licences (even for other scarce limited resources [oil, gas, wood, etc] use!)
- We **ourselves learned a lot from previous 3G auctions** in various countries because we **have no resource to hire special financial advisor(s) or auction consultant** to design and manage the auction
- We have to **rely on our own resources!**



CRITICAL ASPECTS (i)

- **Umbrella Regulation:**
 - We issued and enact at least 6 ministerial decrees (on frequency management, auction process and procedures, licence modification, auction committee, etc) to support the process
- **Reasonable Reserve Price:**
 - The minimum amount acceptable by the government should there be no increment during auction process (*can not too low-opportunity lost for the government, nor too high-nobody wants to bid*)
 - We calculated based on the conversion of the existing 2G frequency usage fee and its ARPU and also benchmarking with other auction results and then disclose it before pre-qualification document submission
 - 1st -round bid has to be higher than the reserve price, otherwise the bid is disqualified
- **Clear Frequency Moratorium Assignment Policy:**
 - Any unallocated frequency band (7 blocks of 2X5 MHz) will not be allocated until 2008
- **Spectrum Cap Policy:**
 - Each operator occupies maximum of **2 blocks of 2X5 MHz at 2.1 GHz to create equal level of playing field**



CRITICAL ASPECTS (ii)

- **Price Taking Policy - Previous IMT-2000 licensee has to pay:**
 - Up-front fee equal to the amount paid by the lowest of the winners
 - Annual frequency use fee at the same amount paid by the winners
- **Bid Bond** (to ensure seriousness and to guarantee the commitment):
 - Bank guarantee of \$ 500,000 per block of 2X5 MHz
 - It can be executed for the violation of auction rules and regulation
- **Performance Bond:** (Applicable only for the winners)
 - Bank guarantee of \$ 2 million per block of 2X5 MHz or 5% of bid price, whichever the higher
 - It can be executed for the breach of commitment after the auction (annual frequency fee payment, coverage, etc.)
- **Value Maintenance Principle:**
 - The value - result of the auction (Present Value) is maintained by the adjustment of future payment with Central Bank Rates (Future Value)



CRITICAL ASPECTS (iii)

- **Clear Auction Rules and Regulation:**
 - Rule for Determination of Winners and Fees Calculation
 - Rule for Ties Bid
 - Rule for Valid Submission
 - Rule for Re-allocation should the Winner Reject, etc.
- **Clarity of Auction Document:**
 - Pre-requisites for applicants and requirement for pre-qualification
 - Policy and Regulatory Framework
 - Objects to be auctioned and its conditions (existing use in some localities, possible interference problems, etc)
 - Auction process and procedures
 - Technical standard requirements
 - Rights and obligations of the winners
 - Annulment of auction process, etc.



CRITICAL ASPECTS (iv)

- **Pre-qualification Requirements** (based on **Light Pre-Qualifications** approach and Minimum **Passing-through Evaluation** method):
 - Company article of associations, ownership structure, financial strength, fundamental **business** and **general technical deployment** plans
 - Declaration of **commitment to fulfill license conditions** incorporated in the 3G auction process (coverage, quality of service, local contents and products procurement, research and development activities, human resources development, 3G-3G and 2G-3G roaming agreement, etc)
 - **Declaration of true and completeness**, that all information required by tender is accurate and complete and that all commitments submitted is fulfilled.
 - **The burden of proof is on the hands of the bidders**, not the auction committee!



CRITICAL ASPECTS (v)

- **Prohibition of Collusion Activities:**
 - The auction itself is inherently competitive process
 - Direct or indirect cooperation amongst bidders with the intention of influencing the auction or the results of the auction is strictly prohibited
 - Auction committee has the right the right to take measures such as to exclude applicants from auction procedure if collusion is proved to happen.
 - The Minister has the right to annul the results if collusion is proved to happen.



Schedule of Auction Process: 1 Month

No.	ACTIVITY	PERIOD
1	Registration and Auction Document Available for Sale	16 January 2006 – 27 January 2006
2	Auction Document Q&A Submission	17 January 2006 – 27 January 2006
3	Q & A Session for Auction Document	30 Januari 2006
4	Pre-Qualification Document and Bid Bond submission	17 January 2006 – 2 February 2006
5	Pre-Qualification Evaluation	2 -3 February 2006
6	Announcement of Pre-Qualification Results	3 February 2006
7	Appeal Period for Pre-Qualification Results	3-6 February 2006
8	Pre-Auction Q & A Session	6 February 2006
9	Auction Day-1 and Day-2	7 February 2006 & 8 February 2006
10	Announcement of Auction Results	8 February 2006
11	Appeal Period for Auction Results	9-13 February 2006
12	Formal Auction Results Notification	14 February 2006



Summary of Auction Process and Results

Registration:	Pre-Qualification:	1-Round Auction:	2-Round Auction:
PT Telkomsel PT Excelcomindo PT Indosat PT Bakrie Telecom PT Telkom PT Komselindo PT Sampoerna Telekomunikasi Indonesia	PT Telkomsel PT Excelcomindo PT Indosat PT Bakrie Telecom PT Telkom	PT Telkomsel (\$ 11.8 million, 2 blocks) PT Excelcomindo (\$ 18.0 million, 1 block) PT Indosat Tbk (\$ 10.8 million, 1 blok) PT Bakrie Telecom (\$ 10.1 million, 2 blocks) PT Telkom (\$ 10.2 million, 1 block)	PT Telkomsel (\$ 21.8 million, 1 block) PT Excelcomindo (\$ 18.8 million, 1 block) PT Indosat Tbk (\$ 16.0 million, 1 block) PT Bakrie Telecom (\$ 10.8 million, 1 block) PT Telkom (\$ 10.3 million, 1 block)
16-30 Jan 2006	2-3 Feb 2006	7 Feb 2006	8 Feb 2006

Note: (bid price per block per annum, number of block quoted); \$1 was approximately Rp 10,000

Up-front Fee Paid for each block of 2X5MHz:
 PT Telkomsel \$ 43.6 million (2 X 21.8 million)
 PT Excelcomindo \$ 37.6 million (2 X 18.8 million)
 PT Indosat \$ 32.0 million (2 X 16.0 million)

Up-front Fee Paid by Price Takers for each block:
 PT CAC \$ 32.0 million (2 X16.0 million)
 PT NTS \$ 32.0 million (2 X 16.0 million)



Auction Results and Revenue for the State Budget

Auction Winners	Number of Block (2X5 MHz)	Up-front Fee (\$ million)	Base Annual Fee (\$ million)	1 st Year Annual Fee (\$ million)	PV of 10-years Annual Fee (\$ million)
PT Telkomsel	1	43.6**	16.0	3.2**	160.0
PT Excelcomindo	1	37.6**	16.0	3.2**	160.0
PT Indosat	1	32.0**	16.0	3.2**	160.0
	3	113.2		9.6	480.0
Price Takers	Number of Block (2X5 MHz)	Up-front Fee (\$ million)	Base Annual Fee (\$ million)	1 st Year Annual Fee (\$ million)	PV of 10-years Annual Fee (\$ million)
PT CAC	1*	32.0***	16.0	3.2**	160.0
PT NTS	1*	32.0***	16.0	3.2**	160.0
	2	64.0		6.4	320.0
TOTAL	Number of Block (2X5 MHz)	Up-front Fee (\$ million)	Base Annual Fee (\$ million)	1 st Year Annual Fee (\$ million)	PV of 10-years Annual Fee (\$ million)
	5	177.2	80.0	16.0**	800.0

Note: * = returning 1 block of 2X5MHz **=to be paid by April 2006 *** = to be paid by January 2008 PV= Present Value



COMPARISON OF 3G SPECTRUM LICENSE FEES

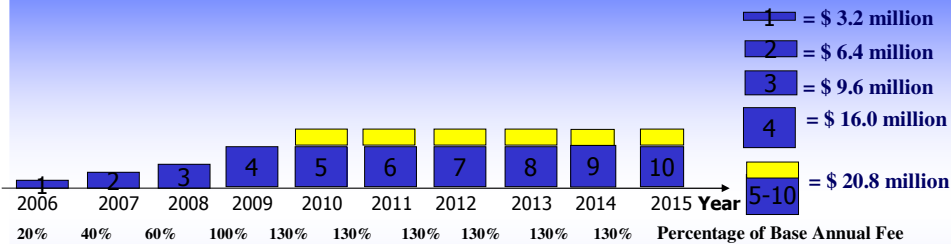
Country	Total License Fees (US\$ million)	Operators	Frequency (MHz)	Duration (year)	Fee/Pop/MHz*)
Australia	351.7	6	60	15	0.26
Belgium	419.0	3	60	20	0.41
Sweden	42.0	4	60	15	0.00
Malaysia	26.3	2	30	15	0.04
Singapore	150.0	3	60	20	0.37
Norway	44.8	4	60	12	0.17
Greece	376.8	3	60	20	0.54
Portugal	360.0	4	60	15	0.48
Spain	444.0	4	60	20	0.11
				Average	0.26
INDONESIA	977.2	5	25	10	0.54

*) Total Licenses Fee per adult population per MHz adjusted with Purchasing Power Parity (PPP) and duration for 10-year license period

Indonesia: adult population 159.8 million; GNP per capita based on PPP \$ 3.300;



ANNUAL PAYMENT SCHEME FOR EACH BLOCK OF 2X5 MHz (BEFORE ANNUAL ADJUSTMENT WITH CENTRAL BANK RATES TO MAINTAIN THE VALUE OF AUCTION RESULTS)



The scheme is designed to suit revenue cycle, particularly, during initial stage of deployment and commercial launch

The winner has to commercially launch by the end of 2006



CONCLUDING REMARKS

- Carefully designed, auction can be an **effective** and **very transparent** process of allocation frequency for IMT-2000 as an integral part of frequency management policy improvement
- **Auction design must be suited** with the characteristics of availability of frequency, market and competition situation, public policy interests, and other related aspects [**Not One-Size Fits All**]
- For the developing countries, **auction design can be designed to be simple** to handle and to manage under resources limitation
- **Learning from the experience** of other countries is very beneficial
- Exorbitantly-paid financial advisers/consultants (with costly success fees) may not be necessary
- I will be happy to share further in details of Indonesia experience with you (beyond this forum) – especially for developing countries!



APPENDICES



SOME IMPORTANT CONTENT OF LICENSE

- Exact frequency allocation
- License period for assigned frequencies
- Minimum requirements of 3G mobile communications system
- Operator code
- Usage conditions for frequency spectrum
- National roaming (3G – 2G) and roaming rights and obligations (3G – 3G)
- Coverage obligations and review of coverage
- Rights and obligations of licensee
- Notification of operation and introduction of new services to regulator
- Rules on interconnection, anti-competitive behaviour, and consumer protection
- Infrastructure sharing between operators
- Rules and sanctions when license obligations are violated



SOME MINIMUM REQUIREMENTS FOR 3G SYSTEM

1. Multimedia capability exceeding the capabilities of 2G
2. Efficient access to the Internet and other services based on the Internet Protocol (IP).
3. Voice transmission at a quality comparable to fixed networks.
4. Portability of services independent of the respective UMTS environment if necessary (e.g. public/private/intra-company; fixed/mobile).
5. Seamless operating environment including unlimited roaming with 2G as well as between the terrestrial and satellite-based parts of UMTS networks.
6. New terrestrial radio interface for access to all services (also packet-switched services), allowing asymmetrical transmission and selection of the bandwidth/data rate in harmonised frequency bands.
7. Call handling, services control, location and mobility management including all roaming functions on the basis of the further development of existing core networks, such as an advanced GSM core network, considering convergence between mobile and fixed networks.



Minimum Coverage Requirement

	2006	2007	2008	2009	2010	2011
Minimum number of provinces covered	2	5	8	10	12	14

	Year 1	Year 2	Year 3	Year 4	Year 5 and afterwards
Minimum coverage in each of provinces covered (percentage of population since the beginning of roll-out year in such province)	10%	20%	20%	30%	30%



Thank You

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