

Towards a comprehensive model of the digital economy

comprehensive digital measuring finger development

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Chicago ICTVillage and

EU-Pepper
 Peppercorn
 Bibliography
 Consortium
 Technology markets



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Qualitative analysis

- 55 models of the Digital Economy: descriptive and theoretical models, composite indices, sets of indicators
- Count of different indicators used (1578) and number of time series
- Identification of categories and iterative category reallocation of indicators

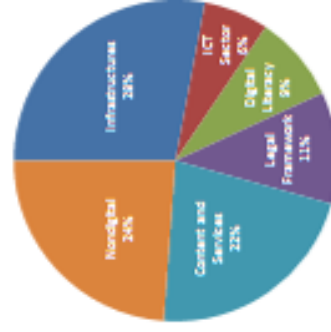
For each model:

- Description: who, when, where, why, how
- Main publications
- Distribution of indicators by category (how many indicators/category)
- Fitness of model in 360° Digital Framework
- Critique

3

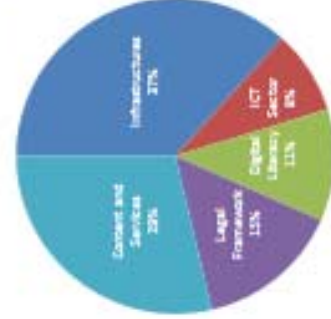
The state of world indicators and indices

BASED ON THE NUMBER OF INDICATORS IN EACH CATEGORY (% OF TOTAL INDICATORS)



Distribution of the primary categories - including non-digital indicators

- Bias towards infrastructures
- Bias towards existence of contents/services (vs. usage)
- Analogous "noise"

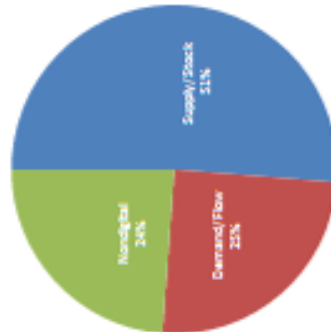


Distribution of the primary categories - excluding non-digital indicators

5

The state of world indicators and indices

BASED ON THE NUMBER OF INDICATORS IN EACH CATEGORY (% OF TOTAL INDICATORS)



Distribution of the primary categories - including non-digital indicators

- Bias towards supply-side indicators
- Need to measure demand-side variables: affordability, usage, policies

Distribution of the primary categories - excluding non-digital indicators

Telecom vs. e-Readiness models

BASED ON THE NUMBER OF INDICATORS IN EACH CATEGORY (% OF TOTAL INDICATORS)

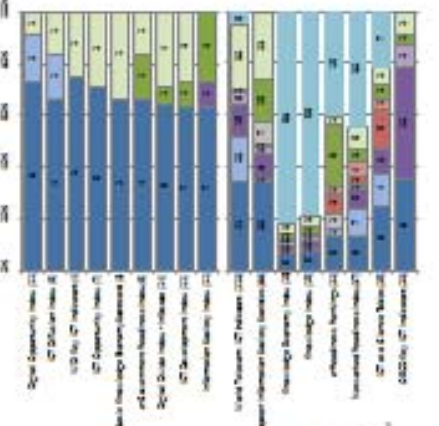
Two main conceptions of the Digital Economy:

- Mainly infrastructures (Telecom approach)
- Part of a broader concept (e-readiness approach)

Inconvenients:

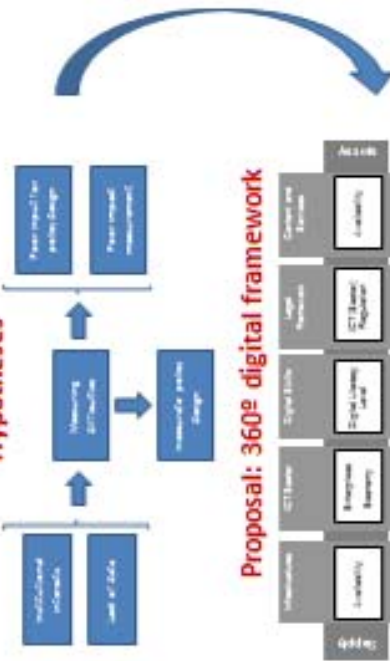
- Lacks the human factor out
- Difficult to tell analogue from digital evolution

→ 360° digital framework



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Hypotheses



Proposal: 360° digital framework

Category	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator	Indicator
Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure	Infrastructure
Content and Services	Content and Services	Content and Services	Content and Services	Content and Services	Content and Services	Content and Services	Content and Services	Content and Services	Content and Services	Content and Services	Content and Services
Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework	Legal Framework
Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector	Digital Library Sector
ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector	ICT Sector
Non-digital	Non-digital	Non-digital	Non-digital	Non-digital	Non-digital	Non-digital	Non-digital	Non-digital	Non-digital	Non-digital	Non-digital

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Information Society Models

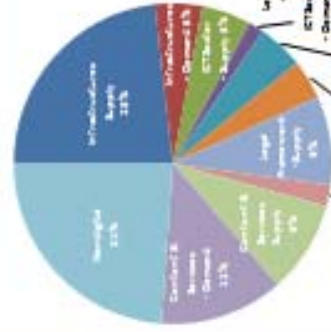
BASED ON THE NUMBER OF INDICATORS IN EACH CATEGORY (% OF TOTAL INDICATORS)

Model	Infrastructure	Content and Services	Legal Framework	Digital Library Sector	ICT Sector	Non-digital
Model 1	15%	25%	15%	15%	15%	30%
Model 2	25%	15%	15%	15%	15%	30%
Model 3	35%	15%	15%	15%	15%	20%
Model 4	45%	15%	15%	15%	15%	10%
Model 5	55%	15%	15%	15%	15%	0%

4

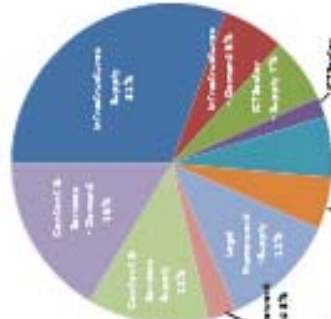
The state of world indicators and indices

BASED ON THE NUMBER OF INDICATORS IN EACH CATEGORY (% OF TOTAL INDICATORS)



Distribution of the secondary categories - including non-digital indicators

- Bias towards infrastructures
- Bias towards existence of contents/services (vs. usage)
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Distribution of the secondary categories - excluding non-digital indicators

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8

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comprehensive digital
measuring
pointing moon wrong finger
development

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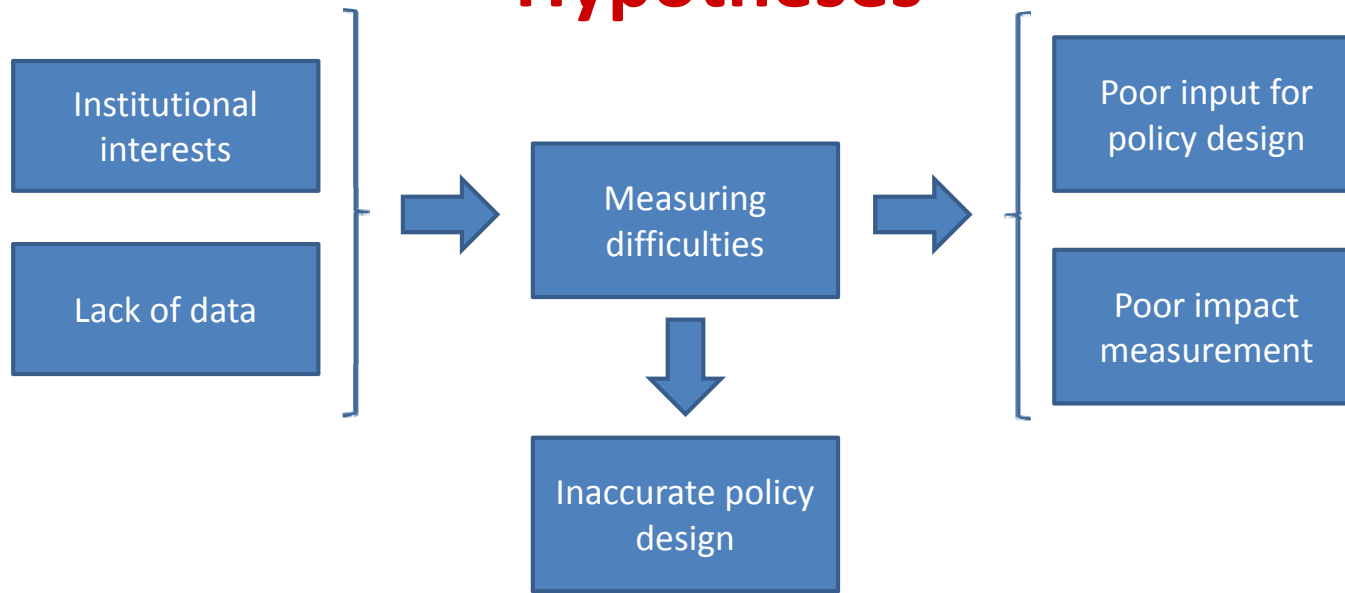
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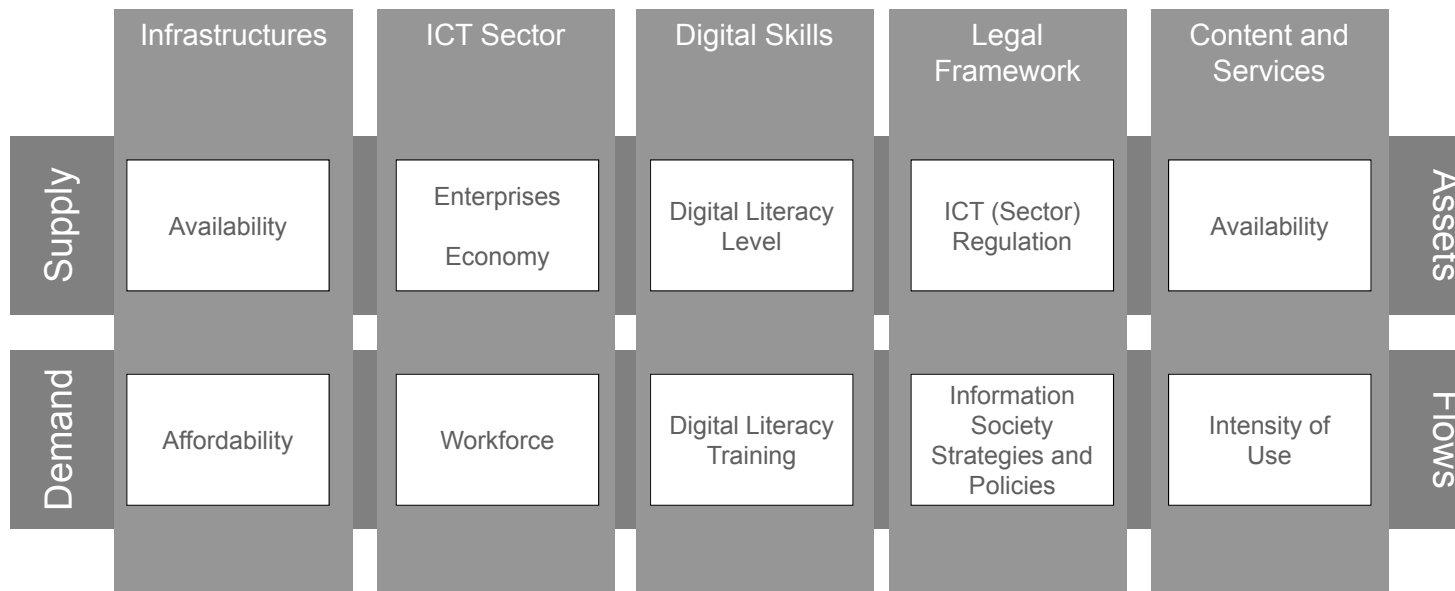
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Bibliography
Contact Author

<http://w.ictlogy.net/1846>

Hypotheses



Proposal: 360° digital framework



Qualitative analysis

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Information Society Models

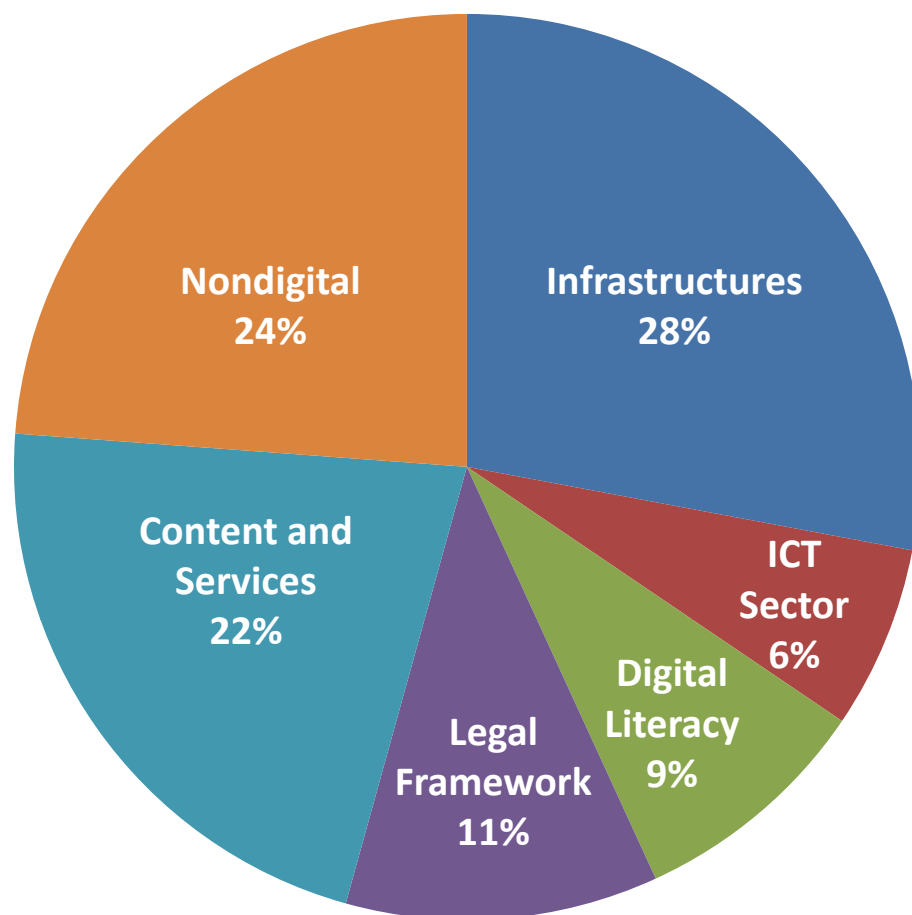
Periodicity: NO: never measured; NP: non periodical;
 A: annual; 3Y: every three years;
 6M: half-yearly; 3M: every 3 months.
 #C: number of economies covered.
 #S: number of time series. ND: nondigital

	1a	2a	3a	4a	5a
	1b	2b	3b	4b	5b

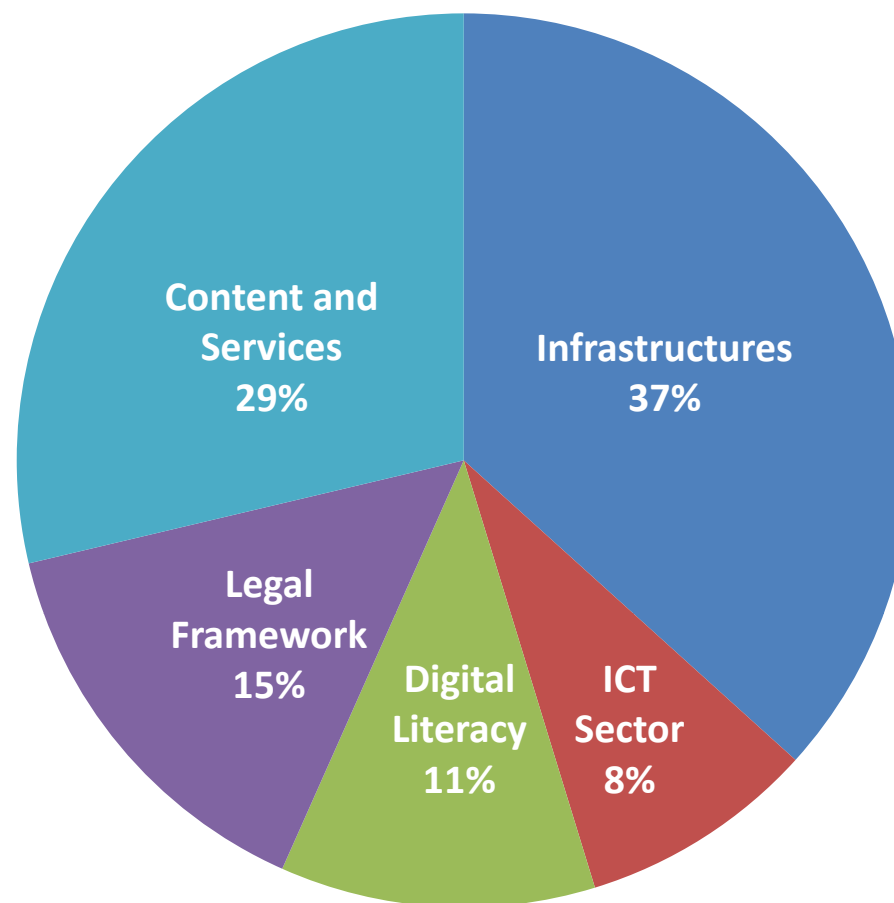
Name	Promoter	Period.	#C	From	To	# C	# S	1a	1b	2a	2b	3a	3b	4a	4b	5a	5b	ND	Σ
African ICT e-Index	Research ICT Africa	NP	16	2002	2007	16	6	8	1							5	3	17	
ArCo	Archibugi & Cocco	NP	86	2000	2000	86	1	1						1		1	5	8	
Basic Knowledge Economy Scorecard	The World Bank	A	140	1995	2008	140	14	2								1	11	14	
Broadband Performance Index	European Commission	NP	28	2008	2008	28	1	4	3			1		1		1	8	18	
Comprehensive Metric	Barzilai-Nahon, K.	NO	0			0	1	3	3	1		2	1	1	2	3	3	8	27
Connectivity Scorecard - Efficiency and Resource Driven Economies	Waverman et al.	A	25	2007	2008	25	2	10					1			4	7	2	23
Connectivity Scorecard - Innovation Driven Economies	Waverman et al.	A	25	2007	2008	25	2	9			1	1	2			3	11		27
Core ICT Indicators	Partnership on Measuring ICT for Development	NO	0			0	1	18	1	3	1		8			4	9	4	48
Core ICT Indicators for the ECA region	Economic And Social Commission For Western Asia	N	53			53	1	24	1	4	1	1	5	2		14	3	7	62
Core ICT Indicators for the ESCWA region	Economic And Social Commission For Western Asia	N	13			13	1	18	4	2	1	1	4		2	9	1	1	43
Digital Access Index	International Telecommunication Union	NP	146	2002	2002	146	1	4	1								1	2	8
Digital Divide Index	SIBIS	NP	25	1997	2002	25	6										3		3
Digital Divide Index - Infostate	Orbicom	A	191	1995	2003	191	9	9								1	4	6	20
Digital Opportunity Index	International Telecommunication Union	A	181	2005	2006	181	2	8	2								1		11
Digital Planet	World Information Technology and Services Alliance	A	75	2001	2007	75	7	2		2						15	1	3	23
E-Commerce Readiness Assessment Guide	APEC e-Commerce Readiness Initiative	NO	0			0	1	22	6	8		1	8	28	8	5	7	13	106
E-Commerce Readiness in East Asian APEC Economies	Bui, T. X., Sebastian, I. M., Jones, W. & Naklada, S.	NP	10	2001	2001	10	1	6	1	3			2		2			39	53
e-Government Readiness Index	UNPAN	3A	192	2002	2007	192	6	4								1	1	2	8
e-Participation Index	UNPAN	3A	192	2002	2007	192	6									2	1		3
e-Readiness Guide (GeoSINC)	GeoSINC	NO	0			0	1												
e-Readiness Rankings	The Economist Intelligence Unit	A	70	2000	2007	70	8	5	1			2		3	1	9	1	15	37
European Information Society Statistics	European Commission	6M	27	2002	2007	27	6	30	1	8	3	7	1			15	23		88
Freedom on the Net Index	Freedom House	A	15	2008	2008	15	1							19					19
Global Action Plan for Electronic Commerce	WITSA	NO	0			0	1												
Global E-Readiness	McConnell International	NP	53	1999	2000	53	2	1	1	3		2	2	5	3	1		1	19
Global Internet Filtering	OpenNet Initiative	NP	40	2007	2007	40	1	1						6			1	5	13
ICT at a Glance Tables	The World Bank	A	207	2000	2006	207	7	8	4	3				5	1	2	2	7	32
ICT Development Index	International Telecommunication Union	A	154	2002	2007	154	2	7									1	3	11
ICT Diffusion Index	UNCTAD	A	180	2002	2004	180	3	4	1								1	2	8
ICT Opportunity Index	UNCTAD	A	183	2004	2006	183	3	5									2	3	10
Index of Knowledge Societies	UNPAN	NP	40	2005	2005	40	1	2									1	12	15
Information Society Index	IDC	A	53	1995	2007	53	13	7		1						3		4	15
Knowledge Economy Index	The World Bank	A	140	1995	2009	140	15	5	1	2	1		1			2	3	68	83
Knowledge Index	The World Bank	A	140	1995	2008	140	14	5	1	2	1		1			2	3	56	71
Layers, Sectors and Areas of the Information Society	Hilbert, M. R. & Katz, J.	NO	0			0	1												
Models of Access	Warschauer, M.	NO	0			0	1												
Networked Readiness Index	World Economic Forum	A	134	2001	2008	134	7	9	7	5			1	2	4	3	6	30	67
OECD Key ICT Indicators	OECD	A	32	1991	2007	32	17	8		10	2					1	2		23
PISA	OECD	3A	40	2003	2006	40	4					32	10						42
Readiness for the Networked World	CID Harvard University	NO	0			0	1	4	1	2	1		2	1	1	5	2		19
Readiness Guide for Living in the Networked World	Computer Systems Policy Project	NO	0			0	1	9					3	2	1	6	2		23
Real Access Criteria	Bridges.org	NO	0			0	1												
SIBIS Framework	SIBIS	NP	17	2002	2002	17	1	25	1	1	1	22	12	8		20	38	5	133
SIMBA Model	Wikander, G.	NP	8	2005	2005	8	1	9	3	1	1			7	3	4	2	24	54
Sustainable ICT Framework	Sundén, S. & Wikander, G	NP	1	2000	2000	1	1	9		2	3	1	1	2	6	5		11	40
Technology Achievement Index	UNDP	NP	72	2000	2000	72	1		2		1			1				4	8
The Access Rainbow	Clement, A. & Shade, L.R.	NO	0			0	1												
The CTO Guide to the ICT	Commonwealth Telecommunications Organization	NP	54	1999	2001	54	3	9	6	1				12	2		2	10	42
The Development Dynamic	Accenture, Markle Foundation & UNDP	NO	0			0	1												
The eInclusion Index	SIBIS	NO	0			0	1	1				1				1	1		4
The Global Diffusion of the Internet	Mosaic	NP	25	1997	2000	25	4	5					1	1		2	4		13
WDI Key ICT Indicators	The World Bank	A	211	2000	2006	211	7	3									1	2	6
World Development Indicators – The information Age	The World Bank	A	153	1995	2008	153	14	2	2							3	1	2	10
World Telecommunication ICT Indicators	International Telecommunication Union	A	209	1975	2008	209	34	41	20	15	6			1			30	6	119
World Telecommunication Regulatory Database	International Telecommunication Union	A	191	1998	2008	191	11							32					32
TOTAL								366	75	79	24	74	63	142	34	148	197	376	1578

The state of world indicators and indices

Charts show the number of indicators (%) in all Digital Economy models within each category.



Distribution of the primary categories
– including nondigital indicators

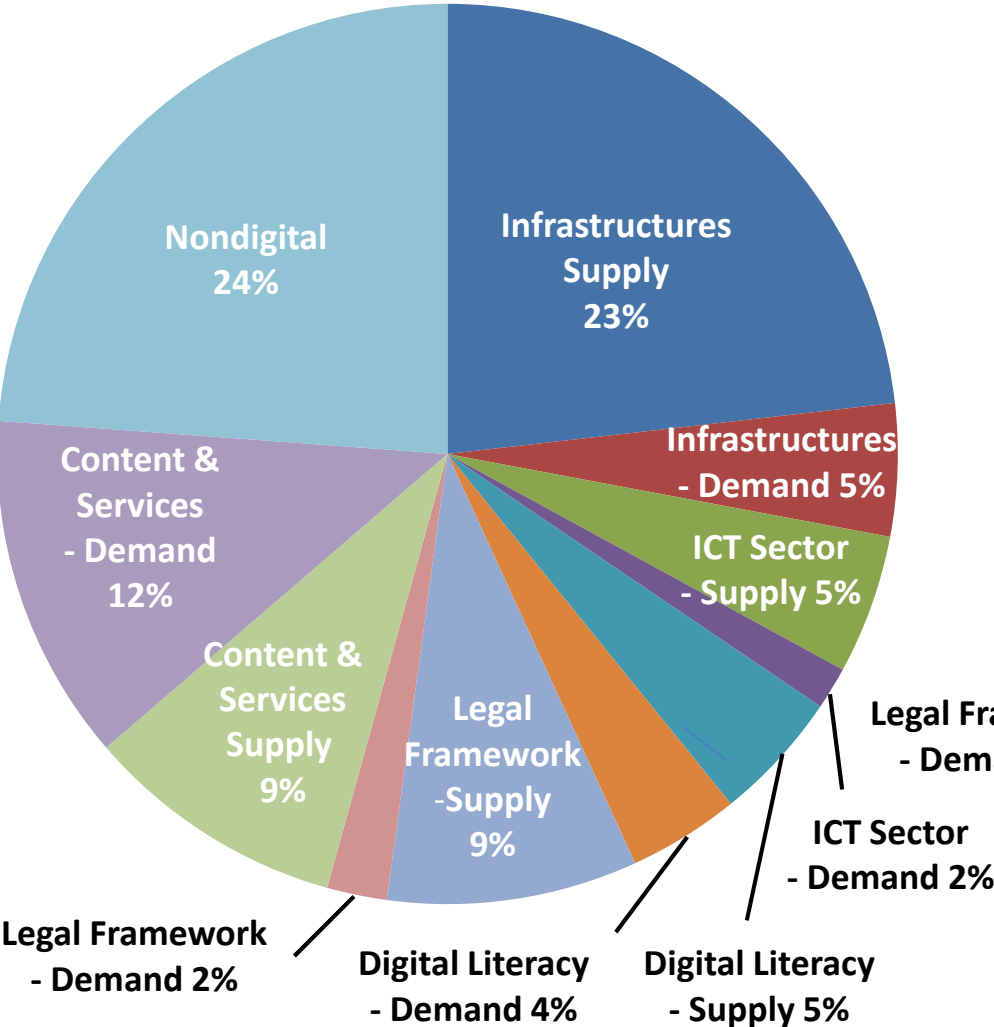


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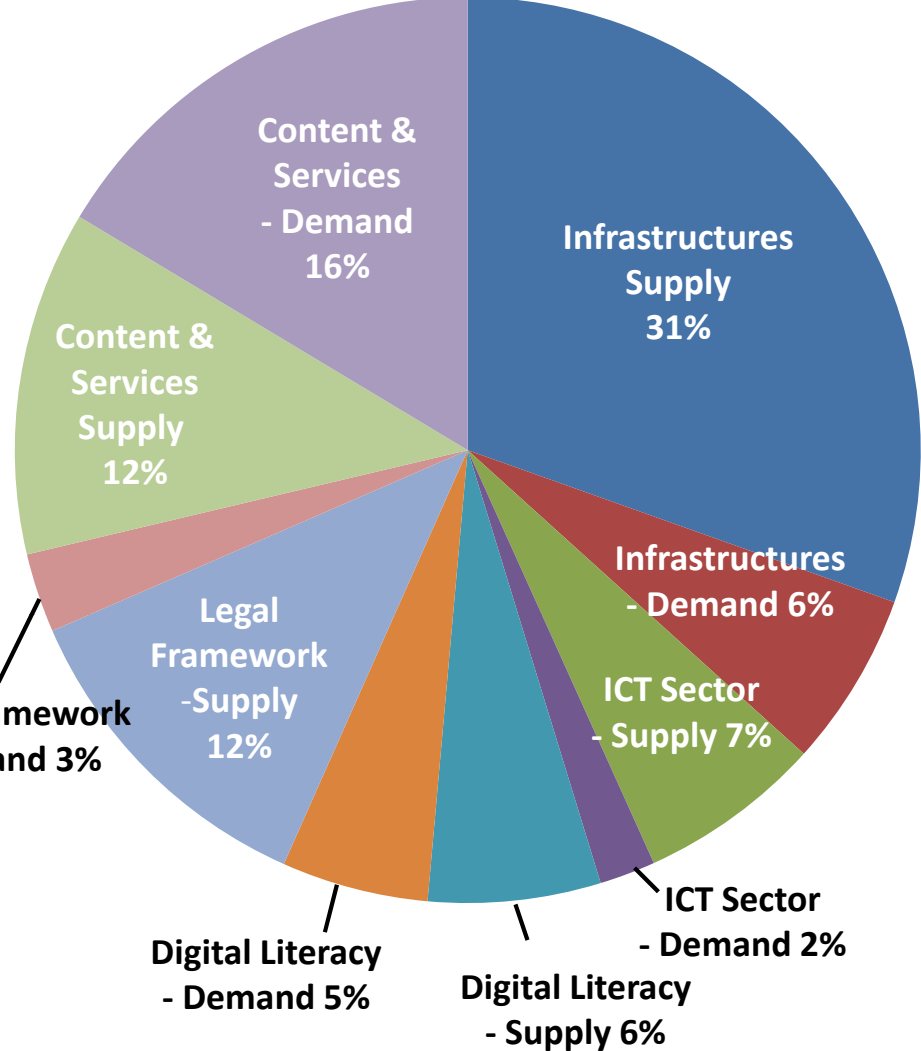
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- Analogue “noise”

The state of world indicators and indices

Charts show the number of indicators (%) in all Digital Economy models within each subcategory.



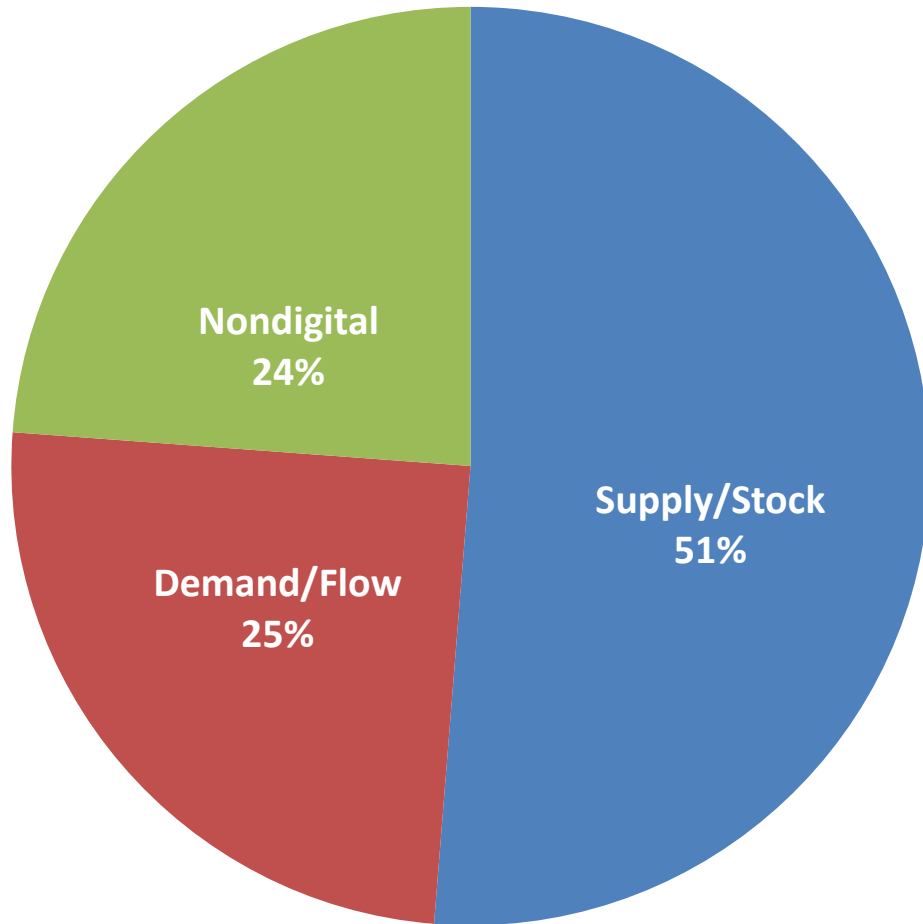
Distribution of the secondary categories – including nondigital indicators



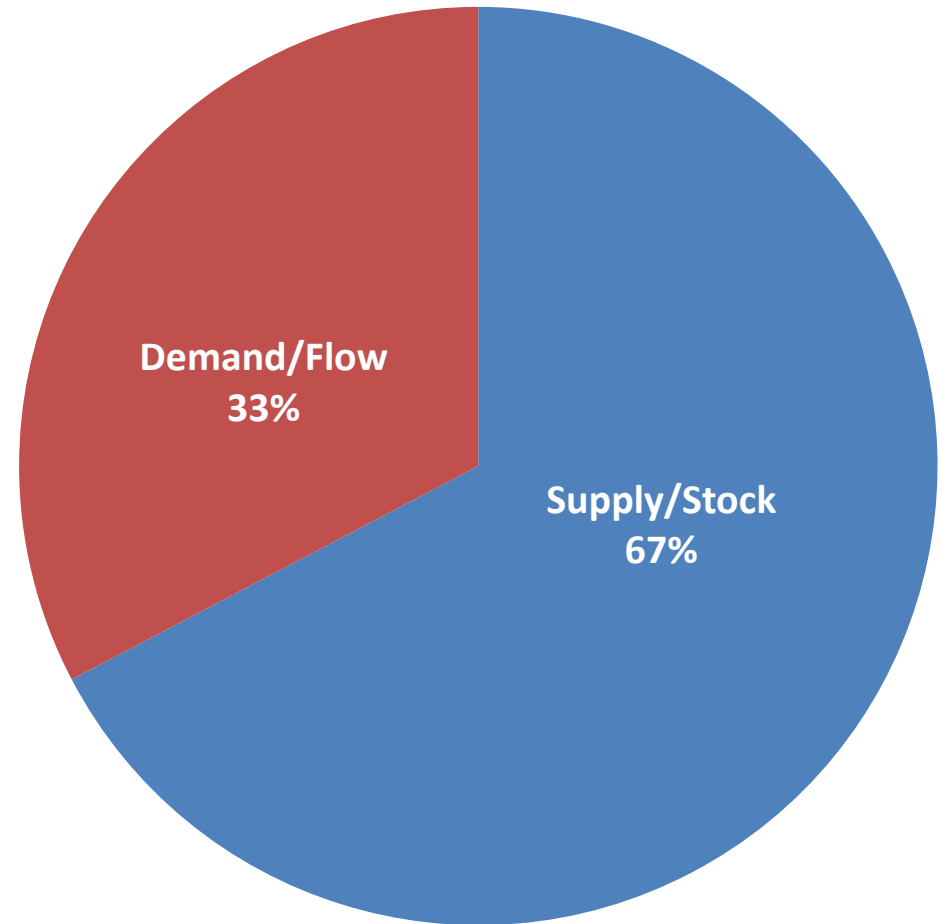
Distribution of the secondary categories – excluding nondigital indicators

The state of world indicators and indices

Charts show the number of indicators (%) in all Digital Economy models according to typology (supply- or demand-side) of indicator.



Distribution of the primary categories
– including nondigital indicators



Distribution of the primary categories
– excluding nondigital indicators

- Bias towards supply-side indicators
- Need to measure demand-side variables: affordability, usage, policies

Telecom vs. e-Readiness models

Charts show the number of indicators in selected Digital Economy models within each subcategory.

Two main conceptions of the Digital Economy:

1. Mainly infrastructures (Telecom approach)
2. Part of a broader concept (e-Readiness approach)

Inconvenients:

1. Lets the human factor out
2. Difficult to tell analogue from digital evolution

→ 360° digital framework

