



Establishing Internet Indicators For Development

Case Study:
The Indonesia Internet Service Providers Association's
(APJII) Experience

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Event: Training ICT Indicators & Statistic
Jakarta, 29 October 2007

The Development of Internet Service Providers (ISPs) in Indonesia



- 1995 - The first Internet License/Permit was issued by the government.
- May 1996 - The Indonesia Internet Service Providers Association (APJII) was established through the First APJII National Congress in Jakarta. The total members of APJII at this time were 27 ISPs (mostly ISPs from Jakarta & Bandung).
- 1999 – By the Second National Congress, the numbers of permits/licenses issued reached 58 ISP permits. However, the total numbers of APJII members were 40 ISPs.

The Development of Internet Service Providers (ISPs) In Indonesia



- 2000 – The government began issuing 2 (two) types of licenses, which were, Network Access Providers and Multimedia. Some of the holder of these licenses were registered as APJII's members. In this year the numbers of members grew to 78 in total (comprised of 74 ISPs, 1 NAP, 3 Multimedia, 1 Special Education license). However, the total number of licenses issued by the government = 162 licenses.
- 2002 – The Third APJII National Congress. During this year APJII members were divided into 121 ISPs, 6 NAPs, 6 Multimedias and 3 other licenses (wireless radio and special education purposes). Total numbers of APJII members = 136 members. Total licenses issued by the government = 222 licenses.



The Development of Internet Service Providers (ISPs) In Indonesia

- 2005 – The Fourth APJII National Congress. By this year the numbers of APJII members comprised of 232 ISPs, 35 NAPs, 8 Multimedias and 6 Special licenses. Total APJII members = 281 compared to the total number of licenses issued by the government = 292 licenses.
- 2006 – The Extraordinary APJII National Congress. This special session was held due to a high demand by members to establish a reformation within the organization. Until this year, APJII had branched out to 6 territories (East Java, Sulawesi, Kalimantan, Sumatera, West Java).



The Purpose of Data Collection / Gathering

- To fulfill APJII's mission:
 1. Assisting members to continuously upgrade its quality of internet access.
 2. Creating public awareness to support the use of ICT for better human resources quality.
 3. Applying Internet within the business environment to achieve a better global connection and communication.
 4. Assisting the government to implement ICT as a tool to enhance economic development.
 5. Providing members with training, new information and current technology on the internet development.
 6. Enabling the Indonesian people to adopt ICT as part of their goals toward International Partnerships.

The Purpose of Data Collection / Gathering



- To become the internet research data center.
- To obtain a clear picture of the internet industry.
- To understand the behaviour of people in using internet.
- To measure the country's development as opposed to the rest of the world.
- To develop and propose programs to reduce digital divide.

Complexities of Formulating Internet Indicators



1. There are many ISPs that are not in operational nor APJII members. Those who are not operational have the licenses for various purposes. For instance, a corporation will be able to get IP Address directly to APNIC (not through APJII) for private use, or will be able to buy bandwidth directly to the telco providers without going through an ISP.
2. There are 3 major telco operators that are APJII members. Up until 2005, their internet subscribers were not being fully calculated into APJII data due to confusion of defining "internet users & subscribers". For example, APJII data on internet subscribers in the year 2005 is 1,5 million people, whereas if APJII includes data given by PT Telkom (national telco operator), then the number could have been 4,8 million.

Complexities of Formulating Internet Indicators



3. Many illegal ISPs that are not accounted for by the government nor APJII. These ISPs are flourished in the suburban areas or at the outskirts of a big city.
4. Many people gain access to the internet through Internet Kiosk (called; Warung Internet). According to the Internet Kiosks Association (AWARI) currently there are approximately 6,000 Internet Kiosks throughout the country. Some of these kiosks do not obtain the data of their customers, thus, we cannot eliminate or cross-out any multiplications.

Complexities of Formulating Internet Indicators



5. To obtain better information, many ISPs are required to send out questionnaires to their customers in regard to number of users, purpose of internet usage (education, e-commerce, research, etc). Some ISPs consider this task tedious and irrelevant.
6. APJII must decide how much information should be included in the survey. Is it important to ask the ISP how much bandwidth they are using currently? Should APJII require ISP's customers profiling in related to gender, income, status, etc?

Formation of Questionnaires



- Questionnaires are divided into 5 parts, which are: General / Basic, Memberships, Internet Resources, Indonesia Internet Exchange (IIX), Others.
- Questionnaires are distributed to all APJII members (ISPs, NAPs, Multimedia & Special licenses).
- Each member is guaranteed privacy in relating to their personal information (i.e, name of bandwidth providers, company's business strategy, critics & suggestions). APJII will only release agregate data.



Questionnaire Part 1: General

List of Questions in General Category:

- Name of ISP
- Number of customers:
 - a. Corporate Users : _____
 - b. Personal Users : _____
- Type of Services:
 - 1. _____
 - 2. _____
 - 3. _____
 - 4. etc...

Questionnaire Part 2: Memberships



List of Questions in Memberships Category:

- a. Do you have a branch / branches? List its / their full addresses – locations.
- b. Do you grant franchise in other places? List their full addresses - locations

Questionnaire Part 3: Internet Resources



List of Questions in the Internet Resources Category:

1. How much percentage that is already utilized from the total IPV4 and IPV6 Address Space that is already assigned by APNIC?
2. Does your ISP use NAT to assign the IP Address? If yes, what is the ratio between Public IP Address versus Private IP Address that is utilized by your ISP (i.e, a ratio of 1:3 means that 1 Public IP Address for 3 Private IP Address)

Questinare Part 3: Internet Resources



3. What are some of the considerations that you apply to assigning the IP Address to your customers?
 - a. According to bandwidth request;
 - b. According to the customer's technical requirements;
 - c. According to the customer's request without attaching any technical specifications;
 - d. Others, please explain further:

Questionnaire Part 3: Internet Resources



4. Are you aware that assigning IP Address to your customer must meet an approval from APNIC via Second Opinion Procedure?
 - a. I am aware of that.
 - b. I am not aware of that.
 - c. Other reasons / considerations (please explain):

Questionnaire Part 3: Internet Resources



5. Does your ISP always follow the development implemented by APNIC / APJII?
 - a. Yes always, with reasons: _____
 - b. Not always, with reasons: _____
 - c. Not at all, with reasons: _____

6. Do you understand that the Internet Resources (IP Address and AS Number, reverse DNS) allocated to your ISP cannot be traded (sold & bought), transferred and rented out? They cannot be owned by an ISP only on loan basis by APNIC or Internet Resources Body?
 - a. Yes, I am aware of that;
 - b. I am not aware of that;
 - c. Other answers: _____

Questionnaire Part 4: Indonesia Internet Exchange (IIX)



List of Questions in the IIX Category:

1. How do you rate IIX performance lately? Please describe.
2. What do you think of the response time of the IIX technical team toward your complaints or requests?
3. How often do you experience problems in regard to the IIX?
4. What are your typical problems?
 - a. routing
 - b. link (Link / BGP down)
 - c. Others:

Questionnaire Part 5: Others



In this last part, APJII would like to hear from our members all the concerns and suggestions to improve APJII's services in the future.

1. What type of information and services do you wish to have from APJII?
2. Please send us your critics and suggestions on memberships, IIX, Internet Resources. Also let us know how do you think APJII can help its members better.

---- The End of APJII Questionnaires --



APJII INTERNET INDICATORS

Total Numbers of Internet Subscribers & Users

Year	Subscribers	Users
1998	134,000	512,000
1999	256,000	1,000,000
2000	400,000	1,900,000
2001	581,000	4,200,000
2002	667,002	4,500,000
2003	865,706	8,080,534
2004	1,087,428	11,226,143
2005	1,500,000	16,000,000

APJII INTERNET INDICATORS



IX Multi Router Traffic Graph

Year	Feb-99	Jan-00	Mei-01	Mar-02	Mar-03	Jan-05
Peak	2.05 Mbps	3.07 Mbps	40.96 Mbps	245.76 Mbps	620.59 Mbps	3.9 Gbps

Total Number of APJII Members							
	1999	2000	2001	2002	2003	2004	2005
ISP	39	74	104	121	117	119	232
NAP	-	1	3	6	6	11	35
MULTIMEDIA	-	3	4	6	4	4	8
Others*	1	1	3	3	3	3	6
Total	40	79	114	136	130	137	281

* Wireless Radio License



Areas of Data Gathering Improvements

- More information on data provided by APJII can be accessed through www.apjii.or.id
- APJII welcomes any suggestions and data collection techniques to improve the information on the internet industry.
- In future, APJII is planning to work with a research center / body to formulate a better questionnaires and to develop a solid method of data presentation.
- Trainings and expertise are in need to build a quality information center.



Thank you....

For queries regarding this presentation, please contact me at: ketum@apjii.or.id or sekretariat@apjii.or.id