

INDONESIAN ICT: WHERE YOU'RE GOING TO?

By: Eddy Satriya

satriyaeddy@yahoo.com

Prepared for Informal Discussion Only

At PREST, University of Manchester
Manchester, UK, 10 Dec 2004

Informal Talk

“ICT, Development & Economy in Indonesia”

Guest speaker :

Ir. Eddy Satriya, MA.

Senior Telecommunication Economist, Deputy Director of Energy
Indonesian National Development Planning Agency (BAPPENAS-RI)

Room 10.05 Harold Hankins Building (through the lounge)
Friday, 10 December 2004, at 10.30 – 12.00 (and 13.30 – 14.30, optional)

Contact:

Yanuar Nugroho

yanuar.nugroho@manchester.ac.uk, X55935 (internal **10.12.2004**)

footnotes

.....footnote (1)

Arah kebijakan dalam GBHN

(butir 17 Ekonomi):

“Meningkatkan pembangunan dan pemeliharaan sarana dan prasarana publik termasuk transportasi, telekomunikasi, energi dan listrik, dan air bersih guna mendorong pemerataan pembangunan, melayani kebutuhan masyarakat dengan harga terjangkau, serta membuka keterisolasian wilayah pedalaman dan terpencil”

- ✓ UU No.25 tahun 2000 tentang Program Pembangunan Nasional (Propenas). Khusus untuk Sarana dan Prasarana Penunjang Pembangunan Ekonomi (Bab IV:63-69)

“..prasarana meliputi transportasi, energi dan ketenagalistrikan, pengairan ...serta pos dan telekomunikasi- informatika”

INDONESIA AT A GLANCE

Geographic Profile (Oct 2000)

- Tropical archipelago country
- Total land surface : 5,193,166 sq km
- More than 17,000 islands; 34 provinces; 364 districts; and about 65,000 villages

Demographic Profile (Oct 2000)

- 209 million population (4th largest in the world)
- Life Expectancy : 66.4 years (Men:64.9; Women:67.9)
- Annual Growth Rate: 1.46 %

Economic Profile (Oct 2000)

- GDP growth: Up to 1997: 7-8%; 1997: 4.7%; 1998:-13.2%; 1999: 0.2%; 2000: 3.5%
- Per capita GDP (US\$): 1997: 1110; 1998: 640; 1999:580; 2000: 696 (E)

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

5

LATEST MACROECONOMIC FIGURES

	Unit	2004 (Predicted)	2005 (Assumption)
Economic Growth	%	4.8	5.4
Inflation	%	6.5	5.5
Exchange Rate	(Rp/US\$)	8.600	8.600*
Oil Price	US\$/Barrel	22.0	24.0*
Oil Production	MBCD	1.150	1.125
S B I	%	8.5	6.5

Source: Depkeu, April 04 and Presidential Speech August 16, 2004

*) To be adjusted due to the hike increase on crude oil price

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

6

DECENTRALIZATION

Reform Demands

- Democratization
- Decentralization
- Good Governance

Improving Public Services

1. Transfer of Power/Governance (UU 22/1999)
2. Transfer of Financial Authority (UU 25/1999)

Stages:

- Initiation (1999)
- Installation
- Consolidation
- Stabilization(2007)

Performance is to be improved

- Various Understanding/Vision
- Legislation process is poor

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

7

Fictions and Facts

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

8

FICTIONS / RUMORS

1. **Ditjen Postel goes to Kominfo?**
2. **Postel stays in Ministry of Transportation?**
3. **Part of Kominfo goes to Ministry of Transportation?**
4. **Most parts of Kominfo go to Ministry of Transportation?**
5. **Position for IT professionals?**

FACTS

- ✓ **In general, the progress on ICT is not as expected. Slow!**
- ✓ **Crisis / economic downturn is not the one to be blamed.**
- ✓ **Yet, some countries progress, some don't.**
- ✓ **So what are the issues?**

THE ISSUES ARE...

- ✓ Shifting the paradigm into new economy
- ✓ Understand what and how ICT contributes to the national economy
- ✓ Infrastructure availability (*how can we go online without line; wireless is helping and become alternative*)
- ✓ Policy and Regulatory Framework
- ✓ Human Resources
- ✓ Cooperation with ICT professionals/private sector

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

11

THE HIDDEN ISSUES IS...

**SORRY...,
CENSORED!!**

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

12

FOR INDONESIA, THE ISSUES NOW ARE...

- ✓ Shifting the paradigm into new economy
- ✓ Understand what and how ICT contributes to the national economy
- ✓ Infrastructure availability
- ✓ Policy and Regulatory Framework
- ✓ Human Resources
- ✓ Cooperation with ICT professionals/private sector

PLUS ...

- The introduction of **LOCAL GOVERNMENT AUTONOMY** to the district (Kabupaten/Kotamadya) level (Law No. 22 and 25/1999)
- Awareness of the ICT potentials are still low.
- Still.. limited budget

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

13

*More about ICT,
NE, and KBE*

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

14

ICT

✓ Definition:

- ICT stands for Information and Communication Technology. In practice, it is defined as a convergence of information technology, computer, telecommunications and multi media. In Bahasa Indonesia it is known as TELEMATIKA.

- ✓ Advancement in ICT has had a profound impact in country economy, thus the quality of human life. ICT revolution has opened up new possibilities of economic and social transformations from which both developed and developing countries can potentially benefit.

- ✓ In general ICT has helped, among others, to reduce the transaction cost, to provide cheaper access to information, to increase efficiency, to provide better service, and to speed up the diffusion of ideas.

- ✓ Therefore, ICT creates tremendous opportunities as well challenges.

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

15

ICT : Characteristics and Featrues

✓ ICT has capacity to develop:

- Timely and accurate performance measurements;
- Sharing of information and collaboration among different parties and different location;
- Research capability

✓ The main features of ICT, among others, consist of:

- The ability to store and process a large amount of information;
- Timely and speedy processing of information
- The new medium of telecommunication technologies, providing alternative technologies to mere basic telephone.

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

16

ICT : THE POTENTIAL BENEFITS

- ✓ ICT could lead to income growth through: economy-wide efficiency gains due to ICT deployment throughout economy and production of new export products in some sectors.
- ✓ ICT could help farmers by providing market information such as pricing, weather forecast, crops management, and so forth that could save costs, thus enhance their income.
- ✓ ICT improves competitiveness , particularly Small and Medium Size Enterprises (SMEs)
- ✓ ICT could help poor people by providing them with learning opportunities, enabled-internet distant learning.
- ✓ ICT could help by providing training to rural health workers and other social workers,
- ✓ ICT helps government in providing variety of services to people, increases transparency and promotes good governance.

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

17

ICT in DEVELOPMENT

- ✓ The role and contribution of ICT in development is increasing. Internet is having more profound effects, especially in business than any development since the Industrial Revolution (Richard Lord, 2000).

VIEWS ON ICT

- Saunders et.al. (1994) note that the benefits from better telecommunications are instant availability of market information, higher efficiency of transportation, better regional development, easier access in opening isolated areas, better emergency security facilities, and easier coordination of international activities.
- Hornik (1990) postulates that telecommunications can be considered as a complement to development. Using telecommunications, the benefits from development policies can be rapidly facilitated and distributed throughout economy.
- ITU (1990) remarks that telecommunications is essential for the development process which can raise productivity and efficiency of other sectors, and has enhancing the quality of life.
- Wellenius et. all. (1992) show that telecommunications is a fundamental factor of production in conjunction with the labor force and capital.
- Among infrastructure projects funded by The World Bank, telecommunication projects has higher economic rate of return compared to other sector such as transportation, power, and irrigation (World Bank, 1994).

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

18

ICT in DEVELOPMENT

- The United States' vice president highlights that information and telecommunication technology bring economic progress, strong democracy, better environmental management, and improved health care (Gore, 1994).
- =====
- Tyler (1981) shows that in certain environments, telecommunications was considered counter-productive. Benefits accrued to the more wealthy and commercial sectors at the expense of the whole economy.
- Lunstedts (1990) questions government's regulation in anticipating the complicated legal, ethical, and philosophical problems of surveillance technology in the United States.
- Brooks (1990) suggests that information technology and telecommunications may worsen the present social structure class of the United States, leading to higher inequality.
- By invoking the Rawlsian concept of justice and Aristotelian concept of happiness, Daleiden (1990) addresses some of the philosophical implications of the controversy in the telecommunications industry nowadays. He argues that as human welfare is enhanced by the new services, multiplicity of those services may involve significant social cost in terms of investment and consumer confusion.

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

19

NEW ECONOMY

- ✓ **What is new economy?**
 - Tens of terms and jargons are widely used, for example : digital economy, information economy, knowledge economy, cyber economy, internet economy, network economy, connected economy and so forth.
- ✓**Agricultural Economy - Industrial Economy - Information Economy - Knowledge Economy - Bio Economy (?)**
- ✓ **What makes information economy exist? : Technological Changes; Technology changes, economics laws do not**
(Information Rules [1999], Varian & Saphiro)

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

20

THINGS vs INFORMATION

❖ Economics of Things

- Things can be replicated through manufacturing
- Things wear out
- Things exist in a location
- Things subject to diminishing and increasing return
- Things is consistent with efficient market

❖ Information Economics

- Information can be replicated at almost zero cost
- Information never wears out
- Information comes from nowhere and everywhere
- Information is perfectly increasing return
- Information do not necessarily need perfect market

Sources: Philip Evans and T.S Wurster (2000), "Blown to Bits" HBSP

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

21

K B E

✓ What is knowledge based economy (KBE)?

- A KBE is an economy in which the production, distribution, and the use of knowledge is the main driver of growth, wealth creation and employment across all industries... (Mc Keon and Weir)

✓ Characteristics of a KBE (by EC-APEC)

- Business environment
- Innovation system
- Human Resources Development
- ICT infrastructure

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

22

NEW ECONOMY vs KBE

✓ New economy...

Focuses on the respective roles of ICT and restructuring in overall productivity growth

✓ KBE

Emphasizes the growing importance of knowledge in all economic activities

...the most important driver of the benefits to be gained in the new economy is not ICT sales or ICT production, but how individuals, firms, markets, and governments use those technologies, especially in a networked environment...

Source: Chapter I of EC Report (APEC)

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

23

RECENT DEVELOPMENTS ON ICT

CANCUN
(May 2000)

APEC

CANCUN DECLARATION

- To adopt APECs action programs in Telecommunication and information.
- To support international regulation in charging of internet
- To adopt Interconnection principles in enforcing multi-operator telecommunication services.

Sources: Ditjen Postel and Bappenas

Indonesia in waiting,
still..

OKINAWA
(July 2000)

G8

OKINAWA CHARTER

- ICT is one of essential sectors in 21th century.
- To reach digital opportunities
- To bridge the Digital Divide
- To promote to global participation.
- To enforce the readiness of IT policy, regulatory and infrastructure.
- To enforce connectivity, increasing of access, and reducing of cost.
- To develop Human Resources.
- To participate in E-Commerce.

TOKYO
(Nov. 2000)

APT

TOKYO DECLARATION

- By 2005, Every people in Asia-Pacific region has opportunity to have access to the Internet
- To unify the Vision of IT
- To bridge the Digital Divide
- To develop ICT infrastructure
- To develop applications
- To develop Human Resources and Literate
- To Cooperate in Regional and Global

Indonesian ICT

NITF

- E-govt for Good Governance (2005)
- E-business to support SME (2005)
- Community based IT (2010)
- ICT for education (2010)
- E-democracy (2010)

satriyaeddy@yahoo.com

24

W S I S

(Related to Education and Institution/Dec 2003)

Building the Information Society: A Global Challenge in the new Millennium

Action Plan to be achieved by 2015 (among others)

- To connect Universities, colleges, secondary and primary school;
- To connect scientific and research center;
- To connect libraries, cultural centers, museums, post offices, and archives;
- To adopt all primary and secondary school curricula

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

25

Infrastructure

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

26

DIGITAL DIVIDE

- ✓ **Digital Divide: Gap between ones that have access to ICT services and ones who do not.**
- ✓ **Digital Divide happens:**
 - Between Country
 - Between Region (Province)
 - Between City
 - Between District and Sub-district
 - Among people
- ✓ **In addition, one of the most quoted statistics from the report of the Independent Commission for Worldwide Telecommunication Development headed by Maitland was that " *Tokyo has more telephones than the whole of African continent*". (ITU,1998)**
- ✓ **Reason for the digital divide: Income / The "Wealth" of Nation (Jipp, 1963)**

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

27

COMPONENT OF ICT DEVELOPMENT

1. POLICY AND REGULATORY FRAMEWORK
2. INFRASTRUCTURE
3. HUMAN RESOURCES DEVELOPMENT
4. SUPPORTING INDUSTRY
5. APPLICATION IN
 - ✓ GOVERNMENT
 - ✓ NON GOVERNMENT AND PRIVATE

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

28

Some of Available Infrastructures

(Existing Condition)

- 9.2 millions of telephone lines
- 0.35 million public phone (2/3 at wartel/net)
- 23 millions of cellular subscribers
- PC penetration : 5-8 million
- TV penetration : 35 million
- The Telecom Services reach:
 - 80 % of kecamatan.
 - 40 % of desa or villages.

Source: Ditjen Postel and PT.Telkom

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

29

EXISTING INFRASTRUCTUR (2)

(MID 2004)

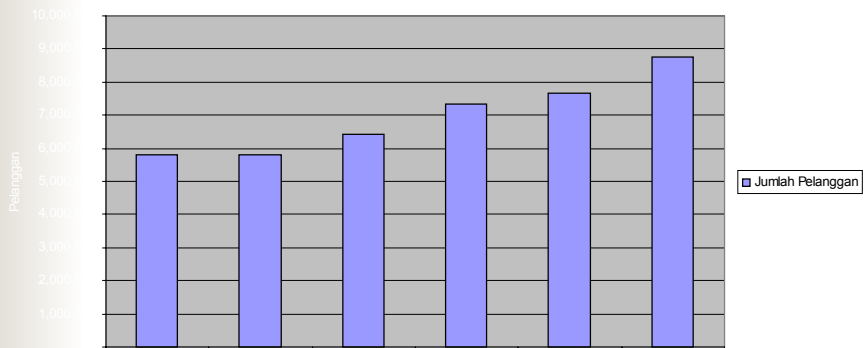
- **Fixed Line → 9.2 million**
 - High Teledensity Jakarta Area → 35%
 - Med Teledensity di Urban Area → 11% - 25%
 - Low Teledensity di Rural Area → 0,02%
- **Cellular → 23 Million subscribers**
 - Telkomsel : 12 M → GSM
 - Indosat : 6.5 M → GSM
 - Excelcom : 3.5 M → GSM
 - Others : 200 K → CDMA
- **Internet**
 - 94 License ISP → 84 ISP active
 - Internet Penetration
 - 1 M Subscribers and ± 10 M Users
- **Cable TV → Almost 1 Mil Subscribers**
 - 5 Operators (Indovision, Cablevision, Telkomvision, Jogja Medianet, Fasindo)
- **Power Line Communication (Comnet+) → Pilot project**

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

30

PSTN GROWING THIS WAY..



1999	2000	2001	2002	2003	2004
5,810,951	5,810,951	6,414,348	7,347,166	7,650,349	8,754,243

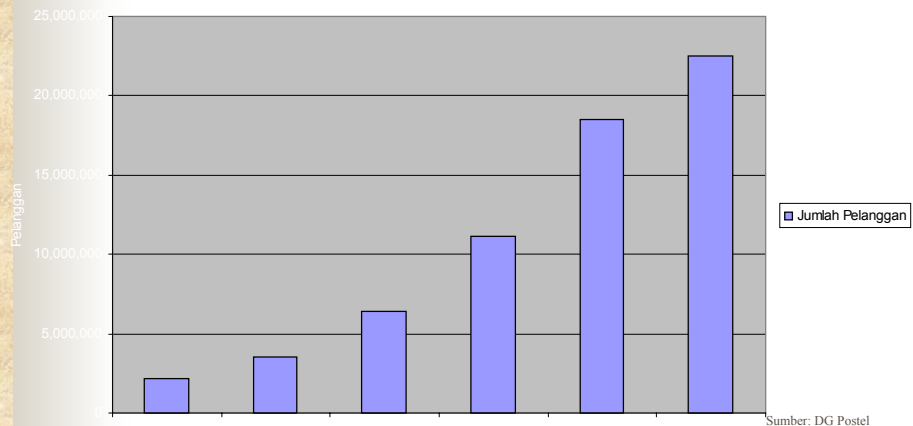
Sumber: DG Postel

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

31

CELLULAR THIS WAY...



1999	2000	2001	2002	2003	2004
2,149,708	3,510,670	6,395,179	11,159,420	18,495,251	22,506,172

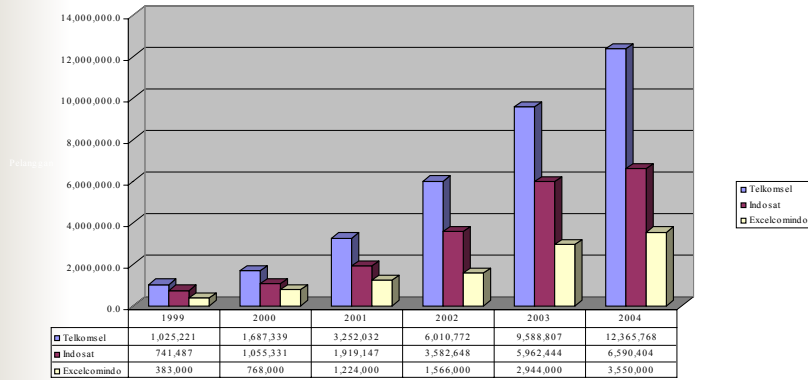
Sumber: DG Postel

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

32

CELLULAR BY GROUP



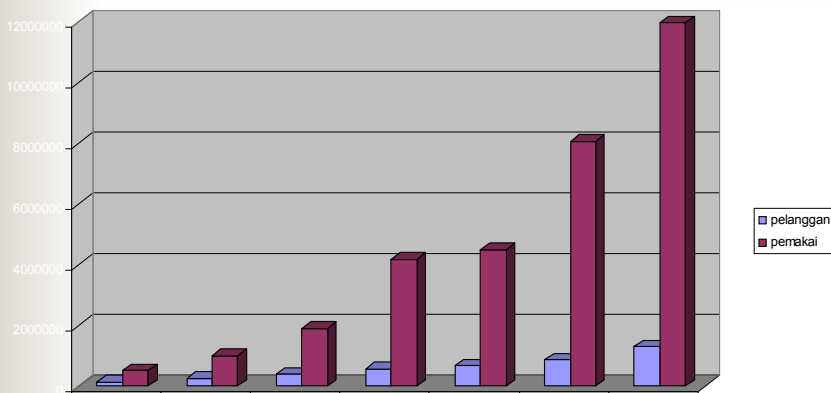
Sumber: DG Postel

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

33

INTERNET, SUBSCRIBER & USERS



Sumber: DG Postel

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

34

Peak Traffic IIX

	Februari 1999	Januari 2000	Mei 2001	Maret 2002	Maret 2003	Desember 2003
Peak	2.05 Mbps	3.07 Mbps	40.96 Mbps	245.760 Mbps	620.595 Mbps	1200 Mbps

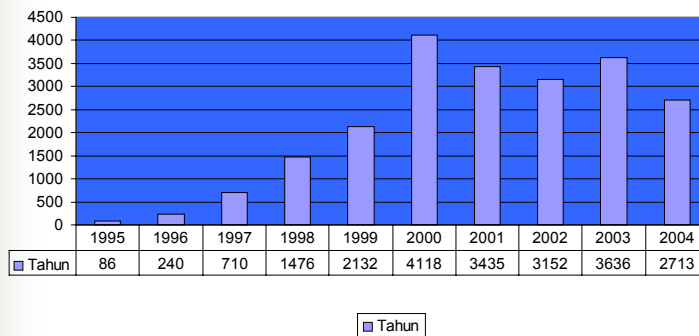
Sumber: DG Postel

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

35

AND DOMAIN IN INDONESIA



Sumber: DG Postel

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

36

Potential Internet Users

- ❖ 150.000 telephone/internet cafes
- ❖ 1600 Universities+
- ❖ 4000 Specialized High School (SMK)
- ❖ 10.000 High School (SMU)
- ❖ 10.000 Pesantren
- ❖ Business / offices
- ❖ **Total potential users: 61.0 millions**

Source: Ditjen Postel, Min. of Communications

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

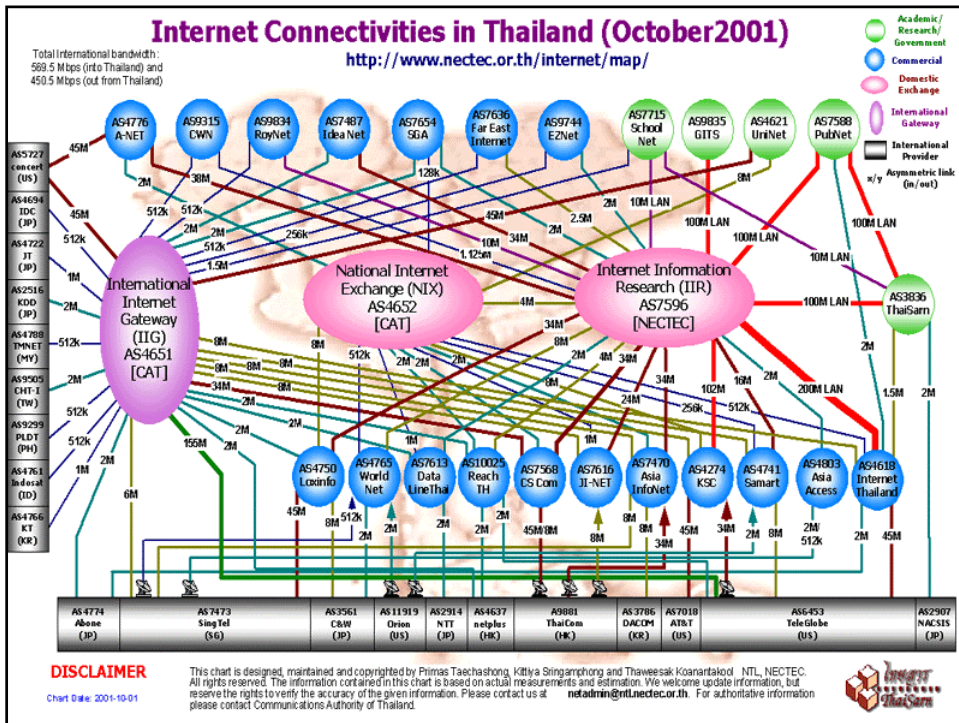
37

***BUT WE DON'T EVEN HAVE
THIS, YET.***

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

38



We have had.....

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

40

TKTI 735 : *REVISITED*

(7 TAHUN - 3 KEPPRES - 5 INSTANSI)

1. Keppres 30/1997 (Menko Produksi dan Distribusi)
2. Menkoekuwasbang
3. Kabinet Pembangunan VII (Menko Ekuin/Ka Bappenas)
4. Runtuhnya Orba – 1998 (Menpan)
5. Keppres 50/2000 (Menkominfo)
6. Keppres 9/2003 (Menkominfo)

So let's focus on..!!

THINK ABOUT...

- Developing new fixed lines (FWA is included)
- Utilizing the existing lines + Broad Band Access
- Reducing Tariff/cost for Internet usage
- Adding more access for people, everywhere
- Differentiating tariff for Educational Institution, Islamic boarding school (pesantren), churches, state and local library, and other (remote) community center.
- Using other data communication infrastructure such as PLN and PGN optical fiber for Internet
- Developing better cooperation with private (national and International)

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

45

AND THE ACTION ARE....

- ✓ Keep liberalizing the telecommunication sector, especially for the fixed line services;
- ✓ Introduce a new flat local call tariff to boost up Internet;
- ✓ Apply the tariff differentiation for all educational facilities;
- ✓ Allocate some portion of all State Educational Budget (20% of National Budget are for Education Sector) for ICT infrastructure from elementary, primary, secondary school and universities;

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

46

AND THE ACTION ARE....(2)

- ✓ Construct ICT facilities in scientific and research center;
- ✓ Strengthening all Diploma Program with ICT related curricula;
- ✓ Spend more budget on books and electronic libraries and electronic journal all over the world.
- ✓ Put constructing infrastructure as a priority in cooperation with private company.
- ✓ Keep the “Intellectual and Professional Rentseeker” away from ICT sector.

Indonesia in waiting,
still..

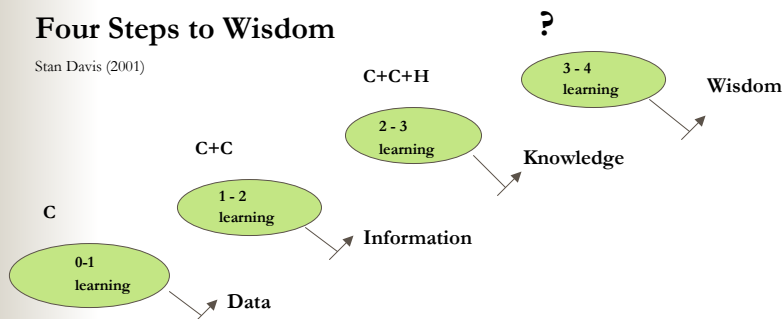
satriyaeddy@yahoo.com

47

PENUTUP

Four Steps to Wisdom

Stan Davis (2001)



Where is the life we have lost in living?

Where is the wisdom we have lost in knowledge?

Where is the knowledge we have lost in information?

T.S. Eliot, Choruses from "The Rock," I

(Collected Poems 1909-1919)

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

48



THANK YOU &
GOOD LUCK IN YOU CAREER

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

49



Eddy Satriya

- 1989 :Graduated from Bandung Institute of Technology (Telecommunication Engineering)
- 1997 :Graduated from University of Connecticut (MA in Economics)
- 1989-90: Program Management Consultancy (PMC-IV) for Telecommunication Development
- 1990-present: Working in Bappenas (The National Development Planning Agency). Currently is Deputy Director and Senior Infrastructure Economist.
- 1997- present: Visiting Lecturer in University of Indonesia, University of Pelita Harapan, and ITB
- 2003-present : Actively writes article and column in national papers and magazines.

Contact:

satriyaeddy@yahoo.com
esatriya@bappenas.go.id

Recent publications are available on

www.geocities.com/satriyaeddy
eddvsatriya.blogspot.com

Indonesia in waiting,
still..

satriyaeddy@yahoo.com

50