Ants in the Honey Pot?
Spaces of Exclusion in the ICT4 Development Strategies

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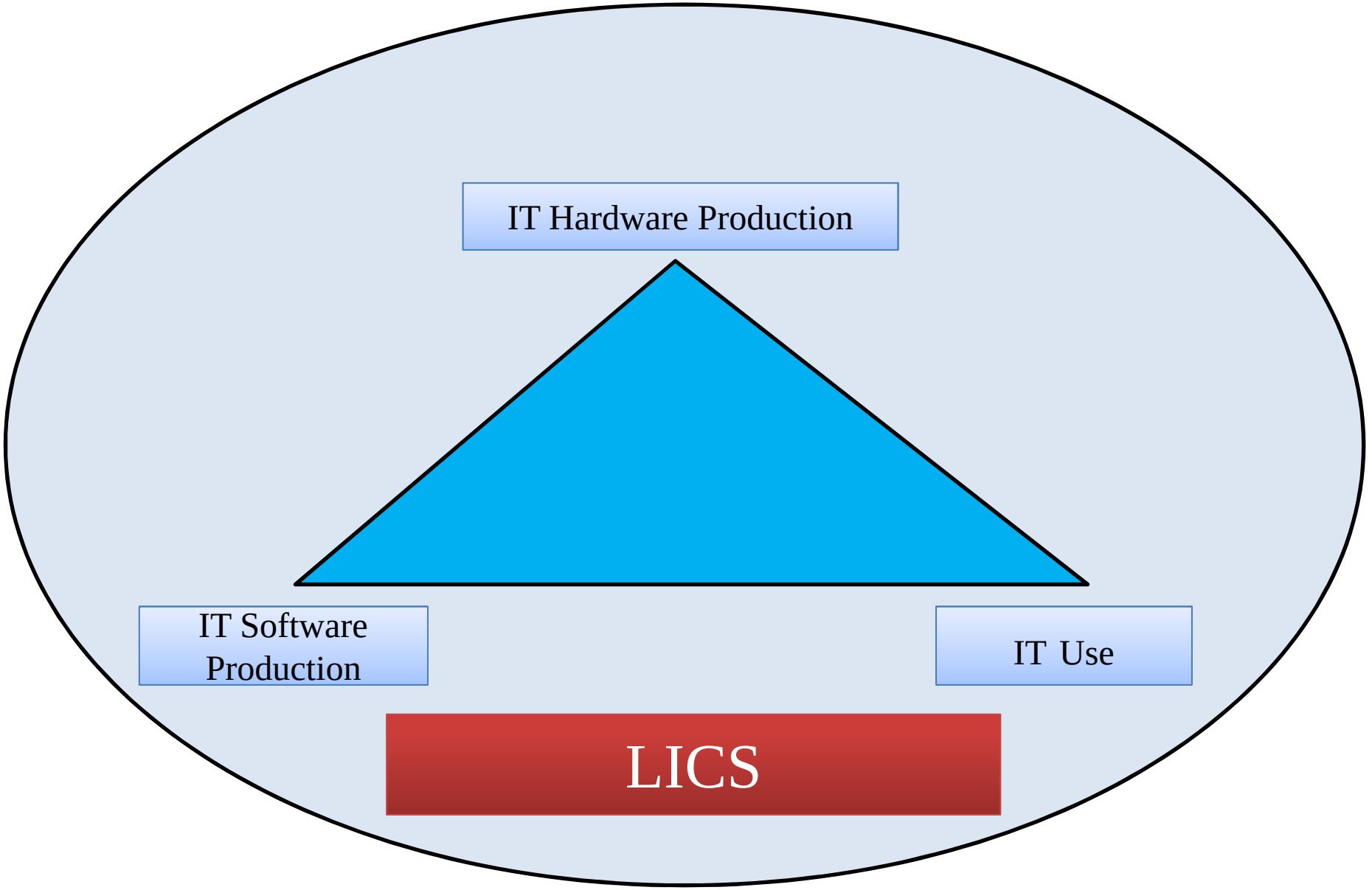
As we proceed

- We shall conceptualize ICT4D as involving the three complementary process of hardware production, software production and IT use and the deviation from it might result in exclusion
- We shall argue that the ***need based approach*** implicit in today's ICT4D strategy, while having many attractive features and illuminating, it **is still incomplete**.
- We shall make the case for evolving a ***capability based approach*** *for* IT4D strategy on the **three pillars** of H/W production, S/W production and widespread use of IT on the **foundation** of Learning, Innovation and Competence building Systems **(LICS)**
- The starting point for evolving an inclusive IT4D development strategy shall be to **locate the varied spaces of exclusion** in the existing system of innovation and production.
- It is better done at the micro level and we need to **get out of the old economy indicators**

IT4 for Inclusive Development



Understanding exclusion

In terms of the cause of exclusion (Amartya Sen 2000)

(i) Active exclusion: Happens when exclusion come about through policies directly aimed at that result;

(ii) Passive exclusion: Result from policies that have not been devised to bring about that result but nevertheless have such consequences

In terms of the outcome of exclusion (Amartya Sen 2000)

(i) Constitutive exclusion: Happens when being excluded is in itself a deprivation which can be of intrinsic importance on its own

(ii) Instrumental exclusion: Refers exclusions that may not be depriving by themselves, but can lead to deprivation through consequences of great instrumental importance

More on exclusion/inclusion

In terms of the nature of exclusion

- Transient exclusion
- Sustained exclusion

In terms of outcome of inclusion: Unfavorable inclusion

- Subordinated inclusion
- Illusive inclusion

Some of these conceptual categories, it not all, may be of relevance in understanding the genesis and sustenance of exclusion in ICT4D

ICT and exclusion

- ICT in general and the recent innovations in particular, by their very nature, are efficiency enhancing, growth augmenting and with potential for fostering inclusion;
- But institutional innovations like the ITA of WTO - simply a tariff cutting mechanism with a total neglect of learning innovation and competence building systems – seems to create and sustain multiple spaces of exclusion.
- This is evident from when we compare the different indicators during the pre and post ITA period

Exclusion Evidenced under ITA (WTO)

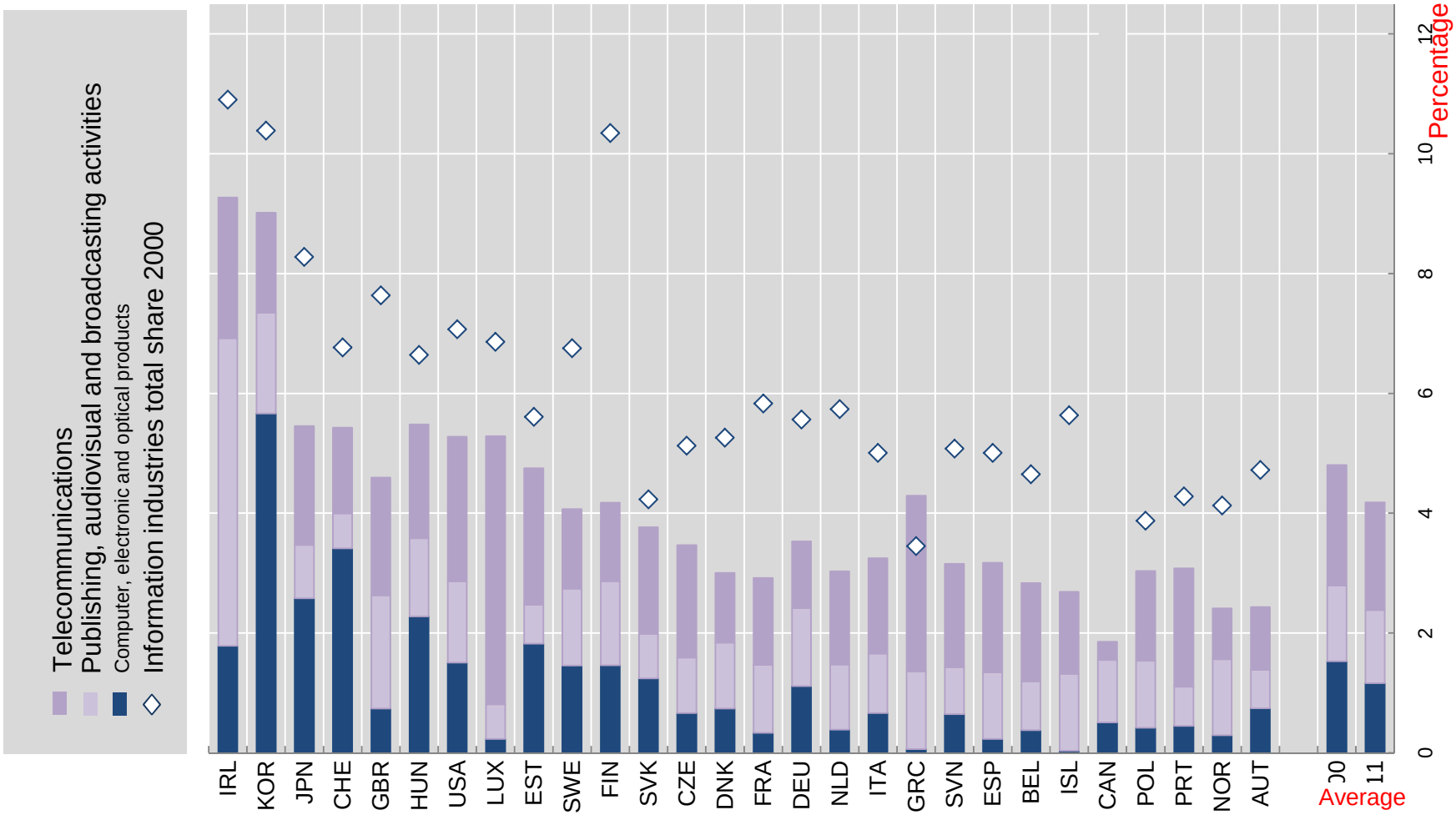
Passive, constitutive and sustained exclusion – in IT hardware and software production

Exclusion in IT goods production

- IT industry accounted for six per cent of global GDP in 2010
- Global value-added by ICT industries more than doubled from $1.2 trillion in 1995 to $2.8 trillion in 2010
- ICT industries also account for a notable share in employment
- In 2010, ICT industries employed 5.8 per cent of workers in OECD economies, a 13%increase since 1995

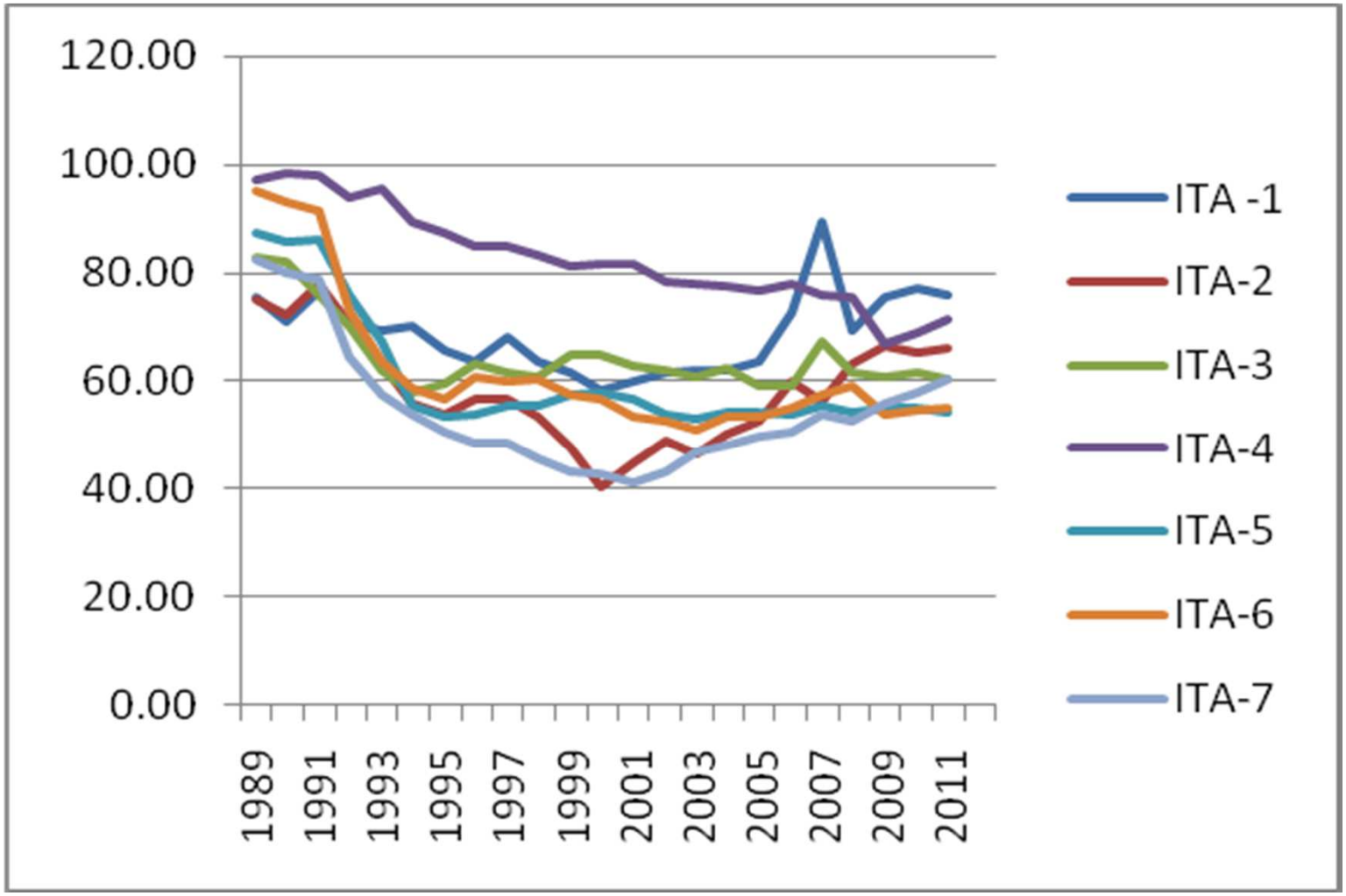
Share of ICT Manufactures in Total Value Addition

(As a Percentage of Total Value added)



Source: OECD, Structural Analysis (STAN) Database, ISIC Rev.4, June 2013

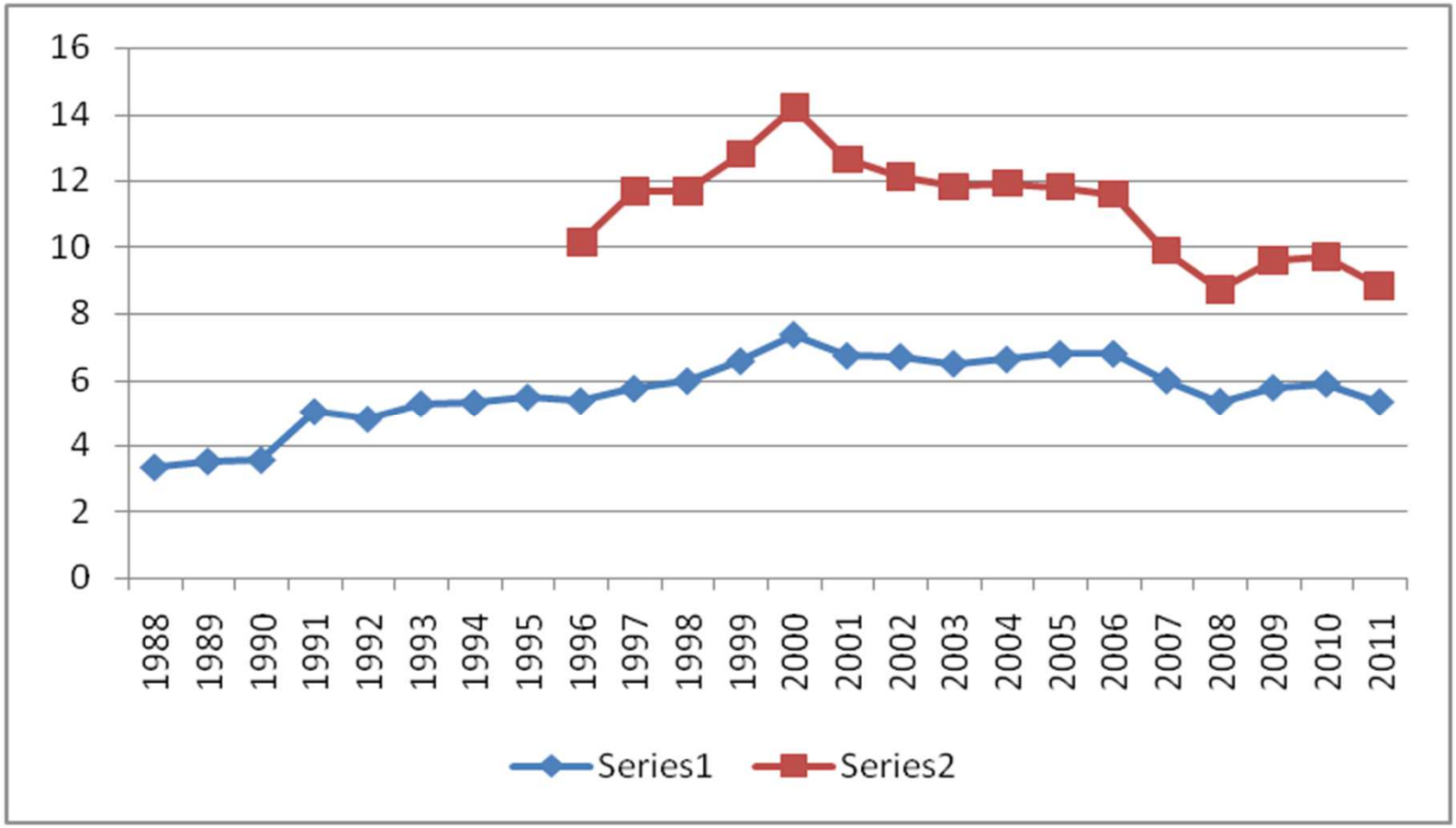
Trend in the global share of top 4 IT exporting countries



Share of Asian countries in the world exports of ITA goods

Country	HS1992					HS1996			
	1991	1997	2001	2007	2011	1997	2001	2007	2011
Bahrain			0	0	0			0	0.01
China		2.57	5.75	18.41	25.55	2.53	5.3	21.67	28.13
China, Hong Kong		6.39	6.99	10.67	14	4.73	5.55	9.1	12.02
China, Macao SAR	0.04	0.01	0	0.01		0	0	0.01	
India	0.11	0.07	0.12	0.12	0.61	0.06	0.08	0.11	0.42
Indonesia	0.06	0.36	0.45	0.22	0.27	0.27	0.42	0.26	0.22
Japan	26.03	14.26	10.93	8.24	6.21	14.2	10.18	6.85	5.21
Kuwait			0	0.01				0.01	
Malaysia	4.48	4.62	5.3	3.87	3.39	4.9	5.1	4.93	3.93
Oman	0	0	0.01	0.01	0.01		0	0	0
Philippines		1.32	1.43	0.75	0.66		2.74	2.19	0.84
Rep. of Korea	6.95	2.27	4.57	6.52	5.95	4.81	4.94	6.79	6.39
Saudi Arabia	0.01		0.01	0.01	0.03		0	0.01	0.02
Singapore	7.34	8.77	7.46	11.34	8.12	10.11	8.16	7.82	7.86
Thailand	2.78	2.76	2.41	1.34	1.48		1.9	2.17	1.96
United Arab Emirates				0.38				0.27	
Viet Nam			0.13	0.1			0.07	0.14	
Total	47.81	43.41	45.56	62.01	66.27	41.61	44.46	62.34	67.02

Share of IT goods exports by ITA countries in global merchandise exports



Trend growth rates in the export price of ITA goods

HS	Period	ITA-1	ITA-2	ITA-3	ITA-4	ITA-5	ITA-6	ITA-7
HS 1992	Pre-ITA 1988-96	-0.80 (-0.525)	0.80 (0.52)	3.5 (2.441)**	6.90 (2.640)**	2.40 (2.993)**	-0.40 (-0.476)	0.10 (0.102)
	Post ITA 1996-11	-2.80 (-1.546)	6.20 (11.21)*	2.40 (6.581)*	4.50 (2.727)**	5.50 (9.268)*	2.36 (4.399)*	1.70 (5.180)*
HS 1996	Post ITA	1.70 (2.579)**	4.10 (1.85)	-3.0 (-5.265)*	3.70 (5.707)*	5.40 (9.122)*	8.40 (3.024)**	1.0 (3.113)*

Note: ITA -1: Computers and calculating machines; ITA-2: Telecommunication equipment; ITA-3: Semiconductors; ITA-4: Semiconductor manufacturing equipment; ITA-5: Instrument and apparatus ITA-6: data storage media and software; ITA-7: Parts and accessories

Case of IT software

- The developmental implications of software production is well articulated in Information Economy Report UNCTAD (2012) than anywhere else.
- It has in argued that domestic software capabilities are increasingly important for countries to create an inclusive information society.
- Inspired by the Indian experience and the growing trend towards outsourcing of various software-related activities, software production is increasingly of interest for countries at low levels of development
- New developments like cloud computing, mobile applications, new production modes for software, such as distributed peer-production over the Internet and the growing influence of free and open software are generating new opportunities for developing countries
- Nonetheless, production of software is yet to receive the attention that it deserve in the IT4D strategies of developing countries and multilateral agencies

Top 25 Software Companies, by Revenue, 2010
(millions of dollars and percentage)

Company	Software revenue (millions of dollars)	Growth over 2009	Software revenue as a share of total revenue (percentage)	Headquarters
Microsoft	4 270	11	81	United States
IBM	**22 485**	5	23	United States
Oracle	**20 958**	13	69	United States
SAP	**12 558**	11	75	Germany
Ericsson	7 274	-4	24	Sweden
HP	6 669	8	5	United States
Symantec	5 636	1	94	United States
Nintendo	5 456	-20	40	Japan
Activision Blizzard	4 447	4	100	United States
EMC	4 356	10	26	United States
Nokia Siemens Networks	4 229	-6.6	25	Finland
CA	4 136	3.1	93	United States
Electronic Arts	3 413	-8.4	100	United States
Adobe	3 177	13.6	83	United States
Alcatel-Lucent	2 561	-4.6	12	France
Cisco	2 383	11.5	6	United States
Sony	2 083	8.8	2	Japan
Hitachi	1 939	22	2	Japan
Dassault	1 885	19	90	France
BMC	1 843	4.8	93	United States
SunGard	1 762	-11.7	35	United States
Autodesk	1 701	9.2	88	United States
Konami	1 643	3.1	53	Japan
Salesforce.com	1 523	27.9	94	United States
Sage	1 485	-4.6	67	United Kingdom

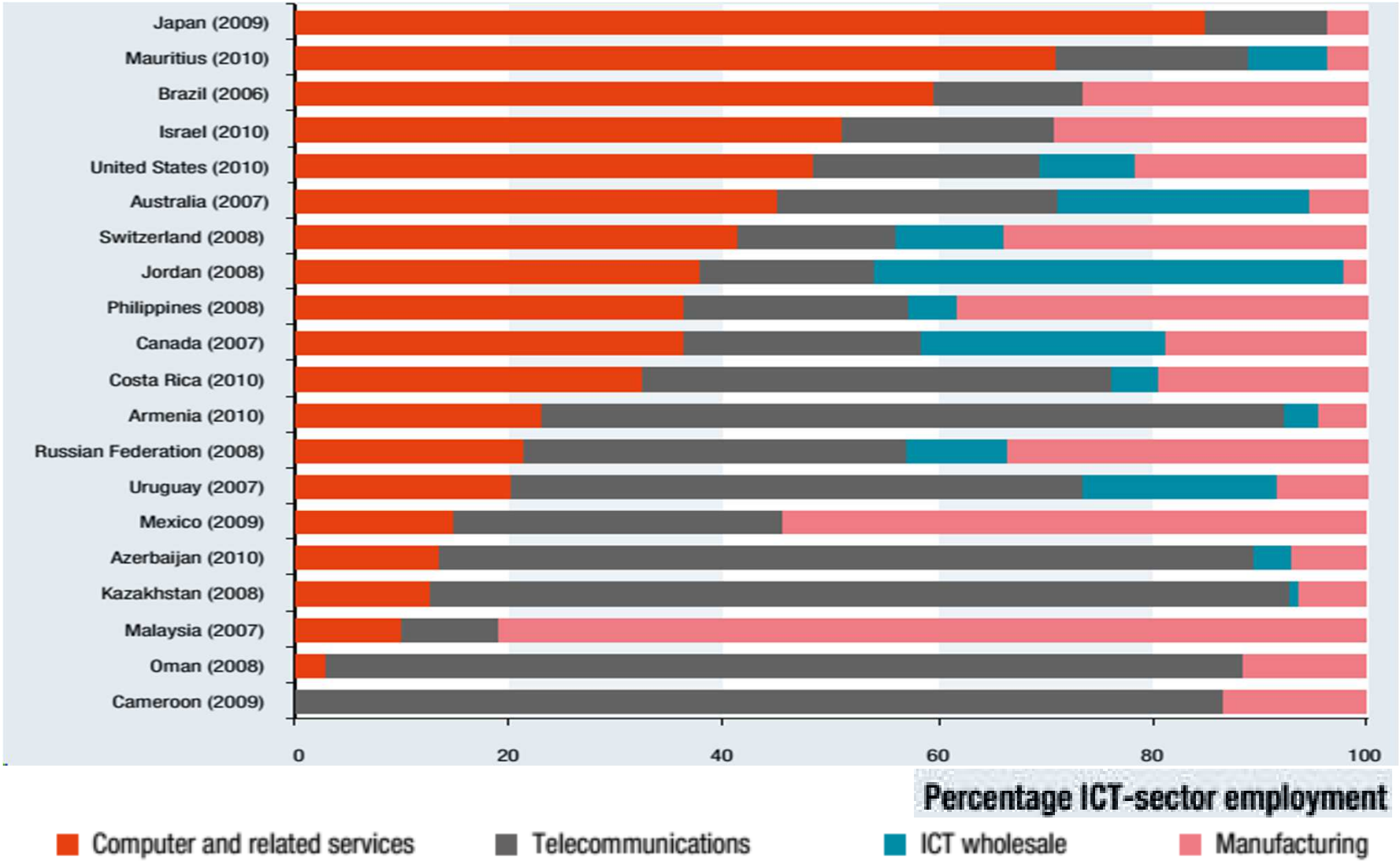
Greenfield FDI Projects in a Software and IT Services, by Destination 2007-08

Destination Region/Economy	Number of Projects	Destination Region/Economy	Number of Projects
World	7 553	**Developed countries**	4 419
Developing countries	2 956	**Asia Developed countries and Oceania**	2 043
Africa	228	India	541
South Africa	72	China	422
Egypt	29	Singapore	255
Morocco	27	United Arab Emirates	172
Tunisia	26	Hong Kong (China)	164
Kenya	11	Malaysia	96
Latin America and the Caribbean	685	Republic of Korea	71
Brazil	200	Philippines	46
Mexico	146	Viet Nam	45
Argentina	92	**Transition economies**	178
Colombia	63	Russian Federation	71
Chile	57	Ukraine	24

Source: UNCTAD, based on information from the Financial Times Ltd. fDi Markets (www.fDimarkets.com).

Distribution of ICT-Sector Employment

selected countries, latest year (*Source*: UNCTAD)



Subordinated inclusion: Case of IT use in Agriculture

Subordinated inclusion IT use by Indian farmers

- Numerous pilot projects and they remain as pilots!!!
- With respect to ICT use in India a recent study using the national level (NSSO) data has shown that
- Use of ICT has given rich dividends to the users by way of increased return from their investment in cultivation
- However, the use of ICT for accessing information is confined to large farmers and
- For the marginal and small holders the major source of information continues to the pesticide/fertilizer dealers and other others

Spaces of exclusion in IT use

- To the extent that the IT use is confined to the larger holders, it could be inferred that there exists subordinated inclusion
- History repeats itself! The same trend has been observed in case of green revolution as well!!!!
- India takes pride in being at second position in terms of telephone subscriber base
- But her tele-density in the rural areas is only 38% in 2012 as compared to 163% in the urban areas indicative of the intra-national digital divide – or the prevalence of constitutive exclusion

To conclude

- Since innovation is the key to development, for development is to be inclusive, the underlying innovation system has to be inclusive
- While evolving a strategy for inclusive social and economic development, an understanding of the varied spaces of exclusion in the innovation system may be a great advantage
- Search for the spaces of exclusion is better undertaken at the micro level
- IT4D strategy, to be inclusive, its three pillars (H/W production, S/W production and IT use) are to be set on the foundation of a vibrant learning, innovation and competence building system (LICS)
- The need based approach with focus only on use of IT is bound to have lopsided and outcomes and promote and sustain exclusions

To conclude

- The new developments in ICT like cloud computing, datafication and others as indicated in the issue paper are expected to foster inclusive development
- But the institutional innovations like the ITA of WTO, with scant attention to learning, innovation and competence building seems to have created spaces of exclusion in the production of ITA goods leading to suboptimal outcomes.
- Spaces of exclusion in the use of IT is also prevalent despite the remarkable achievements in bridging the digital divide.

Thank you for your kind attention