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# **One School One Computer Laboratory (OSOL) Program to Address Digital Divide in Indonesia**

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## In Line with Global Targets of WSIS

### Paragraph 6 of the Geneva Phase of WSIS Plan of Action

*".....premised on international cooperation, indicative targets may serve as global references for improving connectivity and access in the use of ICTs in promoting the objectives of the Plan of Action, to be achieved by 2015. These targets may be taken into account in the establishment of the national targets, considering the different national circumstances:*

- a) to connect villages with ICTs and establish community access points;*
- b) to connect universities, colleges, secondary schools and primary schools with ICTs;*
- c) ....."*

**OSOL Definition: "One School One Computer Laboratory"** program is a program of the Ministry of Communications and Information Technology jointly conducted with the Ministry of National Education and Ministry of Religious Affairs whose objective is to provide computer laboratories in all schools in Indonesia.



## Overcoming the Digital Divide in Indonesia

- During the Geneva Phase of WSIS, Indonesia made a commitment to connect all schools in Indonesia by the year 2015
- One of the key principles in the “Declaration of Principles” is to create ICT awareness
- ICT is seen as one of the solutions for creating a uniform level of education throughout the country. ICT is also seen as a way to overcome the problem of unavailability of sufficient teachers
- Besides the problem of *Digital Divide* Indonesia must be careful about the problem of *Learning Divide*. The understanding is that if there is a strong demand for ICT driven by the perception that there is a need to better the quality of life of people, then the top-down approach will be required less



## Indonesia: Situational Factors

- Indonesia is an archipelagic country with more than 17,000 islands, where there is a substantial rural area
- Connecting Indonesia is a challenging task, with communications technology not yet affordable for many
- The cost of distributing access and technology is too high in some areas and hence not economically attractive for private sectors
- Relatively low realization about national ICT spending levels and its effect
- Merge between Directorate Posts and Telecommunication under the Department of Communication and Information Technology: Convergence



# Indonesian School Figures

	1990/1991	2001/200
<b><u>Student</u></b>		
Primary School	26,348,276	25,850,84
Junior Secondary	5,686,118	7,466,45
Senior Secondary	3,700,667	5,051,64
<b><u>Institution</u></b>		
Primary School	147,066	148,51
Junior Secondary	20,605	20,84
Senior Secondary	11,490	12,30
<b><u>Teacher</u></b>		
Primary School	1,136,907	1,164,40
Junior Secondary	409,739	476,82
Senior Secondary	128,652	292,94

Source: DIKNAS (2003) National Plan of Action: Indonesia's Education for All 2003-1015



# Indonesia: Education Sector Challenges

- Financial Challenge
  - Government budget for education in 2004 is only 3.33%
  - 35.57% of total spending is for debt payment (interest and principal)
- Coordination Challenge
  - The implementation of the Law No 22/1999 on Regional Autonomy
- Population and Geographical Challenge
  - Indonesia is an archipelagic country with about 17,000 islands
  - Connecting Indonesia is a challenging task, with communications technology not yet affordable for many
  - The cost of distributing access and technology is too high in some areas and hence not economically attractive for private sectors
- Awareness Challenge
  - Awareness level regarding the need for ICT is relatively low
  - There is a lack of need for ICT in schools



# Indonesian ICT (Telecommunications) Indicators

End Year of	Fixed Line		Mobile Cellular		Internet	Multimedia*
	Capacity	Penetration %	Subscriber (Used capacity)	Penetration %	Subscriber (in million)	Subscriber (in Million)
2003	8.074.630	3,7	17.349.354	7,92	1,511	1,281
2004	8.726.066	3,9	22.667.678	10,20	2,228	1,914
2005	9.508.520	4,2	27.985.809	12,43	3,171	2,648
2006	10.454.115	4,6	33.303.941	14,59	4,371	3,637

multimedia service in general (aggregate of high speed internet, VoD, pay TV services.)

Source: POSTEL (2003)

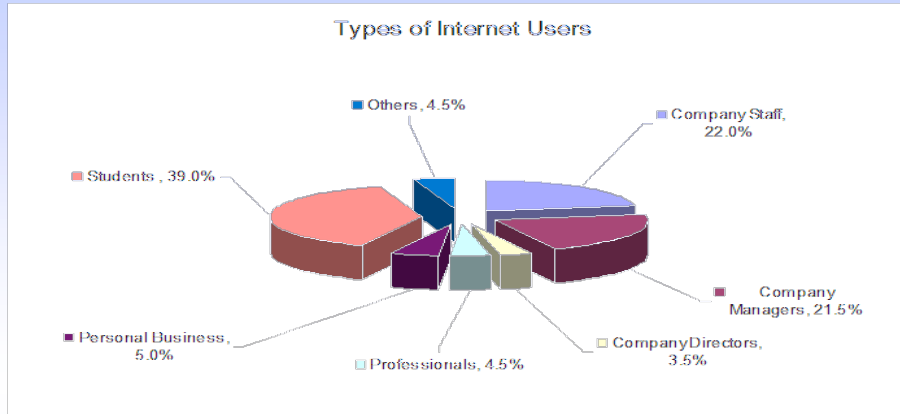
## INDONESIAN GOVERNMENT ICT SPENDING 2003

	<b>General</b>	<b>ICT</b>	<b>% of ICT/Gen</b>
<b>PAD</b>	<b>19,457.70</b>	<b>113.03</b>	<b>0.58%</b>
<b>BLN</b>	<b>12,146.40</b>	<b>98.82</b>	<b>0.81%</b>
<b>TOTAL</b>	<b>31,604.10</b>	<b>211.85</b>	<b>0.67%</b>

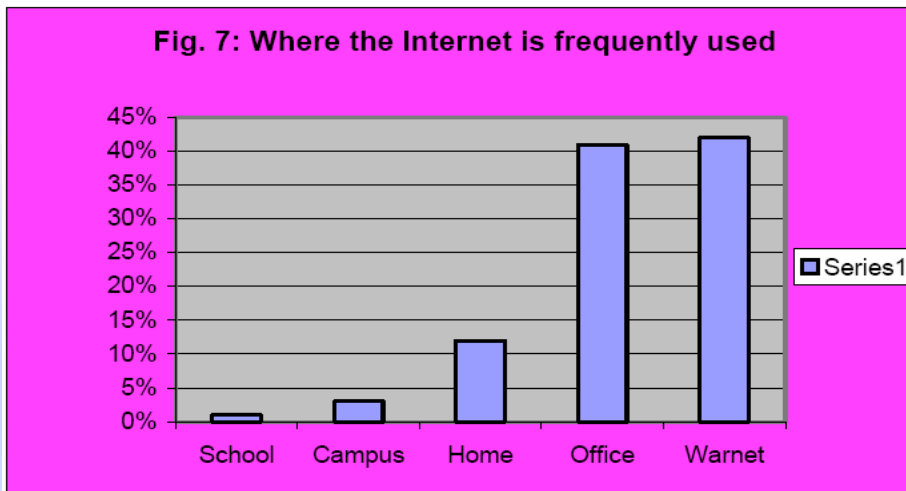
Source: BPPT (2003)



# ICT – Internet Indicators Indonesia



Source: BPPT (2003) Indikator Teknologi Informasi dan Komunikasi



Source: GIPI (2003) Indikator Teknologi Informasi dan Komunikasi



## Connectivity Figures

- Urban Teledensity 11 – 25 %
- Rural Teledensity 0.2 %
  - ± 43.022 villages without phones (64.4 % from 66.778 villages)
- Infrastructure Penetration :
  - 7.82 mio fixed line (± 3 % of population)
    - ± 24 mio mobile phones (5.5 %)

**Source : Ditjen Postel, 2004**



## One School One Computer Laboratory (OSOL) Program

- Program initiated through Ministry of Communication and Information Decree No: 17/KEP/M.KOMINFO/4/2003
- *OSOL is a program to reduce the problem of Digital Divide in Indonesia by targeting the young generation, particularly school-aged population*
- The OSOL initiative encourages schools to buy and build their own computer laboratories, however in case where they cannot afford it, the OSOL program will facilitate other stake-holders to assist the school(s)
- It is a Zero-Budget program
- By taking part in the OSOL program, schools will be able to enjoy the facilities offered by partners of the program

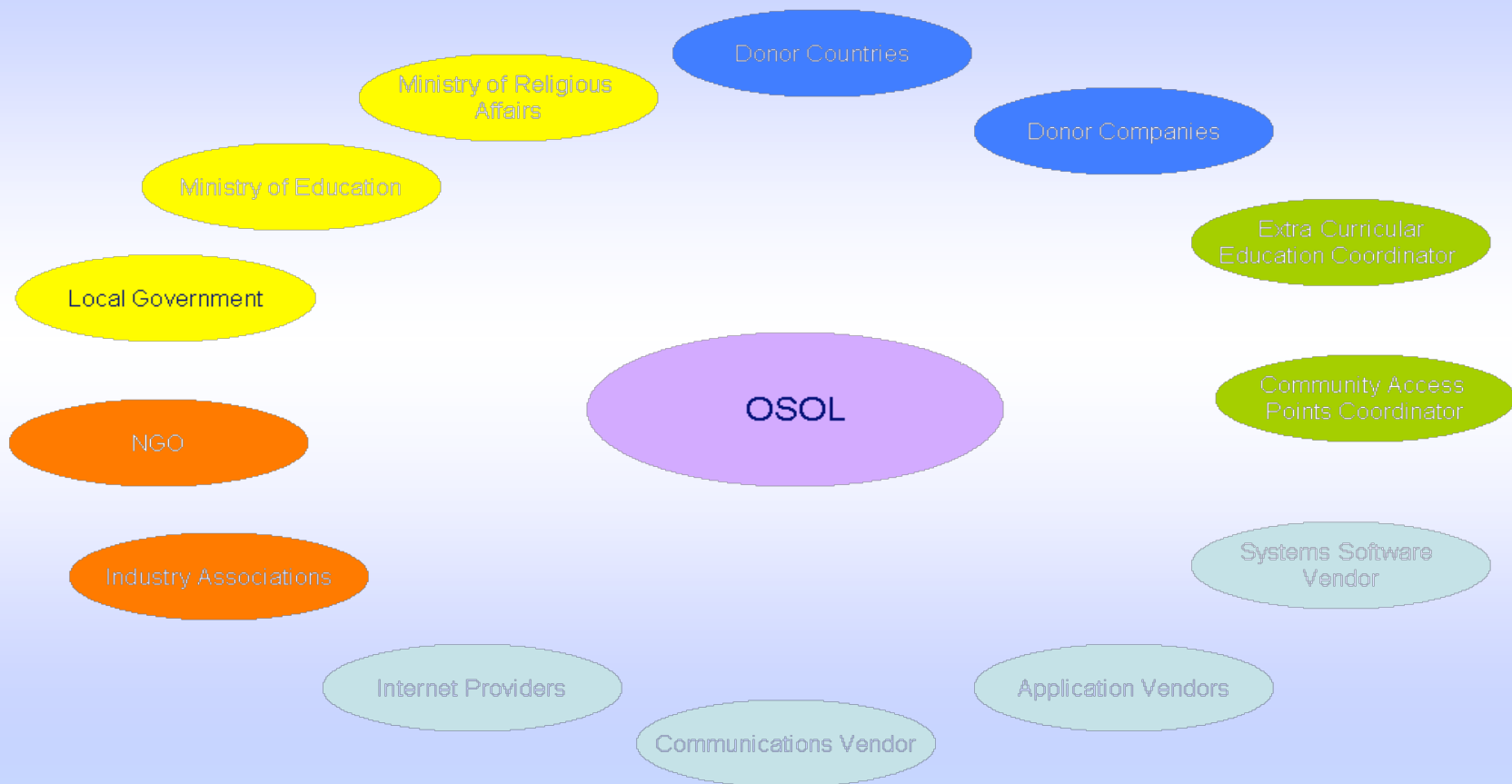


## Implementation Phases of OSOL

- Phase I: Basic Infrastructure
  - Ia : Computer and LAN (\*)
  - Ib : Lab Internet access (\*)
  - Ic : Web Presence
  
- Phase II: Computer Based Classroom
  - IIa : Computer-based Learning (\*)
  - IIb : Computer-based Teaching
  - IIc : Centralized Student Work Storage
  - IId : Teacher-Student On-line Monitoring
  
- Phase III: School Management
  - IIIa : Library Management
  - IIIb : Teacher Schedule Management
  - IIIc : Student Schedule Management
  - IIId : School Finance System
  - IIIe : School Logistic System
  - IIIf : Student Historical Management
  - IIIg : Remote Information Access
  - IIIh : Curriculum Monitoring Management
  
- Phase IV: Smart School
  - IVa: Video Monitoring School Facility
  - IVb: Wireless Access (School Hot Spot)
  - IVc: Distance Learning and Teaching



# Partnership of the OSOL Program





## Select Schools Part of OSOL

- 6 schools in Batam – Riau (Pilot Project)
- 3 schools in Tanah Datar, Padang – West Sumatra
- 2 schools in Samarinda – East Kalimantan
- 6 schools in Tenggarong – East Kalimantan
- 3 schools in Penajam Paser Utara – East Kalimantan
- 1 schools in Semper – North Jakarta
- 3 schools in Garut - West Java
- 4 schools in North Aceh
- 1 pesantren (islamic boarding school) in Peurlak – East Aceh
- 1 madrasah (islamic school) in Langsa – Aceh



# Assistance by Partners to Kick-Start the Program

## **Microsoft Indonesia**

- Facilitated used computers for the OSOL program
- Facilitated partnership with other stake-holders (NGO, etc.)
- Provided free Operating System for used computers usage for education
- Provided low-cost Office Application for used computers usage for education
- Facilitated and supported the coordination of empirical research
- Actively pushing other activities within the program

## **Telkom**

- As the Indonesian incumbent telecommunication provider
- Provided LAN for some of the computer laboratories of OSOL
- Provided Internet access in the school locations where OSOL is implemented
- Provided discounted access for school Internet usage

## **Pustekom (Under the Ministry of Education)**

- Provided content (basic) content for the OSOL implemented labs



## OSOL Success Measures

- Number of National Initiatives to push for ICT in schools
- Level of School Principal awareness on the importance of ICT for education
- Level of Teacher awareness regarding the importance of ICT for education
- Level of Student awareness regarding the importance of ICT in education
- Number of Research Collaborations in the area of ICT for education
- Number of School websites
- Number of Partners and Partnership in the OSOL initiative
- Number of Computer Laboratories in Schools
- Number of Schools Connected to the Internet



## Learning Experiences from OSOL

- Teachers need training. *"The program has made the students more advanced and have new knowledge. The situation puts us in a difficult situation where we have been the source of information"* – Teacher, Batai Island, 1<sup>st</sup> School receiving assistance from the OSOL program
- Regional Governments and School Boards **can** afford computers. There is more and more indication that regional governments and school boards can afford to implement computer labs in schools within their areas. The program pushes them to plan and implement where before it was seen as luxurious
- Vendors and Technology Providers have education and development programs which are untapped. By conducting the program, vendors and technology providers have come forward to offer their support through their internal programs. It is these programs which have helped this program to kicked-started.
- Many parties, particularly private sector wants to take part in creating a smarter nation. As the program rolled out and more people hear about the program, more and more companies are now taking part in the program by giving donations and other forms of assistance.
- Content is a problem. There is still a lack of content (learning software) for schools, particularly those that directly support the Indonesian education curriculum. Some of contents provided by the Ministry of Education (Pustekom) is deemed by some of the recipients of OSOL as "too easy", "not challenging".
- Lack of Empirical Data. Decisions in implementation (selecting schools, areas, etc.) had to be done based on input made by stakeholders. Preferably decisions were to be made based on existing empirical data which justifies the actions made.



## Program Challenges

- Identifying programs with same/similar objectives
- Creating a common strategy to instill ICT in the Indonesian education system
- Combining existing programs
- Bridging funds to buy equipments
- Aligning with international initiatives
- Facilitating affordable PCs
- Facilitating affordable Internet access
  - Telecommunications not available (limited) for most locations
  - To obtain partnership or collaboration is possible, but not national solutions
  - Telecommunications are expensive – causing sustainability issues
- Finding local content
- Creating sustainable models
- Finding a maintenance partner
- Creating the need hence creating the demand
- Conducting research and making available empirical data on existing locations
- Prioritization of schools and villages towards 2015





## Speaker Background

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