



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION
DEVELOPMENT BUREAU**

**Document 027-E
10 October 2006
Original: English**

5TH WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, GENEVA, 11-13 OCTOBER 2006

SOURCE: MEF, ITU

TITLE: ICT Opportunity Index

ICT OPPORTUNITY INDEX
FIFTH WORLD TELECOMMUNICATIONS
INDICATORS MEETING
11-13, OCTOBER 2006, ITU, GENEVA

R.JOSHI
HEAD
MARKET, ECONOMICS AND
FINANCE UNIT
BDT/ITU



**ICT OPPORTUNITY – AN ENGINE
FOR GROWTH**

- ICT PLAYS AN IMPORTANT ROLE IN ECONOMIES – CONTRIBUTION OF ICT TO DEVELOPMENT AND SOCIO-ECONOMIC GROWTH HAS BEEN WELL DOCUMENTED
- EXPANDING ICT OPPORTUNITY IS A BROADBASED DEVELOPMENTAL GOAL – THIS IS A WELL RECOGNISED ASPECT OF GROWTH STRATEGIES OF ALL COUNTRIES



MEASURING ICT DEVELOPMENT

- DEGREE OF ICT USAGE AND ICT LED INVESTMENT – POSITION AND EXTENT VARIED ACROSS COUNTRIES –
- MEASUREMENT OF ICT DEVELOPMENT , ITS EXTENT AND ITS EVOLUTION IS A KEY INDICATOR SOUGHT BY POLICY MAKERS, REGULATORS, INVESTORS AND OTHER STAKEHOLDERS-MEASURING THE DIGITAL DIVIDE IS A KEY INFORMATION INPUT



ITU MANDATE

- ITU S MANDATE IS TO CONTRIBUTE AND ENHANCE THE EFFORTS TOWARDS MEASUREMENT OF ICT DEVELOPMENT - SO PROVIDE A BASIS FOR EVIDENCE BASED POLICY MAKING AND STRATEGY DIRECTION
- ITU DERIVES ITS MANDATE TOWARDS THIS EFFORT THROUGH RESOLUTIONS DIRECTED BY MEMBER STATES



Mandates

MANDATE FROM WTDC

- RESLUTION 8- To further develop and improve benchmarking efforts ,including ICT Opportunity Index
- To encourage countries to collect information illustrating national digital divides

MANDATE FROM WSIS

- PARA 28- To develop and launch a composite ICT index



CONCEPTUAL ASPECTS- MEASURING ICT DEVELOPMENT AS A COMPOSITE INDEX: ICT OPPORTUNITY INDEX

- To begin with, the ICT-OI is meant to be an “instrument that would quantify the Digital Divide and systematically monitor its evolution”
 1. This evolution meant,to measure the digital divide across economies at a given point in time
 2. And its evolution over time

THIS WAS THE BACKGROUND FOR THE ICT-OI
THE ICT OPPORTUNITY INDEX



FRAMEWORK OF ICT-OI INDEX

1. User –friendly framework:
 - i. Places an emphasis on developing economies
 - ii. Relies on a modeling approach that yields policy-relevant results
 - iii. Focuses on ICT's but is broader than scope than pure connectivity measures.
 - iv. Broad based in its interpretation of OPPORTUNITY as being *enabled* to access ICT services



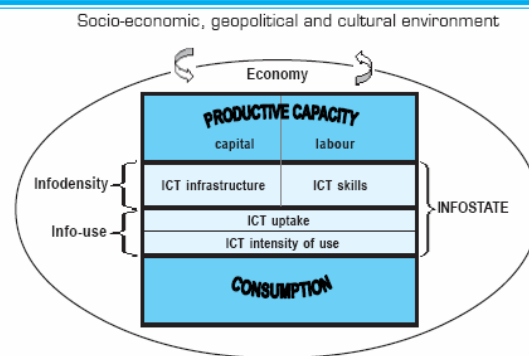
SCOPE OF INDEX

- THE SCOPE OF THE INDEX WAS TO BE *INCLUSIVE* FROM A DEVELOPMENTAL PERSPECTIVE- EMBRACING THE WIDE SPAN AND DIFFERENTIATED LEVELS OF ICT USAGE AND INVESTMENTS
- THE INDEX SOUGHT TO MEASURE *THE INFO STATE*
- DIGITAL DIVIDE AS THE RELATIVE DIFFERENCE IN INFOR STATES IN THE ECONOMY



OVERALL FRAMEWORK

Figure 1



COMPONENTS OF INFO STATE

Infodensity = sum of all ICT stocks (capital and labour)
Info-use = consumption flows of ICTs/period
Infostate = aggregation of infodensity and info-use



INFOSTATE

Infodensity

Networks

- Main telephone lines per 100 inhabitants
- Wiring lines/mainlines
- Digital lines/mainlines
- Cell phones per 100 inhabitants
- Cable TV subscriptions per 100 households
- Internet hosts per 1,000 inhabitants
- Secure servers/Internet hosts
- International bandwidth (Kbs per inhabitant)

Skills

- adult literacy rates
- gross enrolment ratios
 - primary education
 - secondary education
 - tertiary education


Info-use

Uptake

- TV equipped households per 100 households
- Residential phone lines per 100 households
- PCs per 100 inhabitants
- Internet users per 100 inhabitants

Intensity

- Broadband users/Internet users
- International outgoing telephone traffic minutes per capita
- International incoming telephone traffic minutes per capita



COUNTRY PROFILES

- REPRESENTATION OF COUNTRIES – THROUGH A BENCHMARKED AVERAGE- CALLED HYPOTHETICA /PLANETIA OF THE INFO STATE
- PROVIDES THE CATEGORIZATION OF COUNTRIES AS PER THE LIST BELOW
 - A) HIGH
 - B) ELEVATED
 - C) INTERMEDIATE
 - D) MODERATE
 - E) LOW




Table 3.1 Infostates, 2003

	Infostate	Infodensity	Info-use
	<i>indices</i>		
HIGH (23 economies)			
Denmark	254.9	246.1	264.0
Sweden	251.1	242.4	260.1
Switzerland	250.7	219.0	286.9
Netherlands	242.5	238.5	246.6
Norway	239.5	234.3	244.8
Canada	235.0	201.4	274.1
United States	231.8	212.3	253.2
Finland	228.4	238.4	218.8
Hong Kong, China	227.9	185.2	280.5
Iceland	226.7	200.5	256.3
Singapore	225.7	180.1	282.7
Luxembourg	218.9	194.5	246.3
Belgium	217.8	207.5	228.7
United Kingdom	214.9	209.7	220.2
Austria	210.6	203.4	218.1
Australia	209.6	197.5	222.5
Korea (Rep.)	208.6	171.1	254.2
Germany	201.9	186.1	219.2
Japan	198.9	176.7	223.9
Ireland	197.7	189.7	206.1
Israel	194.0	177.5	212.0
France	193.7	181.2	207.1
New Zealand	192.1	177.4	208.0



ELEVATED (24 economies)

Estonia	175.7	159.8	193.2
Slovenia	174.7	165.7	184.2
Malta	174.6	150.1	203.0
Italy	169.2	151.1	189.6
Spain	168.0	156.2	180.8
Portugal	162.2	154.7	170.0
Cyprus	160.0	132.7	192.9
Macao, China	149.9	105.4	213.3
Czech Republic	149.7	160.2	139.8
Hungary	147.2	159.3	135.9
Qatar	143.8	131.7	157.1
Barbados	139.5	96.5	201.8
Latvia	135.8	136.0	135.7
Slovak Republic	135.6	142.4	129.0
Poland	131.8	135.3	128.4
Croatia	130.2	117.3	144.5
Lithuania	128.1	132.6	123.7
Chile	127.7	118.7	137.5
Bahrain	127.3	97.8	165.7
Greece	127.0	140.8	114.5
United Arab Emirates	126.9	107.6	149.6
Uruguay	118.3	126.4	110.8
Argentina	115.0	124.4	106.2
Brunei Darussalam	114.5	121.4	108.1
HYPOTHETICA	113.4	110.3	116.6
PLANETIA	113.4	110.4	116.4



MODERATE (34 economies)

Fiji	69.6	66.9	72.4
Ukraine	68.6	82.0	57.4
Iran	66.0	47.3	92.1
Oman	65.9	55.0	79.0
Ecuador	65.6	61.3	70.1
Guyana	64.5	62.6	66.4
Georgia	63.5	67.2	60.0
Samoa	62.5	82.4	47.4
Namibia	60.8	62.9	58.8
Philippines	60.5	66.1	55.5
Armenia	59.1	56.4	61.9
Tunisia	58.0	46.7	72.0
Bolivia	57.6	66.9	49.6
Paraguay	57.5	68.7	48.0
Mongolia	54.8	52.2	57.5
Botswana	53.5	64.1	44.6
Egypt	52.4	44.4	61.9
Kyrgyzstan	52.3	52.8	51.8
Guatemala	52.1	59.1	45.8
Nicaragua	48.5	50.9	46.3
Albania	46.4	54.3	39.7
Indonesia	44.6	48.4	41.0
Gabon	44.1	47.2	41.2
Morocco	43.9	40.8	47.2
Syria	42.8	34.8	52.6
Zimbabwe	41.9	38.9	45.2
Honduras	41.9	42.1	41.7
Cuba	40.6	35.2	46.8
Algeria	39.7	36.0	43.7
Sri Lanka	37.8	45.1	31.6
Viet Nam	37.0	31.1	44.1
Togo	34.9	29.1	41.8
Gambia	33.9	34.8	33.1
India	33.7	34.5	33.0

**LOW (32 economies)**

Djibouti	31.2	32.2	30.2
Senegal	31.0	25.8	37.4
Côte d'Ivoire	30.7	31.6	29.9
Sudan	29.1	27.6	30.7
Pakistan	26.9	26.2	27.6
Kenya	25.7	34.0	19.4
Yemen	25.7	23.0	28.6
Mauritania	22.7	26.0	19.8
Lao P.D.R.	22.7	30.5	16.8
Papua New Guinea	22.5	21.1	23.9
Zambia	22.3	27.5	18.1
Ghana	21.8	24.9	19.2
Cameroon	21.1	26.6	16.8
Benin	21.0	24.8	17.9
Nigeria	19.6	20.7	18.6
Tanzania	18.3	23.1	14.6
Nepal	18.2	19.7	16.8
Bangladesh	17.5	20.6	15.0
Cambodia	16.9	23.4	12.3
Mozambique	15.9	22.6	11.1
Madagascar	15.4	21.4	11.1
Uganda	15.0	24.3	9.2
Guinea	14.6	17.3	12.4
Burkina Faso	12.6	14.4	11.0
Angola	12.2	12.5	12.0
Malawi	12.2	18.2	8.1
Mali	12.1	14.9	9.8
Eritrea	11.9	9.7	14.6
Myanmar	10.7	14.7	7.7
Central African Rep.	8.8	11.5	6.8
Ethiopia	8.6	9.9	7.4
Chad	7.9	10.8	5.9



UNDERSTANDING REASONS FOR DIGITAL DIVIDE

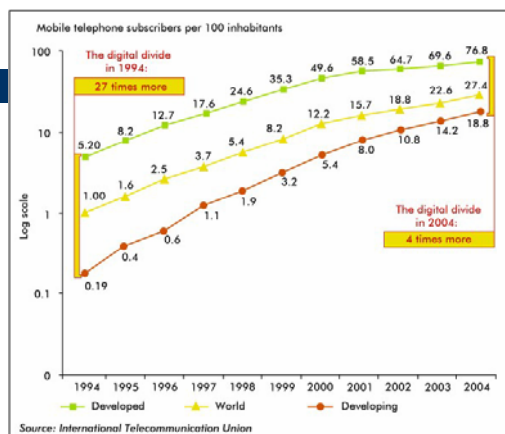
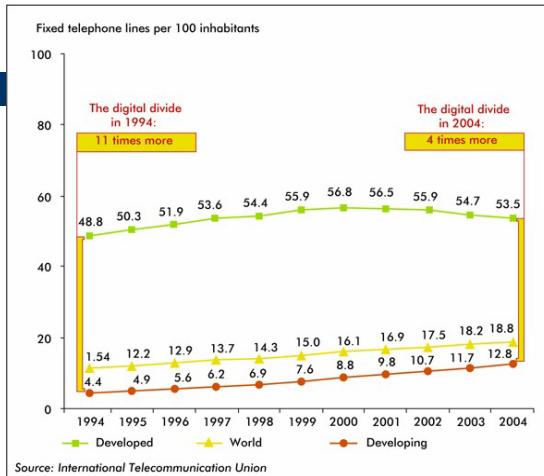
- A) NETWORKS ARE A MAJOR CONTRIBUTOR FOR THE DIGITAL DIVIDE
- B) SKILL INDICATORS ALSO CONTRIBUTE AS ICT SKILLS MOVE WITH THE PERVASIVENESS OF ICT DEVELOPMENT
- C) ICT UPTAKE – WITH INDICATORS SUCH AS TV, INTERNET ETC, THESE AFFECT THE SPAN OF ICT OPPORTUNITY
- D) ICT INTENSITY OF USE MEASURED BY TRAFFIC AND BROADBAND USAGE IS UNEVEN IN ITS DISTRIBUTION AND IMPACTS INEQUALITY IN ICT OPPORTUNITY

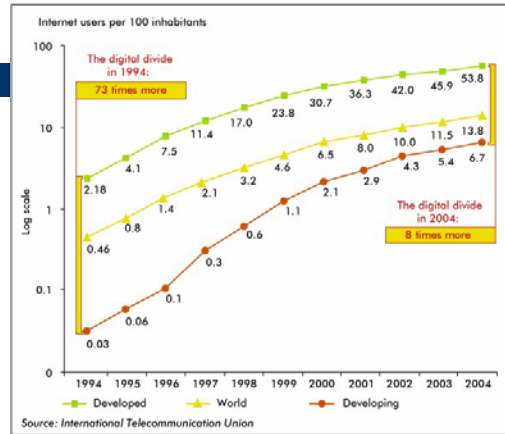


ICT OI –TIMING

- EXERCISE WAS DONE FOR 2003 FOR 139 ECONOMIES
- SITUATION HAS CHANGED DRAMATICALLY SINCE THEN
- GROWTH IN FIXED, MOBILE BROADBAND PENETRATION HAS NARROWED THE DIGITAL DIVIDE







- INDICATORS AND MEASURES NEED TO BE RE-EXAMINED IN THE LIGHT OF CHANGING TRENDS
- MEF UNIT PLANS AN UPDATION OF THE INDEX WITH 2005 DATA
- 2003 Results available at: www.itu.int/ict



THANK YOU

Joshi@itu.int

R.JOSHI

HEAD

Market, Economics and Finance Unit

ITU

