



IMPLICATIONS OF APPLYING THE NEW DEFINITION OF «ICT GOODS»

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Implications of applying the new definition of "ICT goods"

1. Introduction

Global exports of information and communication technology (ICT) goods represented 12 per cent of world merchandise trade in 2009, and are increasingly dominated by Asia¹. In fact, seven of the top ten exporters are Asian economies with China clearly in leading position.

In recent years, several changes have been introduced in the criteria used to define ICT goods. This note explores the impact of the change in the scope of the ICT goods definition. After presenting in details the changes in the definition and its rationale, it looks at the impact of applying the new definition on the international ranking of exporters and importers of ICT goods. It also examines what products account for the most important additions and deletions in the new definition.

It should be noted that changes in the definition does not imply a change in real trade flows. The objective of this note is to document how the change in definition has influenced the relative importance of different countries as ICT goods traders. Understanding the implications of the new definition is relevant for UNCTAD's mandate to produce internationally comparable statistics on trade in ICT goods, within the framework of the Core Indicators developed by the *Partnership on Measuring ICT for Development*.²

2. ICT goods definition and correspondence issues

Since 1999, the OECD's *Working Party on Indicators for the Information Society (WPIIS)* has provided a forum to define internationally comparable statistical indicators on ICT penetration, use and impact. Among other achievements, the WPIIS has provided a definition of ICT goods (2003 and 2009). In the context of the *Partnership on Measuring ICT for Development*, UNCTAD is in charge of the collection of two core indicators on trade in ICT goods: the proportion of ICT goods in total exports and imports of each countries.³ These core indicators are based on the WPIIS definition of ICT goods. In 2003, the OECD's WPIIS produced a first definition of ICT goods. The criteria for ICT goods were updated in 2009 but the new list of ICT goods corresponding to these criteria was only released by the OECD in 2010.⁴ The objective of the update in the definition is to simplify and shorten the list of ICT goods. It also intends to match as close as possible with the basic definition of ICT products which is 'ICT products must primarily be intended to fulfill or enable the function of information processing and communication by

¹ See UNCTAD/PRESS/PR/2011/004 of 02/02/11

<http://unctad.org/Templates/webflyer.asp?docid=14417&intItemID=1528&lang=1>

² http://new.unctad.org/default___575.aspx.

³ See *Manual on the production of statistics on the information economy, UNCTAD 2009, revised edition*.

⁴ See OECD's Guide to Measuring the Information Society 2009.

electronic means, including transmission and display.’ (Guide for Measuring the Information Society 2009).

As observed by the OECD⁵, comparing the two lists is not without technical difficulties. The 2003 list for classifying traded products was laid out in the Harmonized System (HS) 2002 while the 2010 list was first expressed in the CPC rev2 classification, then converted in HS 2007. Converting the new product list from HS 2007 back into HS 2002 for product by product comparisons is possible but not always straightforward. Indeed, in a number of cases, the correspondence does not happen on a line for line basis but rather on a "one line to many lines" or even on a "many lines to many lines" basis.

Thus, in proposing a conversion from CPC rev 2, to HS 2007 and then into HS 2002, the OECD used an approach whereby goods are made to correspond across classifications by "bloc of items time series" (one cluster in HS 2007 is deemed as approximately equivalent to another cluster in HS 2002). This approach ensure some degree of time series comparability despite the fact that the two lists of ICT goods obtained do not always tally perfectly⁶.

In this note, the focus is on the main differences between the "old" and the "new" lists, in terms of the change of scope and change in the value of trade entailed. The new definition of ICT goods involves both the removal of a number of product lines and the addition of a few new ones. The following paragraphs detail and substantiate the main changes.

Overall, the change results in a reduction of the scope, both in terms of number of items covered and their value. In the HS 2007 classification, the change in definition entailed the removal of 79 product items, and the addition of 7, resulting in a total number of 95 ICT goods items.⁷ In value terms this means a decline of approximately 11% of global exports of "ICT goods" in 2009 (see annex 1). This is very close to the difference of 9.5% between the two definitions identified by the OECD for the year 2008⁸.

3. Trade value by products included/removed in ICT goods list

The new definition results in both additions and removals from the ICT goods lists. However, each good added or removed carry different weights in trade terms. Tables 1 and 2 present the goods for which the largest shifts in trade value occur, for goods removed and for goods added respectively.

As far as goods removed from the list are concerned, the new definition excludes cable goods, and also goods which "...use electronic processing to detect, measure and /or record physical phenomena or to control a physical process."⁹ In trade value terms, one can observe a relatively even distribution of value among the goods removed (table 1). The item that tops the list are CD-Roms and DVDs (HS 852340 *Optical media for the recording of sound/of other phenomena*), which account for just 10% of the total value of removed goods in 2009. Other removed goods that are significantly traded include machine-tools such as *automatic regulating/controlling instruments, measuring/checking*

⁵ Measuring trends in ICT trade: from HS 2002 to HS 2007. DSTI/ICCP/IIS(2010)5/FINAL, OECD.

⁶ OECD 2010.

⁷ Respective numbers for HS 02 are 87 goods removed and 10 additions, and 88 removals for 10 additions for HS 96.

⁸ OECD 2010

⁹ Guide to measuring the information society 2009, OECD.

instruments, and machines & apparatus for the manufacture of semiconductor devices/of electronic integrated circuits. Taken together, the top 20 items (out of 79) account for two thirds of the trade in removed items.

Table 1: Top 20 goods **removed** from the ICT goods list (highest exports in 2009)

Rank	Removed good by HS code	Exports in US\$ million 2009	% of total exports removed goods	Cumulated % of total exports removed goods	Description
1	852340	23'625	10%	10%	Optical media for the recording of sound/of other phenomena, but excl. products of Ch. 37.
2	903289	12'622	5%	15%	Automatic regulating/controlling instr. & app., n.e.s. in 90.32
3	903180	11'312	5%	20%	Measuring/checking instr., apparatus& machines, n.e.s. in Ch. 90
4	848620	9'920	4%	25%	Machines & apparatus for the manufacture of semiconductor devices/of electronic integrated circuits
5	852691	8'941	4%	28%	Radio navigational aid app.
6	850490	8'818	4%	32%	Parts of the machines of 85.04
7	901819	7'973	3%	36%	Electro-diagnostic apparatus used in medical/surgical/dental/veterinary sciences (incl.apparatusfor functional exploratory examination/for checking physiological parameters), n.e.s. in 90.18
8	902780	7'869	3%	39%	Instruments & apparatus for physical/chemical analysis, n.e.s. in 90.27
9	854390	7'399	3%	42%	Parts of electrical machines & apparatus, having individual functions, not specified/incl. elsewhere in this Ch..
10	852329	7'299	3%	45%	Magnetic media for the recording of sound/of other phenomena, but excl. products of Ch. 37., other than cards incorporating a magnetic stripe
11	853224	7'168	3%	48%	Fixed electrical capacitors, other than those of 8532.10, ceramic dielectric, multilayer
12	854270	6'040	3%	51%	Electronic microassemblies
13	850450	5'934	3%	53%	Inductors, n.e.s. (excl. for cathode ray tubes)
14	903290	4'980	2%	55%	Parts & accessories of the instr. & apparatus of 90.32
15	902750	4'890	2%	58%	Instruments & apparatus for physical/chemical analysis, using optical radiations (UV, visible, IR), n.e.s. in 90.27
16	854420	4'658	2%	60%	Co-axial cable & other co-axial electric conductors
17	902214	4'532	2%	62%	Apparatus based on the use of X-rays (excl. of 9022.12), for medical/surgic ...
18	902620	4'367	2%	63%	Instruments & app. for meas./checking pressure
19	850431	4'274	2%	65%	Electrical transformers (excl. dielectric) having a power handling capacity not >1kVA
20	901580	4'125	2%	67%	Surveying/hydrographic/oceanographic/hydrological/meteorological/geophysical instr. & appliances (excl. compasses), n.e.s. in 90.15

Source: UNCTAD, based on COMTRADE.

The new definition introduces several new products into the list of ICT goods. Some of these – such as video consoles – reflect the development of new ICT products. Other goods that were previously not part of the list have been incorporated to reflect technological changes which now allow, for example, a printer or an Automatic Teller Machine (ATM) to communicate with other machines through a network. Other goods, in particular in the electronic component category, have been introduced due to the correspondence methodology applied to convert CPC rev2 products into HS 2007 lines. The list of the added ICT goods following to the change in definition is presented in annex 3. In total, the additions to the new list amounted to some 59 billion US\$ of exports, in 2009.

Table 2 reveals that the degree of concentration in value terms is much higher for the goods added to the new ICT goods list than for the goods removed. Video games (30% of total value of "added goods") and three different types of printers account for more than 89% of the total exports in added goods.

Table 2: Goods **added** to the ICT goods list, ranked by trade value.

HS code	Exports in US\$ million 2009	Description	% of total exports added goods	Cumulated % of total exports added goods
950410	17'813	Video games of a kind used with a television receiver	30%	30%
844331	15'851	Machines which perform two/more of the functions of printing, copying/facsimile transmission, capable of connecting to an automatic data processing machine/to a network	27%	57%
844332	13'826	Other printers, copying machines & facsimile machines, whether/not combined , exclud the ones which perform two/more of the functions of printing, copying/facsimile transmission	24%	81%
847290	4'567	Other office machines (eg. hectograph/stencil duplicating machines, addressing machines, automatic banknote dispensers, coin-sorting machines, coin-counting/wrapping machines, pencil-sharpening machines, perforating/stapling machines), exclud. 8472.10 & 8	8%	89%
852380	3'058	Discs, tapes, solid-state non-volatile storage devices, "smart cards" & other media for the recording of sound/of other phenomena, whether/not recorded, incl. matrices & masters for the production of discs, but excl. products of Ch.37., other n.e.s.	5%	94%
901320	2'207	Lasers (excl. laser diodes)	4%	98%
844351	881	Ink-jet printing machines	2%	99%
852359	472	Other semi-conductor media, for the recording of sound/of other phenomena, but excl. products of Ch. 37., other than "Smart Cards" & Solid-state non-volatile storage devices	1%	100%
900911	51	Electrostatic photocopying app. op. by repr. the original image directly on ...	0%	100%
854890	13	Electrical parts of mach./app., n.e.s. in Ch.85	0%	100%
852499	2	Recorded media for sound/oth. similarly recorded phenomena, incl. matrices ...	0%	100%
847220	0	Addressing machines & address plate embossing machines	0%	100%
900912	0	Electrostatic photocopying app. op. by repr. the original image via an inte ...	0%	100%
852410	0	Gramophone records	0%	100%
World	58'742		100%	

Source: UNCTAD, based on COMTRADE.

4. Impact of the definition by country

The change in ICT goods definition induces for all countries both the addition and the removal of items, which are discussed here. The net impact is generally negative but fluctuates widely by country.

4.1 Goods removed by the change in definition

The annex 4 contains the list of goods removed by the new definition.

The table 3 shows the ten largest exporters of goods removed from the ICT goods list. At the world level, the change in definition entails a reduction of 234 US\$ billion of such exports. This reduction has mostly affected some of the largest exporters of ICT goods, as the three countries that account for the largest shares in removed goods are the US, Germany and Japan. The large impact on Germany is probably explained by the removal

of machine-tools, of which it is a significant exporter. China on the other hand, despite being the world's first exporter of ICT goods only ranks 4th among the country "losing out" to the change in definition. Therefore, the change in definition accentuates the shift towards Developing Asia for ICT goods exports. China's lead at the top of the rankings of ICT good exports will probably be further strengthened as a consequence of the change of definition.

Table 3: Top exporters of goods **removed** from the ICT goods list by the new definition

Rank	Economy	Exports of removed goods (US\$ million), 2009	Share of total exports of removed goods
1	United States	37'177	16%
2	Germany	34'648	15%
3	Japan	22'941	10%
4	China	17'195	7%
5	Hong Kong, China	11'217	5%
6	Netherlands	10'386	4%
7	United Kingdom	9'881	4%
8	France	8'764	4%
9	Singapore	8'284	4%
10	Philippines	6'882	3%
	World	234'081	100%

Source: UNCTAD, based on COMTRADE.

4.2 Goods added by the new definition

Concerning the few goods added by the change in definition, their total exports amounted to 59 billion US\$. As is typical for ICT goods, China clearly leads the rankings in exports of such goods, accounting for almost 30% of the world's total. China is followed by the Netherlands, Germany and other large traditional exporters of ICT goods. Thailand, a somewhat less significant exporter of ICT goods also entered the top-10 list of new ICT goods exporters with 1.2 US\$ billion exports under the new definition, as presented in table 4.

Table 4: Top exporters of goods **added** to the ICT goods list by the new definition

Rank	Economy	Exports of added goods (US\$ million), 2009	Share of total exports of added goods
1	China	17'055	29%
2	Netherlands	6'490	11%
3	Germany	6'123	10%
4	United States	5'175	9%
5	Hong Kong, China	4'406	8%
6	Singapore	2'235	4%
7	Japan	2'169	4%
8	Mexico	2'041	3%
9	France	1'408	2%
10	Thailand	1'249	2%
	World	58'742	100%

Source: UNCTAD, based on COMTRADE.

4.3 Net effect of the new ICT goods definition

Annex 2 presents for all countries the value of exports of goods added, removed and the net effect of the change of definition for the ICT goods list. For the world as a whole, the net impact of the change is a reduction of the value of ICT goods exports by some 173 US\$ billion, an eleven percent fall. Goods added to the list account for approximately one quarter (25%) of the value of goods removed from the list. In China, the change in definition did not entail a significant reduction of the total value of ICT goods exported, as the value of added goods is worth 99% of the value of the goods removed. Again, the impact of the change in definition has reinforced the prominence of this country at the top of world's rankings in ICT goods exports.

Table 5 shows the countries for which the net effect (addition minus removal of goods) has been the most pronounced. Again, it is striking that traditional ICT goods exporters among developed countries have been generally more affected by the change in definition. The US, Germany, Japan and France have seen the five largest net falls in the value of their ICT goods exports. The change in definition will therefore accelerate the trend observed in recent years of ICT goods exports shifting from West to East¹⁰.

Table 5: Largest net impacts of change in ICT goods definition on exports of ICT goods (2009)

Rank	Economy	Added minus removed exports	Size of added against removed
1	United States	-32'001	10%
2	Germany	-28'525	1%
3	Japan	-20'772	1%
4	United Kingdom	-8'636	0%
5	France	-7'356	5%
6	Philippines	-6'826	13%
7	Hong Kong, China	-6'811	6%
8	Singapore	-6'050	0%
9	Taiwan, Province of China	-5'398	12%
10	Italy	-4'397	6%
	World	-175'339	25%

Source: UNCTAD, based on COMTRADE.

Annex 2 displays the net effect of the change in the ICT goods definition. For a number of small economies, including Bolivia, the Republic of Moldova and El Salvador, the change in the scope has resulted in an almost total elimination of their ICT goods exports since those were almost exclusively concentrated on the "removed" goods. By contrast, in the case of Indonesia, exports in items added to the new ICT goods list exceeds by 327 US\$ millions the value of exports of goods removed.

Table 6 proposes an overview of the country rankings induced by the change in definition for the top 25 exporters of ICT goods. The standings of the "newcomers" in ICT goods exports have generally strengthened, while the opposite is true for the traditional developed countries exporters. The Republic of Korea (+2) and Poland (+3) for example gained ranks with the change in definition. On the other hand, Germany (-3), and Canada (-4) lost several ranks as a result of the change in definition.

¹⁰ See UNCTAD's Information Economy Report 2009 and 2010.

Table 6: Change in rankings among the top 25 exporters induced by the change in ICT goods definition.

Economy	Ranking under old definition	Value of exports under old definition (US\$ million), 2009	Ranking under new definition	Value of exports under new definition (US\$ million), 2009	Change in ranking	Change in exports value
China	1	356'441	1	356'301	0	-140
Hong Kong, China	2	148'692	2	141'881	0	-6'811
United States	3	145'159	3	113'157	0	-32'001
Singapore	4	97'492	4	91'442	0	-6'050
Republic of Korea	7	82'690	5	79'508	2	-3'183
Japan	5	90'936	6	70'164	-1	-20'772
Taiwan, Province of China	8	72'452	7	67'054	1	-5'398
Malaysia	9	59'960	8	57'318	1	-2'642
Germany	6	83'269	9	54'743	-3	-28'525
Netherlands	10	57'238	10	53'342	0	-3'896
Mexico	11	52'892	11	49'764	0	-3'128
Thailand	13	30'216	12	30'164	1	-52
United Kingdom	12	32'036	13	23'400	-1	-8'636
Hungary	15	23'516	14	21'465	1	-2'051
France	14	27'118	15	19'762	-1	-7'356
Czech Republic	17	18'117	16	16'305	1	-1'811
Philippines	16	20'822	17	13'997	-1	-6'826
Poland	21	13'793	18	12'808	3	-985
Ireland	19	14'148	19	12'802	0	-1'346
Sweden	20	14'147	20	11'788	0	-2'360
Slovakia	23	11'901	21	11'574	2	-327
Canada	18	14'328	22	10'944	-4	-3'384
Belgium	24	10'536	23	9'296	1	-1'240
Italy	22	12'540	24	8'143	-2	-4'397
Israel	25	9'540	25	7'854	0	-1'686
World		1'579'871		1'404'532		-175'339

Source: UNCTAD, based on COMTRADE.

5. Impact of the change in definition on imports.

On the import side, China tops the list in terms of the reduction of imports of ICT goods with the new definition (table 7), with a fall of 26 billion. It is followed by the US and Germany (-15 and -12 billion US\$ respectively). A mix of traditional and new exporters complete the list of the top ten reductions in imports of such goods. The change in definition of ICT goods has had a more balanced impact on the rankings in import terms. However, the change in definition entails one significant change on the import side: the United States and China exchange spots at the top of the rankings with the United States reclaiming its position as top importer of ICT goods under the new definition. Annex 5 provides the full list of economies with the changes entailed by the new definition.

Table 7: Ten largest reductions in ICT goods imports due to change in definition

Economy	Ranking under old definition	Value of imports under old definition (US\$ million), 2009	Ranking under new definition	Value of imports under new definition (US\$ million), 2009	Change in ranking	Change in imports value
United States	2	246'168	1	230'627	1	-15'541
China	1	246'664	2	220'214	-1	-26'451
Hong Kong, China	3	154'735	3	149'537	0	-5'198
Germany	4	90'844	4	78'522	0	-12'322
Singapore	5	70'510	5	66'033	0	-4'476
Japan	6	67'983	6	62'726	0	-5'257
Netherlands	8	52'729	7	52'201	1	-527
United Kingdom	7	53'118	8	47'902	-1	-5'216
Mexico	10	49'648	9	45'938	1	-3'711
Republic of Korea	9	49'920	10	41'855	-1	-8'065
World	127	1'648'798		1'492'070		-156'728

Source: UNCTAD, based on COMTRADE.

6. Conclusions

The change in ICT goods definition proposed by the OECD in 2010 and adopted by the *Partnership on Measuring ICT for Development* entails both additions and subtractions of goods from the list. Overall, the subtraction effect dominates and leads to an 11% reduction of exports of ICT goods under the new definition, at the world level. Some products weight more heavily than others both among the added and the removed goods. The impact of the change in definition also varies by country and affects world rankings in terms of exports and imports of ICT goods. The new definition accentuates the shift towards Asia and Eastern Europe as a growing source of ICT exports, a trend which has been observed in recent years. China, in particular, is one of the few countries for which the value of exports removed from the list is almost entirely compensated by the additions under the new definition. On the other hand, traditional exporters among developed countries tend to see their exports decline the most. For a few countries with a marginal role in ICT exports, the change in definition entails a total elimination of their ICT exports. The change in definition is accompanied by a change in underlying classification from HS 2007 to HS 2002, which makes comparisons between the old list and the new list somewhat problematic as the correspondence between the two classifications is not always straightforward. Hence, time series will have to be interpreted with some caution.

ANNEX

List of annexes:

- Annex 1: Exports of ICT goods in 2009 under the old and new definition
- Annex 2: Goods removed and added into the ICT definition
- Annex 3: List of goods added to the ICT goods list after the change in definition
- Annex 4: List of goods removed from the ICT goods list after the change in definition
- Annex 5: Impacts of the change in the definition on ICT goods imports by economies.

Annex 1: Exports of ICT goods in 2009 under the old and new definition

Economy	Export of ICT goods under new definition (US\$ million), 2009	Export of ICT goods under old definition (US\$ million), 2009	Exports under new definition as share of exports under old definition	Variation due to change in definition
Albania	9	12	79%	-21%
Algeria	1	3	18%	-82%
Argentina	97	263	37%	-63%
Armenia	7	11	66%	-34%
Aruba	1	1	80%	-20%
Australia	1'646	2'342	70%	-30%
Austria	5'272	8'873	59%	-41%
Azerbaijan	2	6	30%	-70%
Bahamas	2	4	54%	-46%
Barbados	9	20	48%	-52%
Belgium	9'296	10'536	88%	-12%
Bhutan	13	0	13194309%	13194209%
Bolivia (Plurinational State of)	0	0	0%	-100%
Bosnia Herzegovina	9	24	38%	-62%
Botswana	12	14	89%	-11%
Brazil	2'320	2'711	86%	-14%
Bulgaria	498	625	80%	-20%
Burkina Faso	0	0	90%	-10%
Burundi	1	2	42%	-58%
Canada	10'944	14'328	76%	-24%
Chile	72	89	82%	-18%
China	356'301	356'441	100%	0%
Colombia	73	114	64%	-36%
Costa Rica	1'562	1'634	96%	-4%
Côte d'Ivoire	43	44	99%	-1%
Croatia	273	554	49%	-51%
Cyprus	121	126	96%	-4%
Czech Republic	16'305	18'117	90%	-10%
Denmark	3'107	4'727	66%	-34%
Djibouti	1	1	55%	-45%
Dominican Republic	150	171	88%	-12%
Ecuador	18	21	87%	-13%
El Salvador	11	110	10%	-90%
Estonia	494	620	80%	-20%
Ethiopia	6	11	57%	-43%
Faeroe Isds	0	0	53%	-47%
Fiji	5	5	87%	-13%
Finland	6'745	7'989	84%	-16%
France	19'762	27'118	73%	-27%
French Polynesia	1	3	52%	-48%
Gambia	0	0	91%	-9%
Germany	54'743	83'269	66%	-34%
Greece	496	608	82%	-18%
Guatemala	37	50	73%	-27%
Guyana	0	1	48%	-52%
Honduras	3	5	57%	-43%
Hong Kong, China	141'881	148'692	95%	-5%

Economy	Export of ICT goods under new definition (US\$ million), 2009	Export of ICT goods under old definition (US\$ million), 2009	Exports under new definition as share of exports under old definition	Variation due to change in definition
Hungary	21'465	23'516	91%	-9%
Iceland	3	17	17%	-83%
India	6'099	6'332	96%	-4%
Indonesia	6'921	6'594	105%	5%
Ireland	12'802	14'148	90%	-10%
Israel	7'854	9'540	82%	-18%
Italy	8'143	12'540	65%	-35%
Jamaica	9	10	96%	-4%
Japan	70'164	90'936	77%	-23%
Jordan	99	194	51%	-49%
Kazakhstan	27	46	58%	-42%
Kenya	51	58	88%	-12%
Kuwait	150	244	61%	-39%
Kyrgyzstan	2	4	60%	-40%
Latvia	405	439	92%	-8%
Lebanon	100	101	99%	-1%
Lithuania	410	491	84%	-16%
Luxembourg	416	759	55%	-45%
Macao, China	56	71	78%	-22%
Madagascar	10	17	55%	-45%
Malawi	3	3	91%	-9%
Malaysia	57'318	59'960	96%	-4%
Malta	965	991	97%	-3%
Mauritius	14	19	71%	-29%
Mayotte	0	0	51%	-49%
Mexico	49'764	52'892	94%	-6%
Montserrat	0	0	47%	-53%
Morocco	571	647	88%	-12%
Mozambique	5	9	59%	-41%
Nepal	0	2	18%	-82%
Netherlands	53'342	57'238	93%	-7%
New Zealand	348	480	73%	-27%
Nicaragua	4	6	82%	-18%
Nigeria	5	8	65%	-35%
Norway	1'731	2'934	59%	-41%
Oman	77	427	18%	-82%
Pakistan	34	45	76%	-24%
Paraguay	4	7	57%	-43%
Philippines	13'997	20'822	67%	-33%
Poland	12'808	13'793	93%	-7%
Portugal	1'758	1'995	88%	-12%
Republic of Korea	79'508	82'690	96%	-4%
Republic of Moldova	7	97	7%	-93%
Romania	2'910	3'429	85%	-15%
Russian Federation	838	1'997	42%	-58%
Rwanda	2	3	75%	-25%
Saint Vincent and the Grenadines	5	5	94%	-6%
Samoa	0	0	13%	-87%

Economy	Export of ICT goods under new definition (US\$ million), 2009	Export of ICT goods under old definition (US\$ million), 2009	Exports under new definition as share of exports under old definition	Variation due to change in definition
Saudi Arabia	127	602	21%	-79%
Senegal	5	7	71%	-29%
Serbia	199	238	84%	-16%
Singapore	91'442	97'492	94%	-6%
Slovakia	11'574	11'901	97%	-3%
Slovenia	519	887	59%	-41%
South Africa	677	1'062	64%	-36%
Spain	4'883	6'294	78%	-22%
Sri Lanka	24	73	33%	-67%
Sudan	2	2	98%	-2%
Sweden	11'788	14'147	83%	-17%
Switzerland	2'746	6'361	43%	-57%
Taiwan, Province of China	67'054	72'452	93%	-7%
TFYR of Macedonia	11	14	78%	-22%
Thailand	30'164	30'216	100%	0%
Trinidad and Tobago	17	23	73%	-27%
Tunisia	674	869	77%	-23%
Turkey	2'033	2'362	86%	-14%
Ukraine	438	659	66%	-34%
United Kingdom	23'400	32'036	73%	-27%
United Republic of Tanzania	12	19	66%	-34%
United States	113'157	145'159	78%	-22%
Uruguay	5	9	49%	-51%
Venezuela	6	29	21%	-79%
Yemen	3	7	44%	-56%
Zambia	4	5	73%	-27%
Zimbabwe	13	14	98%	-2%
World	1'404'532	1'579'871	89%	-11%

Annex 2: Goods removed and added into the ICT definition

Economy	Exports of added goods (US\$ million), 2009	Removed goods (US\$ million)	Net effect of new list (US\$ million)
Albania	0	3	-3
Algeria	0	2	-2
Argentina	1	168	-166
Armenia	0	4	-4
Aruba	0	0	0
Australia	105	800	-696
Austria	244	3'845	-3'601
Azerbaijan	0	5	-5
Bahamas	0	2	-2
Barbados	1	11	-10
Belarus	6	77	-71
Belgium	1'050	2'290	-1'240
Bhutan	13	0	13
Bolivia (Plurinational State of)	0	0	0
Bosnia Herzegovina	0	15	-15
Botswana	1	2	-2
Brazil	110	500	-391
Bulgaria	9	136	-127
Burkina Faso	0	0	0
Burundi	0	1	-1
Canada	400	3'784	-3'384
Chile	3	20	-16
China	17'055	17'195	-140
Colombia	2	43	-41
Costa Rica	1	74	-73
Côte d'Ivoire	1	1	-1
Croatia	9	290	-281
Cyprus	2	7	-5
Czech Republic	331	2'143	-1'811
Denmark	206	1'826	-1'619
Djibouti	0	0	0
Dominican Republic	0	21	-21
Ecuador	1	4	-3
El Salvador	0	100	-100
Estonia	2	128	-126
Ethiopia	0	5	-5
Faeroe Isds	0	0	0
Fiji	0	1	-1
Finland	80	1'324	-1'244
France	1'408	8'764	-7'356
French Polynesia	0	1	-1
Gambia	0	0	0
Germany	6'123	34'648	-28'525
Greece	47	159	-111
Guatemala	1	15	-13
Guyana	0	0	0
Honduras	0	2	-2

Economy	Exports of added goods (US\$ million), 2009	Removed goods (US\$ million)	Net effect of new list (US\$ million)
Hong Kong, China	4'406	11'217	-6'811
Hungary	539	2'590	-2'051
Iceland	0	14	-14
India	595	828	-233
Indonesia	895	569	327
Ireland	568	1'914	-1'346
Israel	49	1'735	-1'686
Italy	314	4'711	-4'397
Jamaica	1	1	0
Japan	2'169	22'941	-20'772
Jordan	7	101	-95
Kazakhstan	2	21	-19
Kenya	3	10	-7
Kuwait	2	96	-94
Kyrgyzstan	0	2	-2
Latvia	5	39	-34
Lebanon	4	5	-2
Lithuania	20	101	-80
Luxembourg	8	352	-343
Macao, China	3	18	-15
Madagascar	1	8	-8
Malawi	0	0	0
Malaysia	1'019	3'661	-2'642
Malta	4	30	-26
Mauritius	0	6	-5
Mayotte	0	0	0
Mexico	2'041	5'169	-3'128
Montserrat		0	0
Morocco	7	82	-75
Mozambique	2	5	-4
Nepal		1	-1
Netherlands	6'490	10'386	-3'896
New Zealand	19	151	-132
Nicaragua	0	1	-1
Nigeria	0	3	-3
Norway	15	1'218	-1'203
Oman	0	351	-351
Pakistan	1	12	-11
Paraguay	0	3	-3
Peru	1	7	-7
Philippines	56	6'882	-6'826
Poland	41	1'026	-985
Portugal	27	265	-237
Republic of Korea	822	4'005	-3'183
Republic of Moldova	0	90	-90
Romania	6	525	-519
Russian Federation	35	1'195	-1'160
Rwanda	0	1	-1
Saint Vincent and the Grenadines	0	0	0

Economy	Exports of added goods (US\$ million), 2009	Removed goods (US\$ million)	Net effect of new list (US\$ million)
Samoa	0	0	0
Saudi Arabia		475	-475
Senegal	0	2	-2
Serbia	6	45	-39
Singapore	2'235	8'284	-6'050
Slovakia	260	587	-327
Slovenia	25	392	-368
South Africa	27	412	-385
Spain	297	1'708	-1'411
Sri Lanka	0	49	-49
Sudan	0	0	0
Sweden	494	2'854	-2'360
Switzerland	112	3'728	-3'615
Taiwan, Province of China	193	5'590	-5'398
TFYR of Macedonia	1	4	-3
Thailand	1'249	1'301	-52
Trinidad and Tobago	0	6	-6
Tunisia	3	198	-196
Turkey	26	356	-329
Ukraine	3	225	-222
United Kingdom	1'246	9'881	-8'636
United Republic of Tanzania	0	6	-6
United States	5'175	37'177	-32'001
Uruguay	0	5	-5
Venezuela	0	23	-23
Yemen	1	5	-4
Zambia	0	1	-1
Zimbabwe	0	0	0
World	58'742	234'081	-175'339

Annex 3: List of goods added to the ICT goods list after the change in definition

HS 2007		HS 2002		HS 1996	
Product code	Description	Product code	Description	Product code	Description
844331	'Machines which perform two/more of the functions of printing, copying/facsimile transmission, capable of connecting to an automatic data processing machine/to a network	844351	'Ink-jet printing machines	844351	'Ink-jet printing machines
844332	Other printers, copying machines & facsimile machines, whether/not combined , exclud the ones which perform two/more of the functions of printing, copying/facsimile transmission; capable of connecting to an automatic data processing machine/to a network	900911	'Electrostatic photocopying app. op. by repr. the original image directly onto the copy (direct process)	900911	'Electrostatic photo-copyers, direct process
		900912	'Electrostatic photocopying app. op. by repr. the original image via an intermediate onto the copy (indirect process)	900912	'Electrostatic photo-copyers, indirect process
847290	Other office machines (eg. hectograph/stencil duplicating machines, addressing machines, automatic banknote dispensers, coin-sorting machines, coin-counting/wrapping machines, pencil-sharpening machines, perforating/stapling machines), exclud. 8472.10 & 8	847290	Office machines (e.g., auto. banknote dispensers, coin-sorting/counting/wrapping machines, pencil-sharpening machines, perforating/stapling machines), n.e.s. in 84.72	847290	Office machines, nes
		847220	'Addressing machines & address plate embosing machines	847220	'Addressing machines & address plate embosing machines
852359	Other semi-conductor media, for the recording of sound/of other phenomena, but excl. products of Ch. 37., other than "Smart Cards" & Solid-state non-volatile storage devices	852410	Gramophone records	852410	Recorded gramophone records
852380	Discs, tapes, solid-state non-volatile storage devices, "smart cards" & other media for the recording of sound/of other phenomena, whether/not recorded, incl. matrices & masters for the production of discs, but excl. products of Ch.37., other n.e.s.	852499	"Recorded media for sound/oth. similarly recorded phenomena, incl. matrices & masters for the production of records, n.e.s. in 85.24	852499	'Recorded media for sound
		854890	Electrical parts of mach./app., n.e.s. in Ch.85	854890	Electrical parts of mach./app., n.e.s. in Ch.85
901320	'Lasers (excl. laser diodes)	901320	Lasers (excl. laser diodes)	901320	'Lasers, other than laser diodes
950410	'Video games of a kind used with a television receiver	950410	'Video games of a kind used with a television receiver	950410	'Video games of a kind used with a television receiver

Annex 4: List of goods removed from the ICT goods list after the change in definition

HS 2007	HS 2002	HS 1996	HS 2007 Description
Telecommunications equipment			
854420	854420	854420	Co-axial cable & oth. co-axial elec. conductors
854470	854470	854470	Optical fibre cables
Electronic components			
850431	850431	850431	Electrical transformers (excl. dielectric) having a power handling capacity not >1kVA
850450	850450	850450	Inductors, n.e.s. (excl. for cathode ray tubes)
850490	850490	850490	Parts of the machines of 85.04
853221	853221	853221	Fixed electrical capacitors, other than those of 8532.10
853224	853224	853224	Fixed electrical capacitors, other than those of 8532.10, ceramic dielectric, multilayer
853230	853230	853230	Variable/adjustable (pre-set) electrical capacitors
853310	853310	853310	Fixed carbon electrical resistors, composition/film types
853321	853321	853321	Fixed electrical resistors (excl. fixed carbon resistors, composition/film types), for a power handling capacity not >20W
853329	853329	853329	Fixed electrical resistors (excl. fixed carbon resistors, composition/film types)
853331	853331	853331	Wirewound variable electrical resistors, incl. rheostats & potentiometers (excl. heating resistors), for a power handling capacity not >20W
853339	853339	853339	Wirewound variable electrical resistors, incl. rheostats & potentiometers (excl. heating resistors)
853340	853340	853340	Electrical resistors (excl. heating resistors, light dependent resistors)
853390	853390	853390	Parts of the electrical resistors of 85.33
854390	854270	854250	Parts of electrical machines and apparatus nes.
Audio and video equipment			
852329			Magnetic media for the recording of sound/of other phenomena, but excl. products of Ch. 37., other than cards incorporating a magnetic stripe
	852311	852311	Unrecorded magnetic tapes, width < 4 mm
	852312	852312	Unrecorded magnetic tapes, width 4-6.5 mm
	852313	852313	Unrecorded magnetic tapes, width > 6.5 mm
	852320	852320	Unrecorded magnetic discs

HS 2007	HS 2002	HS 1996	HS 2007 Description
	852440	852440	Magnetic tapes for reproducing phenomena other than sound or image
	852451	852451	Other magnetic tapes (excl. of 8524.40) :-- Of a width not exceeding 4 mm
	852452	852452	Other magnetic tapes (excl. of 8524.40) :-- Of a width exceeding 4 mm but not exceeding 6.5 mm
	852453	852453	Other magnetic tapes (excl. of 8524.40) :-- Of a width exceeding 6.5 mm
Other ICT goods			
846900	-	-	Typewriters other than printers of heading 84.43; word-processing machines
	846911	846911	Word-processing machines
847010	847010	847010	Electronic calculators capable of operation without an external source of electric power and pocket-size data recording, reproducing and displaying machines with calculating functions
847021	847021	847021	Other electronic calculating machines incorporating a printing device
847029	847029	847029	Other electronic calculating machines
847090	847040	847040	Accounting machines
847310	847310	847310	Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines of heading No. 84.69
847321	847321	847321	Parts and accessories of the electronic calculating machines of subheading No. 8470.10, 8470.21 or 8470.29
Instruments and appliances for measuring, checking, testing, navigating and other purposes			
852691	852691	852691	Radio navigational aid apparatus
852692	852692	852692	Radio remote control apparatus
	901041	901041	Apparatus for the projection or drawing of circuit patterns on sensitised semiconductor materials - direct write-on-wafer apparatus
848620			Machines & apparatus for the manufacture of semiconductor devices/of electronic integrated circuits
	901042	901042	Apparatus for the projection or drawing of circuit patterns on sensitised semiconductor materials - step and repeat aligners
	901049	901049	Apparatus for the projection or drawing of circuit patterns on sensitised semiconductor materials - other
901410	901410	901410	Direction finding compasses
901420	901420	901420	Instruments and appliances for aeronautical or space navigation (other than compasses)
901480	901480	901480	Other navigational instruments and appliances
901490	901490	901490	Parts and accessories of direction finding compasses, other navigational instruments and appliances
901540	901540	901540	Photogrammetrical surveying instruments and appliances
901580	901580	901580	Other surveying instruments and appliances

HS 2007	HS 2002	HS 1996	HS 2007 Description
902410	902410	902410	Machines and appliances for testing the hardness, strength, compressibility, elasticity or other mechanical properties of materials, metals
902480	902480	902480	Other machines and appliances for testing the hardness, strength, compressibility, elasticity or other mechanical properties of materials
902490	902490	902490	Parts and accessories for machines and appliances for testing the hardness, strength, compressibility, elasticity or other mechanical properties of materials
902620	902620	902620	Instruments and apparatus for measuring or checking the pressure of liquids or gases, excluding instruments and apparatus of heading Nos. 9014, 9015, 9028 or 9032
902710	902710	902710	Instruments and apparatus for physical or chemical analysis, gas or smoke analysis apparatus
902730	902730	902730	Spectrometers, spectrophotometers and spectrographs using optical radiations (UV, visible, IR)
	902740	902740	Instruments and apparatus for measuring or checking quantities of heat, sound or light, exposure meters
902780	902780	902780	Other instruments and apparatus for physical or chemical analysis
902750	902750	902750	Other instruments and apparatus using optical radiations (UV, visible, IR)
902810	902810	902810	Gas meters
902820	902820	902820	Liquid meters
902830	902830	902830	Electricity meters
902890	902890	902890	Parts for gas, liquid or electricity supply or production meters, including calibrating meters therefor
902910	902910	902910	Revolution counters, production counters, taximeters, mileometers, pedometers and the like
902920	902920	902920	Speed indicators and tachometers; stroboscopes
902990	902990	902990	Parts and accessories for revolution counters, production counters, taximeters, mileometers, pedometers and the like; speed indicators and tachometers, other than those of heading No. 90.14 or 90.15; stroboscopes
903010	903010	903010	Instruments and apparatus for measuring or detecting ionising radiations
903020	903020	903020	Cathode-ray oscilloscopes and cathode-ray oscillographs
		903083	Other instruments for measuring or checking semiconductor wafers or devices with a recording device
903032			Multimeters with a recording device
903084			Other instruments & apparatus specially designed for telecommunications, with a recording device
903031	903031	903031	Multimeters without a recording device
903033			
903039	903039	903039	Other instruments and apparatus for measuring or checking voltage, current, etc. without a recording device
903040	903040	903040	Other instruments and apparatus, specially designed for telecommunications (for example, cross-talk meters, gain measuring instruments, distortion factor meters, psophometers)
903082	903082	903082	Other instruments for measuring or checking semiconductor wafers or devices
903089	903083		Other instruments & apparatus specially designed for telecommunications
903110	903110	903110	Measuring or checking instruments, appliances and machines n.e.s, machines for balancing mechanical parts
903120	903120	903120	Measuring or checking instruments, appliances and machines n.e.s, test benches

HS 2007	HS 2002	HS 1996	HS 2007 Description
903149	903130	903130	Measuring or checking instruments, appliances and machines n.e.s, profile projectors
903141	903141	903141	Other optical instruments and appliances, for inspecting semiconductor wafers or devices or for inspecting photomasks or reticles used in manufacturing semiconductor devices
903180	903180	903180	Other measuring or checking instruments, appliances and machines, n.e.s.
903210	903210	903210	Thermostats
903220	903220	903220	Manostats
852610	852610	852610	Radar apparatus
Industrial process control equipment			
903190	903190	903190	Parts and accessories for measuring or checking instruments, appliances and machines, n.e.s.
903289	903289	903289	Other automatic regulating or controlling instruments and apparatus, n.e.s.
903290	903290	903290	Parts and accessories for automatic regulating or controlling instruments and apparatus
Medical and surgical equipment and orthopaedic appliances			
901811	901811	901811	Electro-cardiographs
901812	901812	901812	Ultrasonic scanning apparatus
901813	901813	901813	Magnetic resonance imaging apparatus
901814	901814	901814	Scintigraphic apparatus
901819	901819	901819	Other electro-diagnostic apparatus (including apparatus for functional exploratory examination or for checking physiological parameters)
902212	902212	902212	Computed tomography apparatus
902213	902213	902213	Other apparatus based on the use of X-rays, for dental uses
902214	902214	902214	Other apparatus based on the use of X-rays, for medical, surgical or veterinary uses
902219	902219	902219	Other apparatus based on the use of X-rays, for other uses
Optical media			
852340			Optical media for the recording of sound/of other phenomena, but excl. products of Ch. 37.
	852431	852431	Discs for laser reading systems, for repr. phenomena other than sound/image
	852432	852432	Discs for laser reading systems, for repr. sound only
	852439	852439	Discs for laser reading systems (excl. those for repr. phenomena other than sound/image & those for repr. sound only)

Annex 5: Impacts of the change in the definition on ICT goods imports by economies.

Economy	Ranking under new definition	Value of imports under new definition (US\$ million), 2009	Ranking under old definition	Value of imports under old definition (US\$ million), 2009	Change in imports value	Change in ranking
Afghanistan	121	11	121	13	-2	0
Albania	87	218	89	248	-30	2
Algeria	52	1'460	51	1'852	-392	-1
Argentina	42	4'008	41	4'597	-589	-1
Armenia	99	132	99	162	-29	0
Aruba	111	57	112	61	-4	1
Australia	19	16'699	19	18'675	-1'977	0
Austria	32	8'148	29	10'537	-2'390	-3
Azerbaijan	80	333	76	530	-197	-4
Bahamas	108	66	108	82	-16	0
Barbados	107	86	107	99	-13	0
Belgium	24	13'595	22	16'017	-2'422	-2
Bhutan	116	28	117	32	-3	1
Bolivia (Plurinational State of)	95	160	92	214	-54	-3
Bosnia Herzegovina	85	264	83	337	-73	-2
Botswana	88	217	88	261	-44	0
Brazil	27	12'001	25	14'771	-2'770	-2
Bulgaria	53	1'330	52	1'525	-195	-1
Burkina Faso	117	27	116	37	-10	-1
Burundi	112	36	115	38	-2	3
Canada	14	27'012	14	32'468	-5'456	0
Chile	46	2'689	46	3'001	-312	0
China	2	220'214	1	246'664	-26'451	-1
Colombia	45	2'899	45	3'301	-403	0
Costa Rica	49	1'976	49	2'085	-109	0
Côte d'Ivoire	84	274	85	314	-40	1
Croatia	55	1'118	57	1'385	-267	2
Cyprus	76	412	78	459	-47	2
Czech Republic	20	16'458	20	17'856	-1'399	0
Denmark	34	6'561	34	7'818	-1'257	0
Djibouti	113	35	111	69	-34	-2
Dominican Republic	70	563	69	677	-114	-1
Ecuador	59	973	61	1'162	-189	2
El Salvador	79	364	80	421	-57	1
Estonia	67	636	65	756	-120	-2
Ethiopia	68	604	67	723	-119	-1
Faeroe Isds	115	33	113	42	-9	-2
Fiji	109	66	110	77	-11	1
Finland	35	6'190	35	7'130	-940	0
France	11	38'233	11	43'875	-5'642	0
French Polynesia	106	93	105	121	-28	-1
Gambia	122	8	122	12	-4	0
Germany	4	78'522	4	90'844	-12'322	0
Greece	43	3'659	43	4'041	-382	0
Grenada	119	12	119	14	-2	0
Guatemala	64	669	64	774	-105	0

Economy	Ranking under new definition	Value of imports under new definition (US\$ million), 2009	Ranking under old definition	Value of imports under old definition (US\$ million), 2009	Change in imports value	Change in ranking
Guyana	114	35	114	39	-4	0
Honduras	78	373	82	404	-31	4
Hong Kong, China	3	149'537	3	154'735	-5'198	0
Hungary	21	15'822	21	17'121	-1'299	0
Iceland	97	143	96	186	-43	-1
India	17	20'749	17	21'743	-994	0
Indonesia	30	8'619	30	9'400	-780	0
Ireland	31	8'290	32	9'043	-753	1
Israel	38	4'605	38	5'391	-786	0
Italy	15	24'677	15	28'523	-3'846	0
Jamaica	94	179	95	199	-20	1
Japan	6	62'726	6	67'983	-5'257	0
Jordan	65	653	66	749	-96	1
Kazakhstan	61	829	58	1'337	-508	-3
Kenya	66	642	68	705	-63	2
Kiribati	124	6	123	6	-1	-1
Kyrgyzstan	110	64	109	79	-15	-1
Latvia	72	526	71	585	-59	-1
Lebanon	74	517	72	583	-65	-2
Lithuania	62	708	63	804	-97	1
Luxembourg	58	974	60	1'183	-210	2
Macao, China	73	522	75	542	-20	2
Madagascar	102	113	104	123	-10	2
Malawi	104	107	106	108	-2	2
Malaysia	12	37'212	13	39'794	-2'583	1
Malta	69	568	70	623	-55	1
Mauritius	90	196	91	224	-28	1
Mayotte	118	24	118	27	-3	0
Mexico	9	45'938	10	49'648	-3'711	1
Montserrat	126	1	126	1	0	0
Morocco	51	1'769	50	2'080	-311	-1
Mozambique	105	106	102	146	-40	-3
Nepal	92	193	94	206	-13	2
Netherlands	7	52'201	8	52'729	-527	1
New Zealand	48	2'202	47	2'561	-359	-1
Nicaragua	98	135	100	159	-24	2
Nigeria	47	2'264	48	2'494	-230	1
Norway	37	5'165	37	6'369	-1'204	0
Oman	77	400	74	567	-167	-3
Pakistan	60	969	59	1'230	-262	-1
Panama	71	543	73	576	-34	2
Paraguay	50	1'781	53	1'514	267	3
Philippines	22	15'231	23	15'877	-646	1
Poland	23	13'909	24	15'591	-1'683	1
Portugal	41	4'371	40	4'845	-474	-1
Republic of Korea	10	41'855	9	49'920	-8'065	-1
Republic of Moldova	101	128	97	169	-42	-4
Romania	39	4'490	39	5'160	-670	0
Russian Federation	26	12'435	26	14'546	-2'111	0

Economy	Ranking under new definition	Value of imports under new definition (US\$ million), 2009	Ranking under old definition	Value of imports under old definition (US\$ million), 2009	Change in imports value	Change in ranking
Rwanda	100	130	101	155	-25	1
Saint Vincent and the Grenadines	120	12	120	14	-2	0
Samoa	125	3	125	5	-2	0
Sao Tome and Principe	123	6	124	6	0	1
Saudi Arabia	40	4'419	42	4'452	-33	2
Senegal	91	195	93	212	-17	2
Serbia	63	704	62	842	-139	-1
Singapore	5	66'033	5	70'510	-4'476	0
Slovakia	29	8'629	31	9'268	-639	2
Slovenia	56	1'109	55	1'391	-282	-1
South Africa	36	5'533	36	6'502	-968	0
Spain	18	18'567	18	20'681	-2'113	0
Sri Lanka	82	305	84	335	-30	2
Sudan	83	286	81	413	-128	-2
Sweden	25	12'677	27	14'427	-1'750	2
Switzerland	28	8'896	28	11'255	-2'359	0
Taiwan, Province of China	13	36'339	12	42'231	-5'892	-1
TFYR of Macedonia	86	236	86	284	-48	0
Thailand	16	21'008	16	24'482	-3'474	0
Trinidad and Tobago	89	212	87	284	-72	-2
Tunisia	54	1'139	54	1'462	-323	0
Turkey	33	7'078	33	8'586	-1'508	0
Ukraine	57	993	56	1'386	-393	-1
United Kingdom	8	47'902	7	53'118	-5'216	-1
United Republic of Tanzania	81	326	79	457	-131	-2
United States	1	230'627	2	246'168	-15'541	1
Uruguay	75	439	77	493	-54	2
Venezuela	44	3'180	44	3'652	-472	0
Yemen	93	182	90	225	-43	-3
Zambia	103	113	103	143	-30	0
Zimbabwe	96	144	98	167	-23	2
World		1'492'070		1'648'798	-156'728	



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For more information about UNCTAD's work on ICT for Development please contact:

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