



# Introducing the DOI

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# Why We Want the DOI

- To track WSIS follow-up (para 28)
- Standard, yet flexible tool for benchmarking
- To assist gov'ts, policy-makers & academics in evaluating policies & their impact
- To monitor growth of new technologies

***To promote a rich & inclusive Information Society worldwide, in line with WSIS targets!***

# Why You Want the DOI

- ICT measurement (all authors!)
- Policy Assessment (Indonesia, Pakistan)
- Progress over time (Pakistan, Tunisia)
- Urban/rural divides (Egypt, India, Peru)
- Evolution of mobile v. fixed (Philippines)
- New technologies (Bulgaria, Korea)

***The DOI can be used to measure all of these!***



# Defining the Digital Opportunity Index

***Digital*** [ICTs] based on data in digits

***Opportunity*** Chance of advancement or progress

***Index*** A ratio derived from a series of observations and used as an indicator or measure

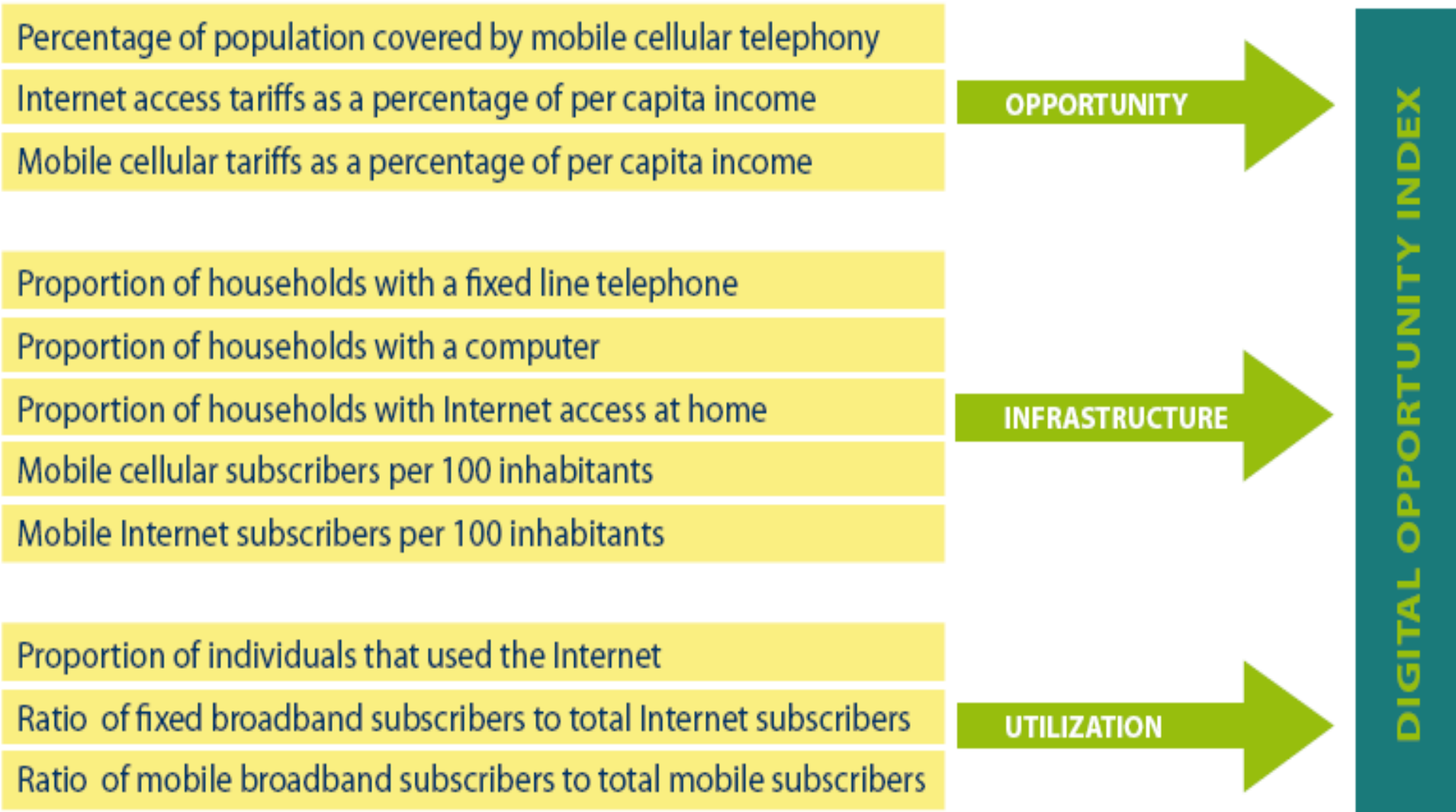
***Source*** *Abridged from Minges (2005), quoting webster.com.*



## Introducing the DOI

- One of two indices endorsed by WSIS
- Based on the 11 ICT core indicators defined by *Partnership on Measuring ICT for Development*
- Three clusters: Opportunity, Infrastructure, Utilization
- 180 economies – 2004/05
- 40 economies – 2001-2005
- Modular design, development-oriented, with mobile and fixed components

# Structure of DOI





UTILIZATION  
INFRASTRUCTURE  
OPPORTUNITY

# China 2005

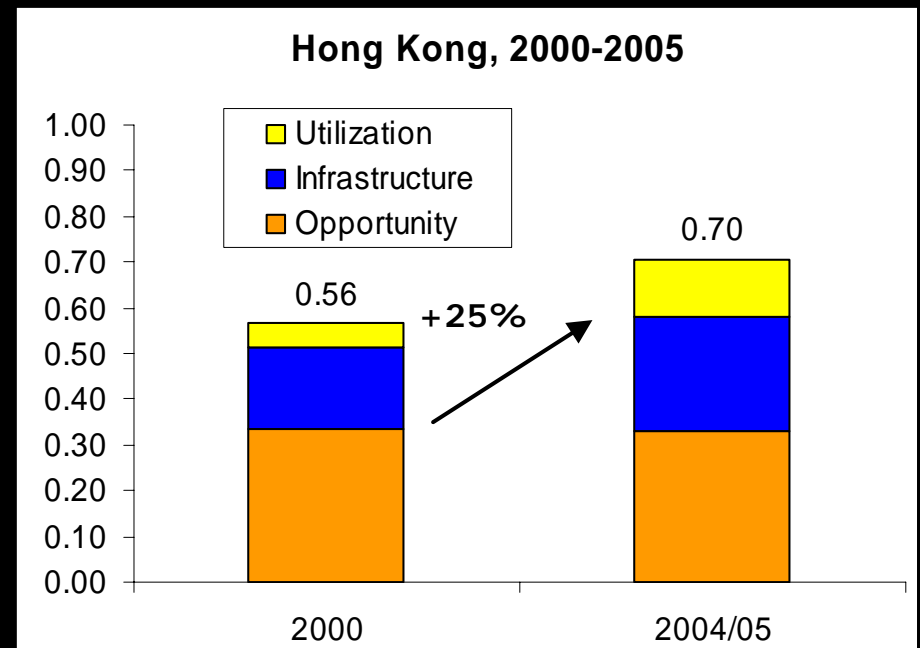
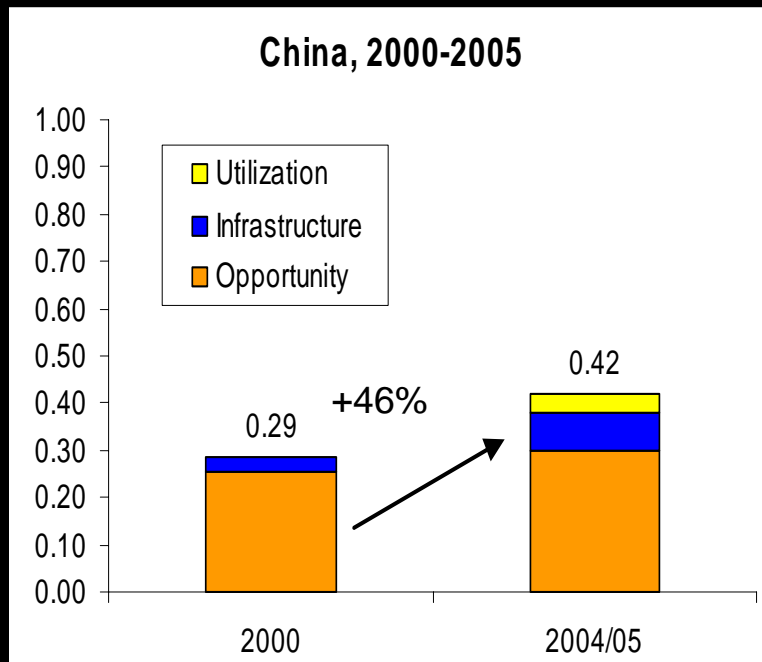
1. % population covered by mobile cellular telephony	80%	0.8	DOI	R
2. Internet access tariffs as a % of per capita income	9%	0/91	0.89	96
3. Mobile cellular tariffs as a % of per capita income	3%	0/97		
4. % households with a fixed-line telephone	68%	0.68		
5. % households with a computer	20%	0.2		
6. % households with Internet access at home	9%	0.09	0.25	69
7. Mobile cellular subscribers per 100 inhabitants	26%	0.26		
8. Mobile Internet subscribers per 100 inhabitants	1%	0.01		
9. % individuals that used the Internet	7%	0.07		
10. Fixed BB subscribers / total Internet subscribers	27%	0.27	0.11	66
11. Mobile BB subscribers / total mobile subscribers	0%	--		
<b>DIGITAL OPPORTUNITY INDEX</b>			<b>0.42</b>	<b>74</b>

## What the DOI can be used for

1. Comparing countries → *China HK*
2. Monitoring progress → *DCs*
3. Urban & Rural divide → *Egypt*
4. Gender divide → *Czech Rep.*
5. Mobile versus fixed → *Africa*
6. New areas for further work....



# 1. Comparing Countries – China & HK



## 2. Progress 2001-05: developing giants lead

Economy	DOI	DOI	Rank	Change	Drivers		
	2005	2001	2005	2001-5	O	I	U
1 India	0.29	0.17	119	73%	√		
2 China	0.42	0.29	74	46%		√	
3 Russia	0.44	0.32	60	41%		√	
4 Hungary	0.55	0.40	34	37%		√	√
5 Peru	0.38	0.28	85	37%	√	√	√
6 Indonesia	0.33	0.24	105	36%	√		
7 Brazil	0.43	0.32	71	35%	√	√	√
8 Poland	0.52	0.39	39	34%		√	√
9 Japan	0.71	0.54	2	33%			√
10 Venezuela	0.43	0.32	67	33%			√
11 Chile	0.52	0.40	40	32%			√
12 Egypt	0.38	0.29	90	32%		√	
13 Rep. of Korea	0.78	0.60	1	31%		√	√
14 Israel	0.66	0.50	13	31%			√
15 Spain	0.61	0.47	25	28%			√
<b>Average</b>	<b>0.50</b>	<b>0.37</b>	<b>90.5</b>	<b>37%</b>			
<b>40 economies</b>	<b>0.43</b>	<b>0.54</b>	<b>42.4</b>	<b>27%</b>			

O = Opportunity

I = Infrastructure

U = Utilisation

Source: ITU World  
Information Society  
Report.



## 3. Urban/Rural Divide - Egypt

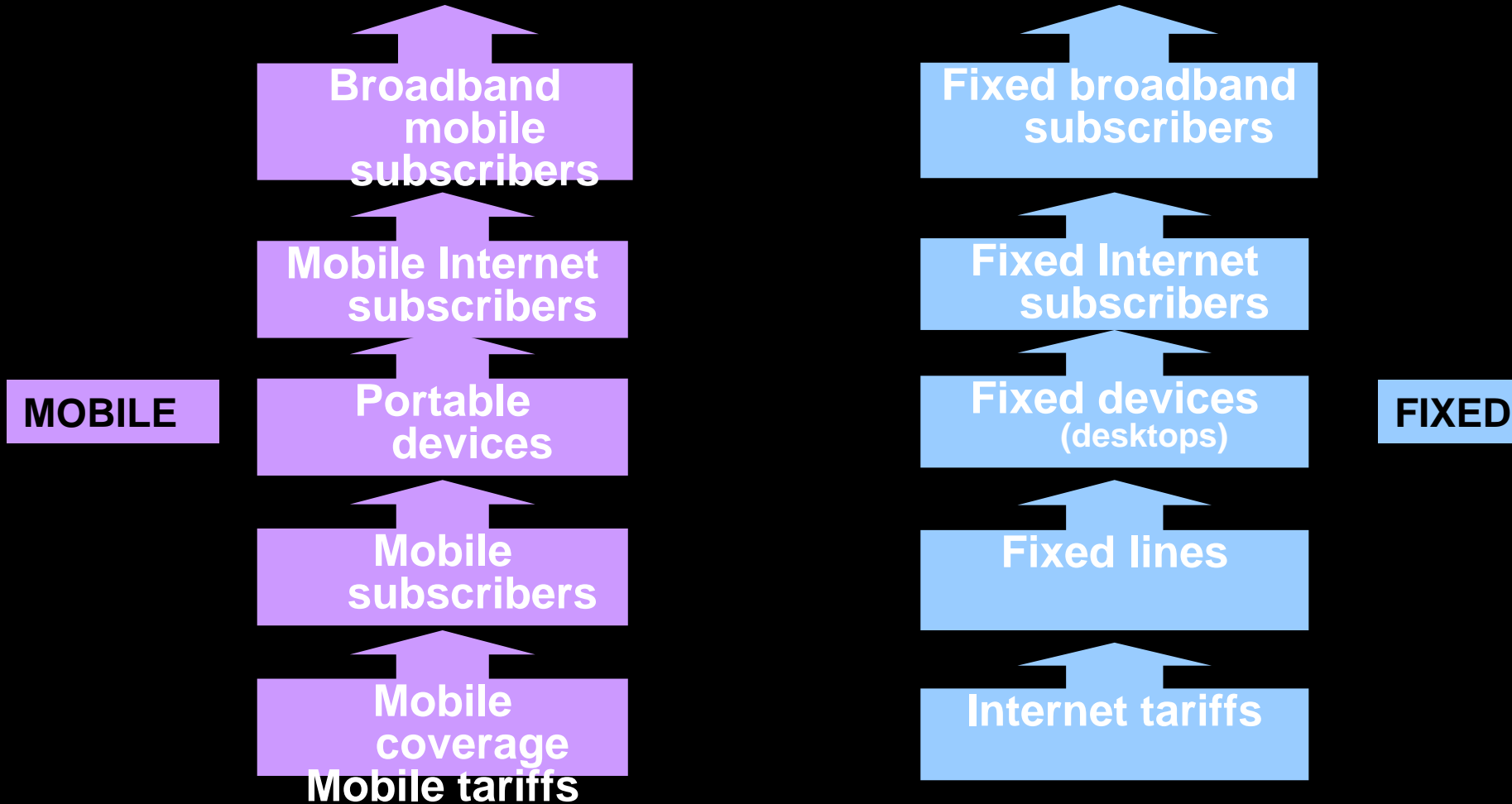
Egypt 2005: with kind permission of Dr. Shindy (2006)	2005	2005 urban	2005 rural	% of urban
<b>DIGITAL OPPORTUNITY INDEX</b>	0.41	0.47	0.35	76
<b>Opportunity</b>	0.97	0.97	0.95	97
Percentage of population covered by mobile cellular telephony	0.98	1.00	0.95	95
Internet access tariffs as a percentage of per capita income	0.96	0.96	0.94	98
Mobile cellular tariffs as a percentage of per capita income	0.96	0.96	0.95	98
<b>Infrastructure</b>	0.22	0.37	0.09	25
Proportion of households with a fixed line telephone	0.61	0.99	0.29	29
Mobile cellular subscribers per 100 inhabitants	0.19	0.34	0.08	24
Proportion of households with Internet access at home	0.11	0.18	0.05	25
(Mobile) Internet subscribers per 100 inhabitants	0.02	0.04	0.01	24
Proportion of households with a computer	0.16	0.31	0.04	14
<b>Usage</b>	0.04	0.06	0.03	45
Number of individuals that used the Internet	0.07	0.13	0.03	22
Ratio of Broadband Internet subscribers to Internet subscribers	0.06	0.06	0.06	100
Ratio of Broadband mobile subscribers to mobile subscribers	0.00	0.00	0.00	



## 4. Gender Divide – Czech Rep.

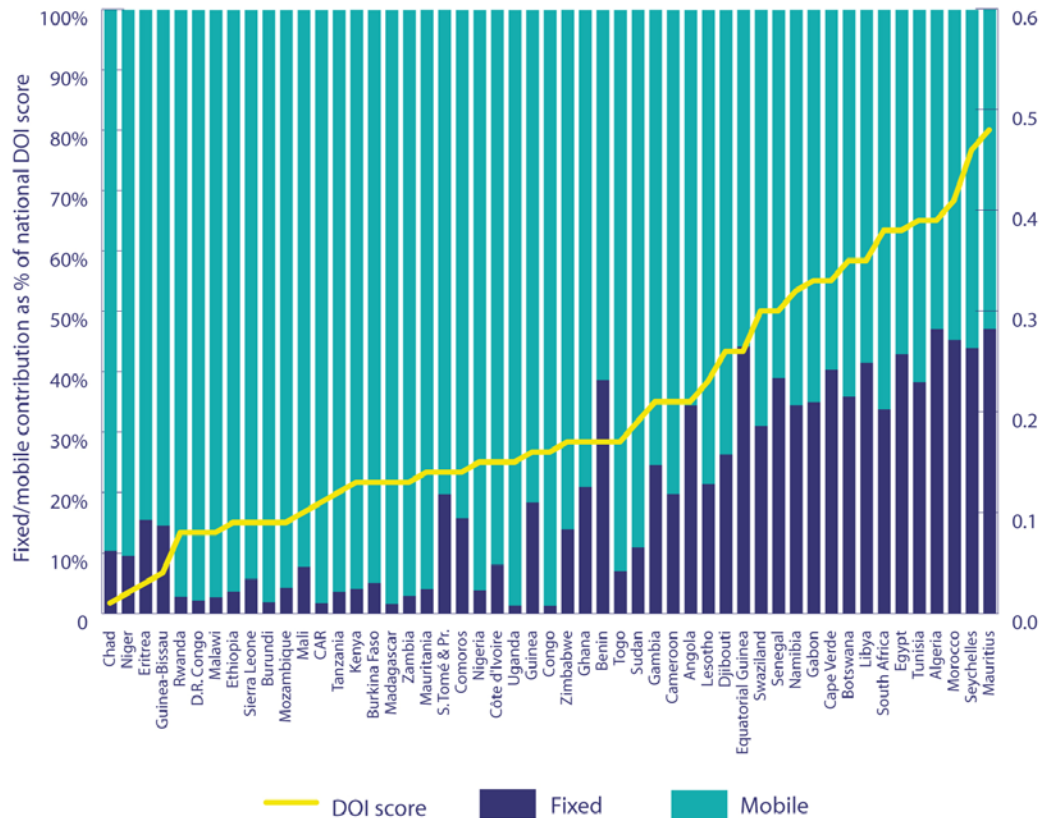
Czech Republic (2005)	2005	Women	Men	% of Men
<b>DIGITAL OPPORTUNITY INDEX</b>	<b>0.51</b>	<b>0.53</b>	<b>0.56</b>	<b>95</b>
<b>Opportunity</b>	<b>0.98</b>	<b>0.98</b>	<b>0.99</b>	<b>99</b>
Percentage of population covered by mobile cellular telephony	0.99	0.99	0.99	100
Internet access tariffs as a percentage of per capita income	0.98	0.98	0.99	99
Mobile cellular tariffs as a percentage of per capita income	0.97	0.97	0.99	98
<b>Infrastructure</b>	<b>0.42</b>	<b>0.38</b>	<b>0.42</b>	<b>92</b>
Proportion of households with a fixed line telephone	0.62	0.62*	0.62*	100
Mobile cellular subscribers per 100 inhabitants	1.00	0.72	0.80	88
Proportion of households with Internet access at home	0.19	0.22	0.25	88
(Mobile) Internet subscribers per 100 inhabitants	0.01	0.016	0.033	48
Proportion of households with a computer	0.30	0.35	0.39	90
<b>Usage</b>	<b>0.13</b>	<b>0.17</b>	<b>0.20</b>	<b>85</b>
Number of individuals that used the Internet	0.29	0.29	0.35	83
Ratio of Broadband Internet subscribers to Internet subscribers	0.08	0.24	0.26	92
Ratio of Broadband mobile subscribers to mobile subscribers	0.00	0.00	0.00	--

# 5.Fixed/Mobile Paths



# 5. Mobile versus fixed

Mobile and fixed contribution to DOI scores in Africa, 2005



## 6. New Areas for Further Work

- A useful tool for policy analysis.
- Impact of ICTs on growth & competitiveness – Sectoral analysis - how ICT-intensive?
- Producing/consumer use of ICTs (e.g. U.S.)
- Growth projections?
- Policy Matrix – impact of policies.

***We are open to your ideas***

## Conclusions – Virtues of the DOI

- Standard, but flexible indicators
- Relevant to developing countries
- Forward-looking (Philippines)
- Can be used for many different applications.

### **BUT**

- *How can we adapt the DOI to cope with innovation & technological change?*





***This is what we hope you will tell us!***



# Thank you

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