



ECIPE WORKING PAPER • No. 06/2008

Trade in Information Technology Goods: Adapting the ITA to 21st Century Technological Change

Iana Dreyer and Brian Hindley¹

Iana Dreyer (iana.dreyer@ecipe.org) is a Trade Policy Analyst at ECIPE and Brian Hindley (brian.hindley@ecipe.org) is a Senior Fellow of ECIPE and Emeritus Reader in Trade Policy Economics at the London School of Economics

ABSTRACT

TRADE IN TECHNOLOGY goods has increased rapidly. The twelve-year-old Information Technology Agreement (ITA) in the WTO has facilitated this process and has contributed to the dissemination of technology across the world. Yet the ITA needs to be improved to provide for further trade liberalization of ICT (information and communications technology) goods. The ITA has weaknesses that must be addressed if the ITA is to maintain its relevance.

A fundamental problem in the ITA is its product coverage, in particular its exclusion of key consumer electronic products, which was largely at the insistence of the EU. In an era of technological “convergence” among ICT products, this exclusion has the potential to progressively erode ITA coverage. A further problem is that the ITA is based on a rigid positive listing of products that poses problems with multifunctional goods. These matters form the background of a current dispute in the WTO.

Furthermore, the ITA imposes no discipline on non-tariff barriers to ICT trade. The mechanisms the Agreement put in place to expand coverage have failed, and this paper proposes new negotiations leading to a better-designed ITA, to start after the dispute in the WTO is settled. These should guarantee a balance of interests involving at least the EU, the US, Japan, and China. A new “grand bargain” will entail a movement to free trade in consumer electronics “paid for” by reductions in non-tariff barriers to trade in ICT goods.



JEL Code: F13, F14, F53, O14, O24

Keywords: World Trade Organization, Information Technology Agreement, trade in information technology, customs classification, dispute settlement

www.ecipe.org

info@ecipe.org Rue Belliard 4-6, 1040 Brussels, Belgium Phone +32 (0)2 289 1350

INTRODUCTION

A REVOLUTION IN Information and Communication Technology (ICT) has unfolded in the last few decades, contributing to a transformation of the world economy. By accelerating globalization, this revolution has diminished the effect of distance on economic integration, contributed to the reorganization of production processes, and facilitated the integration of many developing countries into the world economy. The twelve-year-old Information Technology Agreement (ITA) within the World Trade Organization (WTO) has been important in supporting this process and in making new technologies accessible across the globe. The ITA, however, now needs reform if it is to be relevant to twenty-first century technology and trade.

The ITA, an agreement that eliminates tariffs on ICT² goods, was signed at the Ministerial Meeting in Singapore in December 1996, and came into force in the spring 1997. The ITA is the only exercise in multilateral liberalization of trade in goods undertaken in the WTO that has come to fruition since the end of the Uruguay Round in 1994. It is a so-called “critical mass” agreement that liberalizes trade among the most important trading powers in a given sector, and automatically extends the benefits of tariff eliminations to all other WTO members.

Since 1997, trade in ICT goods has exploded. WTO calculations show that exports of ICT goods more than doubled between 1996 and 2005³. With an average annual growth rate of 8.5%, ICT trade has expanded faster than world trade as a whole, and the share of ICT goods in global trade rose from 12.2% in 1997 to more than 14% in 2005. The ITA has facilitated this growth. It allows, for example, computers (and most of their peripherals), mobile phones, and an important set of inputs, such as semi-conductors, to be traded duty-free. It has therefore contributed to significant productivity gains and growth in the developed and the developing world. Tariff-free trade has offered many developing and transition economies the opportunity to grow by entering global ICT production networks.

A WTO dispute between the major ITA members has drawn renewed attention to the ITA. In June 2008, the United States, Japan and Taiwan filed a case against the European Union (EU), for allegedly breaching its ITA obligations. The EU has levied tariffs on products that the complainants argue should have duty-free entry under the terms of the ITA. The goods in question are flat panel displays (LCD monitors), “input and output units” and facsimile machines (multifunction printers), and set top boxes with a communication function. The EU, however, believes that the goods in question are not covered by the ITA. The WTO has thus been given the task to determine how the ITA agreement should be interpreted if a customs territory, in this case the EU, believes that a product covered by the ITA has too many non-ITA add-ons to still be regarded as an ITA product.

The outcome of the case will give guidance on how the ITA will accommodate technological development in the future. At the heart of the dispute is the question of how to treat increasingly complex multifunctional products that combine features of products that are in the ITA with features of other products that were left out of the ITA. Are these to be considered duty-free ITA products or are these other products that could be classified as non-ITA goods and possibly be subjected to duties? With continued technological change, this problem is likely to become more widespread. Indeed, competition between platform technologies has increased. Many platforms

* The ECIPE Working Paper series presents ongoing research and work in progress. These Working Papers might therefore present preliminary results that have not been subject to the usual review process for ECIPE publications. We welcome feedback and recommend you to send comments directly to the author(s).

lead to a combination of different features within a single good. The ITA has facilitated a trend called “convergence”. By providing a competitive trade environment it has supported the development of ever better and ever more affordable ICT products. It is ironic that developments supported by the ITA might undermine its integrity.

As the trend towards convergence between different ICT functions will continue to lead to the emergence of products that combine features of ITA and non-ITA goods, the question is whether it is relevant to continue trading on the basis of the ITA as it is. The ITA has several weaknesses. Three of them will be at the centre of this paper. First, it covers an insufficient number of ICT goods. Second, its rigid product structure does not automatically accommodate all forms of technological change. Third, the ITA does not provide for any reduction in non-tariff barriers (NTBs) to trade in ICT goods, which are a major impediment to their free flow.

The consequence of the ITA’s insufficient product coverage is unpredictability in the tariff status of new or technologically-developed ICT products. Such unpredictability means that new products coming to the market thanks to technological development could see duties imposed on them when traded across borders. Such a development not only impedes trade, but also the dissemination of new technology. International trade has long been recognized as a factor of dynamic economic gains, and one of the main vehicles has been technology transfer through trade. The adoption of new technologies directly influences productivity and therefore enhances economic growth.⁴ The role of trade in transmitting new technology has been especially strong in developing countries, but the same mechanisms are at work in developed economies as well.⁵

In this paper, we argue that in order for the ITA to provide greater coverage and a predictable trading environment for ICT goods, it should be updated. New negotiations are needed: the core problems of the ITA cannot be solved by any other means. The WTO dispute settlement body could clarify procedures to determine how a good should be classified if it combines ITA-covered functions with functions that are not covered by the ITA. The WTO can solve the immediate cases at hand. There is, however, a limit to what dispute settlement can achieve. The WTO cannot give a principled ruling that responds to all the problems arising from rapid technological development of products in an Agreement with limited product coverage.

The EU responded to the complaint filed against it in the WTO with an offer to negotiate an update of the ITA, with the aim in particular to include multifunctional goods, as well as non-tariff barriers. Other ITA members are sceptical and believe it is a tactic to avoid litigation altogether and to be confronted with its practices under the existing agreement. One perception is that the EU wants others to pay a price – i.e. grant a trade concession – for it to comply with its own commitments. Regardless of the EU’s rationale in its call for new negotiations, it would be wise to wait until the WTO ruling is issued before starting new negotiations -- the ruling could help to determine the agenda of negotiations and shape the structure of a bargain.

The Ministerial Agreement of 1996 called for new negotiations to expand product coverage. Negotiations undertaken in 1997-1998, the so-called ITA 2 negotiations, failed. In recent years, efforts to upgrade the ITA have been absorbed into the Doha Round, but have shared the Round’s lack of success.

This paper undertakes two main tasks. First, it provides an analysis of the ITA, its genesis, its structure and its recent history. It also examines the ITA’s current limitations. Second, it proposes concrete steps to reform the ITA, expand its coverage and adjust it to the realities of technological development and trade in technology goods in the 21st century.

THE ITA – ITS VIRTUES AND ITS LIMITS

THE ITA PROVIDES for the full and bound elimination of tariffs on a broad range of ICT products.

Today, according to the WTO, the ITA covers 97% of world trade in ITA goods. It includes 43 countries and customs territories if the EU is counted as one (see Annex 1). Members eliminate duties on a non-discriminatory basis (most-favoured-nation or MFN basis), extending thus these benefits to all WTO members, be they parties to the ITA or not. The agreement involves six broad categories of ICT products: computers, telecommunications equipment, semiconductors, semiconductor manufacturing equipment, software and scientific instruments. However, it excludes many consumer electronics products, and it does not address non-tariff barriers.

The product coverage of the ITA is summarized in Box 1. It is broadly understood to cover trade in ICT goods. The OECD defines ICT goods thus:

“ICT goods must either be intended to fulfil the function of information processing and communication by electronic means, including transmission and display, OR use, electronic processing to detect, measure and/or record physical phenomena, or to control a physical process.”⁶

The ITA agreement calls for new negotiations to extend product coverage. So-called non-tariff barriers (NTBs) were excluded in the initial round of negotiations of the ITA, as they were considered an overly complex and politically sensitive topic that would hamper the negotiations on tariffs. The ITA however calls upon the parties to consult on NTBs.

The ITA lists the products it covers in two attachments, A and B. *Attachment A* lists specific products that correspond to the classifications at the 6-digit level in the international Harmonized System (HS) handled by the World Customs Organization (WCO). An Annex to the HS explains its basic principles. The HS is complemented by General Rules of Interpretation as a guideline for national customs authorities in their classification practices. Annex 2 of this paper lists three core General Rules. Under the HS system, commitments made at the 6-digit-level underline to what advanced degree of precision item-per-item commitments were made in the ITA.

Attachment B was set up after divergences appeared in the 1996 negotiations over the elimination of tariffs on complex multifunctional products. The issue was how to classify them in the HS, which was not a straightforward answer, especially since the HS changes regularly. Indeed, at the time of ITA negotiations, HS 1997 was in the making. Attachment B is therefore a “positive list” of products in plain language that should be covered by the ITA regardless of the way countries classify them at customs.

The ITA is one of the few sector-specific agreements reached after completion of the Uruguay Round in 1994. It is an unusual agreement in the GATT/WTO galaxy. Like several other agreements, it is signed by a subset of WTO members and is open to others. Such agreements include the plurilateral Agreement on Civil Aviation and the Government Procurement Agreement (GPA). Yet the ITA distinguishes itself from these plurilateral agreements by the fact that all concessions granted between ITA members are extended to all WTO members, unconditionally, on an MFN basis. It therefore resembles the agreements on Basic Telecommunications and Financial Services, both signed in 1997, which are an integral part of the GATS. However, these services agreements allow MFN exemptions, which the ITA does not. The ITA is also a stand-alone agreement on trade in goods that is not annexed to the GATT. The uniqueness of the ITA is further highlighted by the fact that it completely eliminates its members’ tariffs, which were reduced to zero, and bound at zero.

BOX 1. OVERVIEW OF GOODS COVERED BY THE ITA**Computers**

- supercomputers, mainframe computers, workstations, personal computers, laptops;
- computer peripheral devices, including keyboards, monitors, hard disk drives, CD-ROM drives, scanners, plotters, multimedia upgrade kits;

Telecommunications Equipment

- telephone sets, cordless phones, video phones;
- mobile phones, pagers;
- telephone answering machines, facsimile machines, modems and parts thereof;
- switching equipment;
- radio-broadcasting and television transmission and reception apparatus;
- insulated optical fibre cable;
- computer network equipment (LAN and WAN equipment);

Semiconductors

- all semiconductors, including memory chips microprocessors, ASIC;

Semiconductor Manufacturing Equipment

- vapour deposition apparatus, spin dryers, etching and stripping apparatus, lasercuts, sawing and dicing machines, deposition machines, spinners, encapsulation machines, furnaces and heaters, ion implanters
- handling and transport apparatus;
- measuring and checking instruments;
- parts and accessories;

Software

- application-type software, multimedia software products;
- unrecorded "floppy" disks and other software media

Scientific Instruments and Other Products

- measuring and checking devices;
- chromatographs, spectrometers, optical radiation devices, electrophorensic equipment;
- Passive and active components, including capacitors, resistors, certain electronic switches, certain connection devices, certain electric conductors;
- automatic teller machines, cash registers, calculators, electronic translators; digital still cameras and certain photocopiers;

Other

- e.g. digital still cameras

Adapted from Fleiss and Sauv  (1998)

WHY THE ITA APPEARED

THE ITA EMERGED under special circumstances. These were shaped by three factors: a particular coalition of export-oriented interests, special circumstances following the conclusion of the long Uruguay Round (1986-1994), and an unfolding ICT revolution.

First, the ITA is the result of an astounding coalition of interests.⁷ Major ICT exporting companies in the so-called Quad (US, EU, Japan, Canada) had a strong interest in improving their international market access. An alliance of semiconductor and other ICT industries in the US, Japan and Europe pushed their trade authorities to go for a zero-for-zero exercise, a method tested already during the Uruguay round on products such as pharmaceuticals.

The EU maintained high tariffs (up to 14%) on selected ICT products, in particular semiconductors, and a US objective in the ITA negotiations was to reduce or eliminate these. EU policy up to this point had been to protect its IT industries from import competition, but a much-noted shift in its policies occurred which started to focus on providing cheaper inputs to a fast-growing, productivity-enhancing ICT industry.

Other factors influenced the shift in the EU's position. In 1995 Finland and Sweden (along with Austria) joined the European Union, and these two Nordic countries had (and have) a strong telecommunications sector with export-oriented companies that pushed the EU towards a free-trade position. Finland and Sweden joined the EU with lower tariffs (bound and actual) than the EU in several, if not most, ICT goods, and they negotiated an interim agreement that allowed these two countries to keep lower tariffs, especially for the import of inputs from Asia. This interim agreement, which was due to expire 12 months after their accession to the EU, gave Finland and Sweden a strong motivation to push for a new EU policy around the time the ITA negotiations started. The interim agreement also added an extra motivation for other EU countries to agree to a joint effort to reduce or remove tariffs reciprocally with other countries; Finnish and Swedish companies clearly had an advantage over other EU producers as they could access cheaper inputs.

Furthermore, in several EU countries and in the United States, telecommunication markets had been deregulated in the early 1990s. Deregulation created a stronger market-based case for liberalization of world trade. New companies were born and several obstacles that existed to trade in ICT goods generally, especially various forms of government-procurement regulations and practices that favoured local sourcing, were removed. With these reforms achieved or under way, the focus shifted to other barriers: tariffs.

Other countries with a considerable interest in eliminating tariffs were the US and Japan, both of which have large and export-oriented high-tech sectors. Fast-growing Asian "Tigers" were eager to see tariff reductions for many unskilled labour-intensive ICT product exports.

A significant number of ICT products, however, were left out. The EU wished to protect Dutch and French TV producers: it also insisted on keeping out, as much as possible, consumer products. Beyond television sets, these included video cameras, DVDs and CDs. The US was protective in various areas, for example fibre optics or certain photocopiers. It was also reluctant to discuss NTBs, for reasons of expediency, negotiating mandate and institutional constraints. US firms favoured an NTB component, but the US government was sceptical of the idea that NTBs could be negotiated quickly and comprehensively. The key to the agreement was to reach a core understanding between the US and the EU. Once this was done, the United States and Japan prepared the ground for an agreement with others, not least by engaging in active diplomacy within APEC in the autumn of 1996. Box 2 provides an outline of the main interests at play during the 1996 ITA negotiations.

BOX 2. OFFENSIVE AND DEFENSIVE INTERESTS IN 1996 ITA NEGOTIATIONS AND MAJOR TRADE-OFFS ACHIEVED**USA**

- Offensive interests: reduction of EU tariffs on semiconductors and other IT products; better access to growing Asian markets; in favour of a deal restricted to tariffs
- Defensive interests: selected IT product categories or products (e.g. fibre optics)
- Outcome: gave in on selected IT goods where EU had interests, but only partially on fibre optics, and granted the EU access to the US-Japan semiconductor agreement

Japan

- Offensive interests: better market access for IT products in US, Asian and EU markets; semiconductors and consumer electronics; in favour of a deal restricted to tariffs
- Defensive interest: NTBs
- Outcome: EU was given access to the US-Japan semiconductor agreement

European Union

- Offensive interests: source cheaper inputs, in favour of a broader deal involving NTBs
- Defensive interests: initially semiconductors, certain consumer electronics (TV, video etc), software
- Outcome: access to US-Japan semiconductor agreement as compensation for opening domestic semiconductor market; compromises on e.g. software (only professional software got into agreement), and cameras (only digital still cameras allowed).

South East and East Asian exporters

- Offensive interests: better market access to all major industrialized countries, especially high-tariff EU; particular interest in export of consumer electronics
- Defensive interests (excluding the free ports of Hong Kong and Singapore): selected IT products, generally leaning towards narrow coverage of ITA sector; other tariffs outside IT sector that could be subjected to issue-linkage from big trading partners; NTBs.
- Outcome: failed to achieve substantial market openings in key consumer electronics

Second, the ITA is also the outcome of specific political and legal circumstances. After the Uruguay Round, the US President had residual negotiating power resulting from the Uruguay Round Implementation Act.⁸ Furthermore, after the Uruguay Round, the US had adopted a negotiating approach that favoured sectoral agreements.⁹ The EU was interested in a sector-specific approach. However, its negotiating culture and the need to secure a mandate from the member states led the EU Commission to engage in strong issue-linkage. In particular, it pressed to be included in the 1996 US-Japan semiconductor agreement. The limited window of opportunity provided by the US' residual negotiating mandate, Japanese reluctance, and business urgency, excluded a negotiated elimination of NTBs to ICT goods trade, despite EU wishes.

Third, the relative ease with which the ITA was negotiated and succeeded in achieving elimination of tariffs cannot be understood without comprehension of the nature of the ICT industry in the 1990s.¹⁰ The information technology sector is a so-called "general-purpose industry", i.e., it contributes significantly to output (and also productivity growth) in other sectors and to the economy at large. Indeed, the entire economy uses its production and sees its own productivity grow thanks to the introduction of its technologies in other sectors. Productivity patterns in the late 1990s and early 2000s considerably relied on this technological change and its spill-overs.

Furthermore, the ICT-goods sector was already strongly globalizing at the time of the negotiations. The initial signatories of the ITA were major exporters. The business interests behind the agreement were strongly involved in complex patterns of trade in components. US FDI in Europe, and particular US FDI towards Asia in the ICT sector, had been rising. Free trade interests were thus ripe and ready to support and push for a rare and genuinely trade-freeing agreement.

THE ITA – A “CRITICAL MASS” AGREEMENT

THE SIGNING OF the ITA created a wave of enthusiasm in the midst of the ICT revolution and the Asian emerging market boom of the 1990s. After the drawn-out Uruguay Round of trade negotiations based on the all-or-nothing principle of the Single Undertaking, the swiftness and effectiveness of the ITA negotiations were more than welcome. After the Uruguay Round, many policy makers were advocating sectoral agreements as a means of quickly overcoming the political and institutional problems of big multilateral rounds. The United States in particular favoured what was termed a “critical mass” agreement.

The critical mass idea holds that it is possible, within the WTO, to sign trade-liberalizing agreements in specific sectors among a subset of members. Despite the geographical equalization of trade in recent decades, world trade remains limited to a group of countries. These represent the major part of global trade and investment, and are also the countries with the greatest interest in trade policy. In the critical mass approach, such countries take the lead and negotiations largely take place among them. These include the EU, the US, China, Japan, India, Korea, Brazil, Mexico, and a dozen other countries.

The benefits of liberalization could be extended to all other WTO members on a non-discriminatory (MFN) basis. In order to minimize free-riding¹¹, the condition for success is that the most important economies trading in the sector should be involved and the highest possible share of world trade covered. In the case of the ITA, the condition was that 90% of world trade in ICT goods be covered. For these agreements to be possible, strong business support, from export and import interests alike, is key to making the process run smoothly.

As discussed above, all these ingredients were present in the signing of the ITA. The agreement was negotiated swiftly in the run-up to the December 1996 WTO Singapore Ministerial. The set target of 90% of world trade coverage was reached in spring 1997 and the ITA could enter into force.

FAILURE TO EXPAND PRODUCT COVERAGE

THE ITA HOWEVER had fault lines. Negotiations were swift, but the speed came at a price: exclusions. The most problematic and contentious exclusion, insisted on by the EU, has so far been a certain number of consumer electronics goods, such as TVs, DVDs, CDs, video players, video cameras or special types of software. On many of these excluded products, the EU often applies tariffs, sometimes fairly high, such as 13.9% on televisions. The US also insisted on exclusions.

These exclusions have been a source of irritation for major Asian exporters since the inception of the ITA. These irritants doomed efforts to extend product coverage in the so-called ITA 2 talks in 1998, and subsequently also in the WCO discussions to upgrade the Harmonized System. The exclusions are also at the heart of the current WTO dispute on the EU’s decision to change the classification of some ITA products and to impose duties on them.

After 1998 and until the launch of the Doha Round in 2001, moves to expand the coverage of the ITA led nowhere. ITA negotiations were absorbed into the NAMA discussions in the Doha Round as part of their sector-specific talks. However, ITA and other sector-specific approaches, popular in the United States, have been contentious, especially with developing economies.

The exclusion of NTBs, for its part, was a pragmatic move. It aimed at avoiding long drawn-out negotiations on a complex topic that required extensive research, and consensus on the importance of particular trade distorting behind-the-border measures. However, NTBs are often an

even greater obstacle to trade in ICT products than tariffs (see Table 4). The ITA, nevertheless, mandated WTO work on NTBs, and in the early 2000s, the ITA Committee surveyed its members to identify the key NTBs that hinder trade in ICT goods. The work led to clear identification of the main problems. Box 3 provides a summary of the WTO's findings. The ITA Committee also surveyed standards and conformity assessment procedures for electromagnetic compatibility (EMC) and interference (EMI). Yet in the last few years, not much other work has been done on NTBs. No negotiations have ever taken place on reducing NTBs in ICT goods trade.

BOX 3. NON TARIFF BARRIERS IN THE ICT SECTOR

1. Conformity Assessment + Testing/Certification

Lack of acceptance of conformity assessment reports between countries; non-use or deviations from international standards for conformity assessments; unreasonable demands for testing; duplication or multiple testing; lack of recognition of industry standards.

2. Standards/Regulatory Environment

Duplicative testing; divergent/excessive national standards; non-use of international standards; multiplicity of bodies and deficient coordination among regulatory bodies; voluntary, but de-facto, requirements.

3. Customs Procedures/Certificate of Origin

Cumbersome, non-transparent and overly bureaucratic procedures related to obtaining customs clearance; unnecessary certificates of origin on duty-free goods, as well as compliance documents, certificates of quality, legalization documents, and pre-shipment inspections.

4. Import Licensing

Classification issues, excessive number of administrative bodies, lack of transparency, and processing/approval times.

5. Rules of Origin

Stringent rules of origin in preferential trade agreements.

6. Transparency and Availability of Information

Regulations not readily available and not in standardized format.

7. Government Procurement

Lack of transparency, local content, and buy national requirements.

8. Restrictions on it Professionals

Restricted visa regimes, inadequate visa durations, single-entry only visas.

Source: *WTO Secretariat NTM Compilation, G/IT/SPEC/Q2/11/Rev.1.*

DIAGNOSING THE ITA

THE ITA AS it stands is at risk of losing relevance to an important part of the ICT sector. The previous sections have shown that it has been an effective agreement, but one that depends heavily on the circumstances surrounding its birth. Its history since its inception reveals flaws that could cause its progressive demise. In this chapter the problems of the ITA will be analysed further.

OUTDATED TECHNOLOGICAL ASSUMPTIONS

THE TECHNOLOGICAL ASSUMPTIONS of the ITA are increasingly outdated. Its exclusion of a broad range of consumer electronics is based on the idea that these can be functionally separated from other IT products covered by the ITA. In today's era of multifunctional products and technological platforms that offer a variety of services, it can however only run into problems. In the ICT sector, technological change has led, in the last few years, to what is called "convergence". This trend blurs the boundaries between media and their platforms and the handling of data and information. Convergence allows consumers to have access to multiple media and information services on a single platform or device. Convergence directly affects and interacts with the design and functions of IT products. A modern mobile telephone is a good example. A mobile phone is principally used for telephone communications, but it also offers a technological platform for many forms of communication and for information transmissions: TV, video, internet, email, etc. It also has other functions, such as a camera, a GPS, an alarm, or an MP3 player. Technological development of this type will continue in future, and competition between different platforms is likely to intensify, bringing clear benefits to consumers.

Yet setting these trends against the content and design of the ITA creates a stark discrepancy. For example, the boundaries between consumer electronics and other ICT devices, on which the ITA's current exclusions centre, are no longer an appropriate way of distinguishing between goods. Whether one uses infrastructure such as fibre optics, satellites, or traditional cables to access TV, Internet, broadcasting and other services is subject to competitive forces. But in a trade agreement, such distinctions should not be of relevance. In short, the current exclusions do not make sense and obstruct the dissemination of technological development.

INOPERABLE REVIEW MECHANISM

THE MECHANISM PROPOSED by the ITA's signatories to negotiate product expansion has not worked. The Ministerial declaration in Singapore stated:

"Participants shall meet periodically under the auspices of the Council on Trade in Goods to review the product coverage specified in the Attachment, with a view to agreeing, by *consensus*, whether in the light of technological developments, experience in applying the tariff concessions, or changes in the HS nomenclature, the Attachments should be modified to incorporate additional products."¹² (emphasis added).

ITA member countries have to agree by consensus to an extension of the product coverage. The agreement provides no obligation to reach a result. Nor does it provide deadlines. This is not different from other trade agreements. However, for a trade agreement covering goods that are subject to rapid technological development, the demanding rule of consensus, combined with the absence of specified negotiation dates and objectives, produces rigidity.

Other changes to product coverage might come through changes in the Harmonized System's nomenclature, which is regularly updated (every four to six years). However, in practice, it has proven difficult to make substantial changes to it.¹³ Some changes were done in the HS 2002 revision, but their effects were limited. There were further changes in the HS 2007 revision. However, the latter has rendered matters more complicated. Many tariff subheadings in the HS 2007 cannot be integrated with the ITA: the new HS subheadings combine ITA products with non-ITA products. A significant list of carve-outs (or ex-outs) had to be added, complicating matters further. This is not surprising. Changing the nomenclature is a complex affair, and the purpose of this exercise is not always to clarify product coverage for trade agreements. Furthermore, HS revisions, undertaken in the WCO, do not provide adequate tools to address problems with WTO agreements.

POSITIVE LIST APPROACH

THE POSITIVE LIST approach taken in the ITA and discussed above solves one particular problem: to ensure that goods that countries want to have covered by the ITA do not get excluded due to HS revisions or other complexities in the member states' work to determine tariff classification. But it leads to a narrow interpretation of the agreement. As information technology evolves very rapidly, a list based on a precise level of customs nomenclature, and a parallel list of extra products that have not found their place in there during the negotiations, is inadequate to meet the stated goal of the participants to the Singapore Ministerial to "achieve maximum freedom of world trade in information technology products"¹⁴.

INSUFFICIENT PRODUCT COVERAGE AND CONSEQUENCES FOR TODAY'S GLOBAL PRODUCTION NETWORKS

THE ITA HAS been remarkably successful at integrating its emerging and developing country members into the world economy. In particular, it has contributed to the rapid emergence of China as the world's top exporter of ICT goods and as the centre of a giant global supply chain. In 1996-2000, China's exports rose by 29 percent annually, nearly three times faster than those of all other traders. While global ICT product export growth slowed in the 2000-2005 period, China's exports in contrast accelerated to nearly 40 percent annually, more than 7 times faster than the rest of the world.¹⁵ China today contributes to almost 15% of the world's ICT goods exports. China has also become a major importer of ICT goods (12.5% of world imports), not least to source inputs from Asia for assembly of products that it re-exports. India for its part has become a major importer of IT goods, which has fuelled its IT services boom. Table 1 lists the world's top ten exporters and importers of ITA products.

A major shift in ICT goods production has also occurred within Europe, with Central and Eastern European countries benefiting from the reorganization of Europe's ICT production network before their accession to the EU. These countries had joined the ITA, and they remain parties to it via the EU customs union. Hungary's ICT product exports to Europe in particular, and the rest of the world, grew by 16% on an average annual basis between 2000 and 2005, Poland's by 29%, the Czech Republic's by 30%, Slovakia's by 36%. These countries are becoming interesting export markets for ICT goods as they grow richer and their economies catch up with Western levels. Their growing ICT industries source components from the rest of the world.

TABLE 1 - TOP TEN TRADERS IN ICT GOODS

	EXPORTS 1996		EXPORTS 2005		IMPORTS 2005	
	Value (\$bn)	Share of world exports	Value (\$bn)	Share of world exports	Value (\$bn)	Share of world imports
EU (15) extra	64.69	10.3%	185.68	12.9%	205.13	13.6%
China	17.2	2.7%	213.64	14.8%	199.01	12.5%
United States	104.2	16.6%	170.12	11.8%	237.43	15.8%
Japan	93.93	15.0%	144.76	10.0%	79.78	5.3%
Singapore	42.35	6.8%	111.97	7.8%	84.91	5.6%
Korea	31.87	5.1%	87.95	6.1%	59.22	3.9%
Taipei	35.5	5.7%	71.89	5.0%	60.97	4.1%
Malaysia	34.89	5.6%	59.37	4.1%	48.99	3.3%
Mexico ¹	13.02	2.1%	33.9	2.3%	47.92	3.2%
Philippines			26.94	1.9%	21.97	1.4%
World	626	100	1443	100	1504	100
EU 25 extra	-	-	167.6	12%	199.15	13.2

¹ not party to ITA

Source: WTO (2007)

These shifts in global production networks have fed into the recent growth of emerging markets and productivity gains in the developed world. This trend has spurred innovation and considerably reduced prices. For example, in the United States between 1996 and 2005, the prices of ICT products dropped 6 per cent annually. In contrast, those of all other manufactured goods increased by nearly one per cent annually¹⁶.

Many companies in the ICT and electronics sector have fragmented their supply chain to take advantage of lower costs in other parts of the world, primarily Asia. American and European firms have been especially inclined to split up the supply chain, and to enter production-sharing networks. In most ICT and electronics subsectors, a significant part of the production is done elsewhere. For some products, the fragmentation has primarily been for input goods – parts and components – while for others it is the finished good that is imported from a foreign country.

ICT firms are thus globalized. But their sophisticated supply chains are very sensitive to tariffs and to changes in the trading environment. Insufficient or eroding product coverage affects companies' ability to maximise their supply-chain efficiency. For companies that have already outsourced production, eroding product coverage, which can lead to the (re-)imposition of duties, can be very costly. If the product is assembled abroad, a duty would be imposed on the full market value of a product, and implies tariffs on the components. The short-term effect would be increased prices. Given the high price elasticity of ITA products and consumer electronics, this would translate into falling sales. Production structures could be adapted to the new environment in the long term, but only at a considerable cost.

Therefore, the higher the degree of supply-chain fragmentation in a sector, the more sensitive it is to tariffs and re-imposition of tariffs. A trade agreement that cannot establish a predictable environment for itself will have damaging effects. Quantification of supply-chain fragmentation is a challenging task. A proxy for it is intra-firm trade.

TABLE 2: US INTRA-FIRM TRADE IN ICT GOODS, 2004 (USD MILLION AND %)

	US IMPORTS			US EXPORTS		
	Total im-ports	Related party trade	Share %	Total exports	Related party trade	Share %
All goods	1 460 160	697 561	47.8	817 936	252 086	30.8
Computer equipment	73 733	51 731	70.2	27 039	9 654	35.7
Communication equipment	38 733	28 106	72.5	13 530	2 108	15.6
Audio and video equipment	37 054	24 282	65.5	3 417	973	28.5
Electronic components	65 351	43 690	66.9	47 626	17 935	37.7
Magnetic and optical media	4 096	2 160	52.7	1 390	825	59.4
ICT products	218 967	149 969	68.5	93 002	31 495	33.9
ICT share of total	15.0	21.5	...	11.4	12.5	...

Source: OECD *Information Technology Outlook 2006*

According to the OECD, in the case of the United States, for which the most detailed data are available, “intra-firm trade is a particular feature of highly globalized ICT manufacturing, accounting for more than 68% of US ICT goods imports and 34% of exports, higher shares than for total goods”¹⁷. Table 2 provides more details on US intra-firm trade in ICT goods.

EU PRODUCT “RE-CLASSIFICATIONS” AND THE ITA

THE LIMITATIONS AND shortcomings of the ITA discussed above are embodied in the current controversy over the way the EU classifies sophisticated ICT products.

Table 3 lists “re-classifications” by the EU that have resulted in or might lead to the re-imposition of duties by the EU.

TABLE 3. INFORMATION TECHNOLOGY PRODUCTS “RE-CLASSIFIED” BY THE EU – EXAMPLES OF THE MOST CONTENTIOUS CASES

CASE	EU ACTION
1. Set top boxes (WTO litigation)	Under the ITA the EU is committed to allow duty-free entry to set top boxes with a communication function. However, in May 2008, the EU Commission stated that the duty-free heading of these set top boxes does not include set-top boxes with modems of certain types (e.g., Ethernet modems) or set top boxes with a device performing a recording or reproducing function (for example, a hard disk or DVD drive). As a result of this exclusion, the EU charges duty on these set top boxes.
2. “Input and output units” and facsimile machines / multifunction printers (WTO litigation)	Under the ITA, the EU is committed to allow duty-free entry to “input or output units”, fax machines and basic printers. However the EU excludes copiers with a speed of more than 12 ppm. The EC Customs Code Committee issued a statement indicating that “if a multifunctional device (fax, printer, scanner, copier) has the capability of photocopying in black and white 12 or more pages per minute (A4 format) this indicates that the product is classifiable in heading 9009 as a photocopying apparatus.”
3. LCD monitors (WTO litigation)	The ITA covers computer monitors but not television monitors. Flat panel displays, including liquid crystal displays (LCDs), however, can be used for either purpose. The EU allows duty-free entry to LCD monitors smaller than 19ins, which it judges are likely to be destined for use as computer monitors. But it applies a 14% tariff to larger LCDs, arguing that they are more likely to be used as television displays. Furthermore, the EU Commission states that certain flat panel displays using LCD technology that can reproduce video images from a source other than an automatic data-processing machine, or with a DVI, are not covered by the ITA.
4. Multifunctional mobile phones (under consideration)	Mobile phones are normally subject to a 0% tariff under the ITA. The EU, however, is considering classifying mobile phones with other functions such as GPS, TV or video as different items potentially subject to duties.
5. Digital still cameras (under consideration)	The ITA covers digital still cameras but not video cameras. In July 2007, the EU adopted a Commission Regulation distinguishing between digital cameras and video cameras. A digital camera is specified to have a video resolution less than 800x600 pixels; duration of a single sequential video recording less than 30 minutes; and a recording capacity of less than 23 frames per second. The new specification would cause many cameras that currently pay zero duty under the ITA to be treated for customs purposes as video cameras, for which duty is payable.

Different reasons appear to underlie different re-classifications. Three distinct rationales appear from this short list of products:

- a. An IT product develops to the point at which it becomes, in the view of the EU, a new product – a product not covered by the ITA because the EU believes it did not exist at the time the ITA was negotiated (e.g. case 1).
- b. An IT product develops to become a product that was in existence at the time the ITA was negotiated but that, in the view of the EU, is not covered by the ITA (e.g. cases 3, 4 and 5).
- c. IT products are bundled together – usually in ways not common or not possible at the time the ITA was negotiated – to include products covered by the ITA but also products excluded from the ITA (e.g. case 2 – non-digital copiers are excluded from the ITA – and case 4).

These bases for re-classification all involve judgments of fact as well as of logic, law or custom.

Television monitors, for example, are clearly excluded from the ITA, whereas computer monitors are clearly included. Modern LCD screens, however, can be used in either capacity (or both). Any line that is drawn between dutiable television monitors and duty-free computer monitors will therefore be rough at the edges: it will make mistakes.

The problem could be dealt with by abandoning the distinction. Thus, the EU could treat all kinds of LCD monitors as if they fell outside the ITA and should pay duty on entry into the EU; or as though they fell under the ITA and merited a zero duty. The former course, however, would put the EU in an untenable legal position – some LCD monitors are certainly intended for use with computers, and the EU has bound itself under the ITA to admit such monitors duty free.

On this ground, therefore, the alternative course, of treating all monitors as though they fell under the ITA and merit a zero duty is more attractive. It is also the economically rational way to deal with the problem. But a principal objective of the EU in the negotiations that established the ITA was to exclude televisions from the scope of the Agreement; and it succeeded in that aim.

We do not think that this is a laudable choice: the exclusion was motivated by protectionism and is likely to have been economically expensive for the EU. But the brute political fact is that the EU successfully negotiated the exclusion and is unwilling to give it up because technological change has blurred the distinction between the two types of monitor. The EU has therefore chosen to maintain the distinction, but now based on the size of the monitor. There is a rough plausibility in the idea that the greater the size of the monitor, the more likely that it will be used for television viewing and that after some size – few people use 72 inch computer monitors – all or most monitors are destined to become television monitors. But to charge tariffs or allow free entry on this basis is virtually certain to result in the imposition of tariffs on LCD screens that are destined to become computer monitors — and that should be permitted free entry under the ITA.

Similarly, certain copying machines are excluded from the ITA. So imports of multifunction printers that include such a copier along with, say, printer, fax and scanner (all of which are covered by the ITA), raise a problem. As in the previous case, the EU could back away from the issue and treat the bundle as covered by the ITA, and thus qualified for duty-free entry into the EU, even though the bundle contains components that are *not* covered by the ITA. Again, however, it has chosen not to do that, but, rather, to draw a line at a copying speed of 12ppm.

Whether a line should be drawn in such cases and if so, where, are matters that are clearly open to debate. The case in principle *for* lines, however, is not negligible. It is a technically simple matter, for example, to add a telephone – clearly within the ITA -- to a television set – clearly outside the ITA. Few would argue, however, that the telephone appended to the television should force ITA signatories to admit the television duty-free. Similarly, if the provisions of the ITA had included widgets with a maximum speed of 20 units per second, it is difficult to see why parties to the ITA should not charge a duty on widgets with a speed of 30 units per second (if such appeared after 1996) or why they should not adjust their tariff schedules to include a new category of widgets with a speed of more than 20 ups.

The issue, though, is not merely of abstract principle. Even granting that lines that are in some degree arbitrary can in principle be drawn, there might be dispute about *where* they are drawn. Guidance, however, should ideally come from the General Rules of Interpretation in the Harmonized System. In many situations, the GRI gives clear guidance. But in some cases there is room for different interpretations of what action to take. This is the case in some of the EU's "re-classifications" which have led to the imposition of a duty. The problem particularly concerns the definition of the 'essential character' of a product (GRI 3b).

A more immediate event in removing the issue from the realm of the abstract, however, is the request of Japan, Taiwan and the US, in June 2008, for consultations with the EU on the issue of EU imposition of duties on products that the former claim are subject to the ITA. A “request for consultations” is a necessary preliminary step to a full-blown complaint to the WTO.

THE JAPANESE, TAIWANESE AND US COMPLAINTS

THREE PRODUCTS ARE INVOLVED in the complaints of the Japan, Taiwan and the US. The U.S. complaint cites these as:

1. Set top boxes with a communication function;
2. Flat panel displays; and
3. “Input and output units” and facsimile machines -- multi-function printers.

The complaints themselves are flat and factual. A press release issued with the US complaint, however, makes the following statement:

“The EU must preserve the benefits of the ITA

- The ITA was intended to “...encourage the continued technological development of the information technology industry ...” and “... maximise freedom of world trade in information technology products”.
- The ITA negotiators recognised that ITA products would likely develop new features and that technology would improve over time. If ITA signatories were allowed to deny duty-free treatment to ITA products simply because they have become more technologically sophisticated, virtually no products would be eligible for duty-free treatment.
- Maintaining permanent duty-free treatment for all ITA products will preserve the positive contribution that information technology has made to global economic growth and welfare.”

With respect to the last point, it is worth noting that no one appears to be arguing that ITA products shouldn't have permanent duty-free treatment. The issue, rather, is which ICT products are ITA products.

STRUCTURE OF THE ITA

TO REFLECT FURTHER ON the issues clearly requires some study of the structure of the ITA.

A first point to be made – already touched upon but requiring re-emphasis in the present context – is that the ITA does not apply to all ICT products. It applies to a list of specific products and while all of the products on the list may be IT products, not all IT products are on the list. The ITA does not apply, for example, to televisions, including high-definition televisions or to video cameras or to raw optic cable. Moreover, in the twelve years since the ITA was signed, new products are likely to have appeared – GPS devices are a possible example – which are not covered by the

1996 list, and therefore not included in the ITA. It follows that there is, at least in principle, the possibility that products can develop in such a way as to move between the categories of products included in the ITA and products excluded from it.

The negotiators of the ITA foresaw at least some of these possibilities. Indeed, Paragraph 3 of the Annex to the ITA says that:

“Participants shall meet periodically under the auspices of the Council on Trade in Goods to review the product coverage specified in the Attachments, with a view to agreeing, *by consensus*, whether in the light of technological developments, experience in applying the tariff concessions, or changes in the HS nomenclature, the Attachments should be modified to incorporate additional products, and to consult on non-tariff barriers to trade in information technology products. Such consultations shall be without prejudice to rights and obligations under the WTO Agreement.”
(emphasis added)

Consensus is a hard rule and tends to support the *status quo*. No new products have been added to the Attachments since 1996 – certainly the currently available version of the ITA makes no mention of amendments.

The role of the ITA Committee seems likely to be a central issue between the EU, on the one hand, and the US, Japan and Taiwan on the other. In the passage quoted above, the US adduces the existence of the committee (and the implied possibility of legal and authorized change in classifications) as an argument against the unilateral actions of the EU.

The EU responds, however, that:

“The EU has always expressed its willingness to reassess product coverage under the ITA to reflect changes in technology since 1996. The ITA has a review clause, which can be invoked by members at any time. The EU has said it is willing to negotiate with all other ITA members. The US is not willing to do this. Why not?”

Presumably the answer to this quasi-rhetorical question is that the US prefers the *status quo*, which EU actions might disrupt. That is a perfectly valid position for the US to adopt. However, it begs important legal questions.

For example, paragraph 3 of the Annex to the ITA, quoted above, refers only to the possibility of *adding* IT products to the Attachments, and requires consensus for that. It does not mention the possibility that products that were in the ITA in 1996 will develop so as to be outside of the ITA, and makes no provision for that contingency. It is a significant omission. It seems to mean that a country that believes a product has developed in such a way as to take it outside of the ITA does not need the unanimous consent of all other ITA members to act on its perception. If challenged by other members, it will certainly need a defensible objective rationale for any changes it makes in tariff classifications or duties payable: such changes are, of course, open to challenge in the WTO. Nevertheless, nothing in the ITA appears to bar a signatory from unilateral action in such a case.

If that is so, the central issue in deciding the case that has been brought to the WTO by Japan, Taiwan and the US will be the placing of the lines that the EU has drawn; and, indeed, some of these seem more defensible than others. It would be foolish to try to forecast the outcome of the deliberations of the WTO panel. Some guidance, however, could be found in the Advocate

General's opinion in two cases in the European Court of Justice which concerns EU tariff classifications of goods which are similar to the goods covered in the WTO complaint: multifunctional printers (with copying capabilities)¹⁸ and LCD displays¹⁹. In two opinions – issued in July and September 2008 (cases C-362/07 and C-363/07, and case C-376/07) – the Advocate General called into question classifications by some EU member states on LCD monitors and on multifunctional printers which have led to the imposition of customs duties. The opinion related not to WTO legality, but to the EU's own implementation of its rules under the EU Nomenclature. In the case of multifunctional printers, it is the Dutch, French and Polish governments together with the European Commission which favour a classification that implies tariffs. In the case of LCD monitors, it is the Dutch government, with the support of the Commission that favours a classification leading to the imposition of import duties. Some of the opinions from the Advocate General are of principal importance and direct relevance to the WTO complaint. In the case of multifunctional printers, the Advocate General issued (among others) these opinions:

- a. Just because a product has one function that is subject to tariffs, this is not a sufficient basis on which to exclude the product from the classification in the Combined Nomenclature which carries zero-tariff. If it was, a good could be classified on the basis of one function in the product which is of minor importance or completely irrelevant.
- b. Just because a printer can perform copying functions (which is the basis for classifying it as a copier) does not mean that the prime function of the printer is to make copies. To classify in accordance with the view of the Dutch, French and Polish governments and the EU Commission (specifically their interpretation of chapter 84, 5E, in the Combined Nomenclature; see Annex 3) is not correct. It would imply that the word *principal* (in the principle to classify in accordance with the *principal use* of a product if it is not possible to classify in accordance with other rules) has no substantial meaning.

In the LCD monitors case, the Advocate General issued (among others) these opinions:

- a. Just because an LCD monitor could reproduce pictures from other sources than a computer does not imply that such a monitor cannot be classified in Chapter 84 in the Combined Nomenclature (the relevant chapter for data-processing machines). Again, such an interpretation would imply that the word “principal” is given no substantial meaning.
- b. Despite some problems in interpreting whether WTO agreements are applicable in EU law, the clear objective of the ITA of zero-tariff trade in IT products should be accounted for in interpretations of the Combined Nomenclature.
- c. When defining the word “principal”, the ECJ should interpret it as the normal use of a product. The authority that interprets the relevant rule should therefore investigate what the good is reasonably used for. The use of a product in a commercial context (e.g. in marketing and on product packages) should not be part of the consideration of principal and/or normal use.

CONCLUDING COMMENTS

THE RECENT RE-CLASSIFICATIONS by the EU are unlikely to spell the end of the ITA. They stem from the failure of the ITA to cover all ICT products.²⁰

Nevertheless, the dispute in the WTO is a spasm that would best have been avoided. In the event of the EU winning the dispute, there is a clear risk that other countries will re-classify goods with the aim of re-imposing duties. Members of the ITA have already toyed with the idea of re-classifying some goods. The intent could be protectionism: to lower competition from foreign producers. But it could also be motivated on similar grounds to those the EU has used for its re-classifications: a good has, rightly or wrongly, changed to the degree that it should be outside the ITA. As technology evolves, such cases are likely to become more frequent and to contribute to making the ITA less and less relevant to the ICT industry.

DESIGNING A NEW ITA

THE PREVIOUS SECTIONS of this paper have revealed that the ITA is beset with constitutional problems. They concern product coverage and the absence of a mechanism to rationally and constructively deal with classification concerns when a product evolves technically to the degree that some members believe it should no longer be considered as covered by the ITA. Furthermore, NTBs in the ITA sector were not addressed in the ITA negotiations, but remain a central problem to trade in technology goods. Countries need to find a way to deal with them.

Negotiations on a new ITA are needed. The current WTO dispute is important to determine how a good should be classified when it combines ITA-covered functions with functions that are not covered by the ITA. The basis for making such determinations is likely to be at the core of the WTO ruling. But the main issue, namely increasing unpredictability in the trading environment for ICT products due to increasingly blurred lines between the ICT products that are in the ITA and ICT products that are outside it, cannot be resolved through the WTO dispute-settlement system.

The ruling of the WTO will be important for new negotiations of the ITA. If a clear ruling is issued, it can form the basis of what should, or what should not, be part of the new negotiations. More specifically, the ruling will determine if the re-imposed duties should be part of a bargain, or if the EU needs to do away with them before new negotiations start.

This section outlines possible solutions to overcome the limitations of the ITA outlined above in a new and enhanced ITA. A new ITA will need a different approach to product coverage and should include provisions on NTBs. The proposals in this section are built on current views of the major trading powers, and it takes account of recent developments in the Doha Round, especially what was agreed in advance of or during the July 2008 meeting in Geneva. Furthermore, the final design of a new ITA will have to be balanced in matters of “wins” and “losses”; a deal cannot be built on “full reciprocity”, but an overall balance is needed to motivate all key parties. That is the political reality of trade negotiations. For trade negotiations in the fields of ICT goods and consumer electronics a considerable level of reciprocity is also called for by the fact that many countries with developing-country status are significant exporters.

PRODUCT COVERAGE

ANY REFORM OF the ITA should start with its product coverage. Two very simple (yet bold) steps should be taken. Minor changes will not solve the problem; it is the structure of the agreement that needs to be improved.

First, the ITA should adopt a broader definition of goods that accommodate technological change and the convergence between ITA goods and electronic consumer products. The ITA is built on two types of goods: IT (or ICT) goods and consumer electronics. Yet the agreement excludes many goods in these categories (particularly in consumer electronics). These exclusions should now be included in the ITA to give it a proper structure and close current and future uncertainties over IT goods that converge with consumer electronics.

In more concrete terms, all consumer electronics (and their peripherals) should be added to the ITA. Such extended product coverage would increase the benefits of the ITA and also address the irritations in the current agreement. The final agreement should be a broad deal on consumer and producer information and communication technology and electronics. To that end, the principle should be that at least all products covered in the HS 2007 4-digit headings proposed in Annex 4 of this paper be included, and negotiations *not* based on the 6-digit level.²¹ In a limited number of cases, products that obviously do not belong in a new ITA might appear and they should not be part of the amended Annex A in the ITA.

Second, the positive list should be dropped in favour of a “negative list”. The primary function of the positive list has been to ensure that goods will not be delisted from the ITA due to changes in tariff nomenclatures. An extension to all consumer electronics will basically solve this problem.

The prime function of the negative list is to make exclusions more pronounced and define in greater detail what those exclusions are. A negative list added to the ITA cannot be extensive. The main problem of the current ITA is exclusions and insufficient coverage, and if this problem cannot be properly addressed, the concerns will remain.

The key consumer electronics products currently outside the ITA must be included if a new ITA is to make any sense. This means, for example, that TV receivers and all copying machines will be covered by a new ITA. If key goods like this, which are subject to a duty, remain outside the ITA, there is little use in starting new negotiations.

Furthermore, the agreement should introduce a disqualification clause: a provision for how a good can be disqualified from the ITA. This provision should make explicit reference to the General Rules of Interpretation (GRI). It should emphasize that the “principal use” (defined as normal use) should be the basis for determinations in the event that other rules cannot provide sufficient guidance.

With such an approach a few key problems of the ITA would be brushed aside. This approach would allow for technological change, namely platform-technology development, to be integrated into the Agreement and would eliminate the need for future negotiations on the expansion of product coverage. Today’s format for the expansion of product coverage has proved ineffective, and there is no point in continuing along this track as the motivation for the positive list – to distinguish the goods all parties agreed to have in the ITA from the goods some parties refused to include – will no longer be as relevant. Even if product extensions were to be negotiated successfully on an item-per-item basis, the pace of today’s multilateral trade diplomacy is too slow to reflect the realities of a rapidly changing ICT sector.

Moreover, it would eliminate most existing classification problems. The fundamental cause of classification disputes is that there are tariffs and products that are protected by tariffs. In particular, the problem of exclusion of consumer products, which has been the background of most classification irritations so far (and is likely to continue to be, regardless of the outcome of the current WTO dispute) would be solved immediately. Indeed, there would no longer be a distinction

between consumer and non consumer ICT goods. ITA goods would be let in duty-free regardless of the classification adopted by the importing country. Potential classification divergences could still emerge around a much narrower set of items on the probably inevitable list of exclusions. But the problem would be more manageable. As technology evolves, it would even become more residual over time, since often ICT products that are protected, i.e. have been kept out of the ITA, tend to be in decline, such as TV sets with a cathode-tube and or analogue photocopiers.

NON-TARIFF BARRIERS

THE CASE FOR including NTBs in the ITA is increasingly compelling. In many countries and for many goods, NTBs are a very strong and sometimes pernicious impediment to international trade. To illustrate this point, the third and fourth columns of Table 4 provide an overview of the protective effect of NTBs (translated into a tariff equivalent) on selected ICT products. Regulations ranging from technical requirements to government procurement rules can often be a disguised way of favouring domestic producers over international providers of equivalent products.

TABLE 4: TARIFFS AND TARIFF RATE EQUIVALENTS ON SELECTED ICT GOODS

	AVERAGE OF AV DUTIES ¹	AVERAGE TARIFFS INCL. AVES ²	AD-VALOREM EQUIVALENT OF NTB IN % ³	RATE OF PROTECTION ⁴
8443: Printing and ancillary machinery				
China	10.86%	17.54%	0%	17.54%
Japan	0%	0%	0%	0%
Malaysia	5%	0%	28.72%	28.72%
USA	1.11%	0.77%	0%	0.77%
European Union ⁵	1.75%	...	...	...
France	...	0.32%	0%	0.32%
Germany	...	0.32%	0%	0.32%
The Netherlands	...	0.32%	0%	0.32%
United Kingdom	...	0.32%	0%	0.32%
8518: Audio-electronic equipment, except recording devices				
China	5.79%	15%	0%	15%
Japan	0%	0%	63.93%	63.93%
Malaysia	17.81%	8.63%	42.48%	51.12%
USA	1.84%	2.43%	1.29%	3.72%
European Union ⁵	1.64%	...	...	...
France	...	0.27%	0%	0.27%
Germany	...	0.27%	0%	0.27%
The Netherlands	...	0.27%	0%	0.27%
United Kingdom	...	0.27%	0%	0.27%
8521: Video recording and reproducing apparatus				
China	25%	41.59%	62.23%	103.82%
Japan	0%	0%	37.32%	37.32%
Malaysia	30%	0%	77.84%	77.84%
USA	0%	0.51%	0%	0.51%
European Union ⁵	10.65%	...	...	...
France	...	2.52%	0%	2.52%
Germany	...	2.52%	0%	2.52%
The Netherlands	...	2.52%	0%	2.52%
United Kingdom	...	2.52%	0%	2.52%
8525: Radio and TV transmitters, television cameras⁶				
China	8.90%	15.61%	0.75%	16.37%
Japan	0%	0%	0%	0%
Malaysia	3.33%	1.62%	28.83%	30.45%
USA	0.97%	1.08%	21.19%	22.27%
European Union ⁵	2.80%	...	...	...
France	...	0.29%	0%	0.29%
Germany	...	0.29%	0%	0.29%
The Netherlands	...	0.29%	0%	0.29%
United Kingdom	...	0.29%	0%	0.29%
8534: Electronic printed circuits				
China	0%	11.00%	0%	11.00%
Japan	0%	0%	0%	0%
Malaysia	0%	0%	0%	0%
USA	0%	0.76%	0%	0.76%
European Union ⁵	0%	...	...	...
France	...	0%	0%	0%
Germany	...	0%	0%	0%
The Netherlands	...	0%	0%	0%
United Kingdom	...	0%	0%	0%

¹ WTO bound tariffs; ² World Bank tariff calculations based on WTO's integrated database and UNCTAD's TRAINS, and MacMaps database is used for ad-valorem equivalents; ³ Latest available World Bank data based on UNCTAD's TRAINS data-set and their own calculations; ⁴ World Bank calculation (sum of tariffs, AVE of NTBs, and AVE of domestic support); ⁵ No NTB values for EU, selected EU countries are used as a proxy. Source: WTO and World Bank (for more information on the methodology used by the World Bank in the NTB calculations see Kee, Hiau Looi, Alessandro Nicita and Marcelo Olarreaga (2008)). ⁶ For 8525 all 6-digit categories are included as listed below in the NTBs except for 852540: still image video cameras and other video camera recorders

NTBs, however, are a complex matter for trade negotiators. They often delve into sensitive domestic regulatory areas, and need to make a clear distinction between legitimate policy aims and trade-distorting measures. However, some core provisions related to the ITA are manageable. The WTO has already compiled a list of NTBs that are important to the parties to the ITA (see Box 3). NTB provisions in a renewed ITA should build on this list.

Two key areas could form the core of an NTB agreement.

First, the ITA should address a few NTBs related to fundamental technical standards and regulations that are relevant to the products covered by the agreement. There are many technical standards and regulations (regulations are mandatory and standards are voluntary) in the fields of ICT goods and consumer electronics. The Technical Barriers to Trade (TBT) Agreement in the WTO has established basic principles for such measures, and they build on core WTO principles, such as non-discrimination and least trade-restrictive forms of barriers. The TBT Agreement, though, does not provide for harmonization of regulations. Nor does it provide sufficient protection against potential protectionist misuse, or abuse, of technical regulations. The TBT Agreement, however, encourages WTO members to negotiate mutual recognition agreements. It also sets out a Standards Code of Good Practice. These two parts could form the basis of an NTB section in a revised ITA.

Such an NTB provision cannot comprise all technical regulations and standards. It should, however, focus on what is the most vexing part of the TBTs: multiple testing and certification of products, often set in an arcane administrative milieu, to comply with local regulations. Such TBTs are not only irritating, burdensome and time consuming for exporters. They could also prevent scale economies as companies might have to change the production of a particular good to be granted market access. Such changes increase the cost for producers and consumers.

The most efficient way to address such problems in the ITA would be for members to negotiate mutual acceptance of conformity assessment results. Such a Mutual Recognition Agreement (MRA) requires a significant level of trust in other countries' certification bodies. Inevitably, a pre-requisite is that certain members have to improve the quality and coverage of its certification operations. However, if done properly such an agreement does not have to be technically complicated or require significant increases in costs for developing countries. There are a limited number of members in the ITA. Countries have joined the ITA because they have a commercial interest in trade in technology goods. In principle, these countries already have regulatory bodies of sufficient quality. Concerns occur mainly in the field of safety. Core safety regulations would have to be addressed separately as there are too big differences between key members of the ITA. For example, the EU and the US would not accept mutual recognition of core safety regulation in some Asian countries. Yet, one should not exaggerate the problem. The difference in core safety regulations is not that big for new products. However, some of them are big enough to make sure they are either out of the MRA or dealt with through harmonization. The latter route should not be a problem (regulatory or economically) for the subset of ITA members, including key Asian countries, which represent the vast part of all trade in ITA covered goods. Furthermore, countries should also associate all relevant bodies for the ITA agreement to the Code of Good Practice in the TBT Agreement.

Second, government procurement provisions for products covered in the new ITA could be included in the agreement as well. It is well known that countries discriminate against foreign producers in their government procurement, e.g. through buy-national policies. This is certainly a problem for some exporters of products already covered by the ITA. Discrimination does not

only occur when there is a domestic producer of the purchased good; some governments also exchange sweet-deals with each other and discriminate against third-country producers.

ITA members that are not part of the existing WTO Government Procurement Agreement (GPA)²² should adopt the GPA for the list of products covered in the ITA (unless they agree to join the GPA). ITA members which are parties to the GPA and which have not committed to subjecting public procurement of ITA products should be required to do so. It is the practice in many bilateral trade agreements to have provisions for government procurement when one (or both) of the countries has not signed up to the GPA. The GPA includes flexibilities for developing countries and will not prevent governments which orderly purchases national goods, in order to stimulate local production, to do so.

Why this particular choice of NTBs? There are two main reasons. The first is that multiple testing requirements are the most common impediment to trade in ITA goods. Eliminating them would boost trade by allowing greater economies of scale, especially for firms that are involved in global production networks and that export globally. The second reason is that a new agenda should be “balanced”, and take into account the key requests from all key countries. If it does not, there is no political foundation for a new agreement. The next chapter will explain why.

GETTING A NEW ITA DEAL DONE IN A “POST-QUAD” WORLD

PREVIOUS ITA NEGOTIATIONS have failed. Doha has not delivered. How is it possible to overcome the deadlock that has blocked previous negotiations to expand the ITA’s product coverage?

The failure to broaden the coverage of the ITA is due to the entrenched defensive positions of the major trading powers. The defensive positions centre on a broad range of consumer electronics for the EU, and on NTBs, predominantly Asian but also American to some extent. The ITA 2 negotiations in 1998 were acrimonious due to this core division in particular. During the Doha Round, another negotiating model was attempted, based on sector-specific “zero-for-zero” negotiations. But it has not delivered.

However, each major trading power has substantial offensive interests. Offensive interests come in two shades. Firstly, countries have an interest in maintaining the current open regime, and as has been discussed before, there is a risk that the status and integrity of the ITA will diminish as technology evolves. If the WTO rules in favour of the EU in the current dispute, there is an even greater and more imminent need to negotiate a new ITA. Secondly, most countries have an interest in gaining increased market access for their ICT goods.

To make a new ITA deal possible, it must cut across the defensive interests of the main ITA players. Furthermore, in today’s political and economic configuration, a new strategy to achieve “critical mass” for the ITA is necessary.

In this context, then, who should do what? The main “burden” of making possible a new ITA deal lies on the EU, the United States, Japan, and China.

The EU should drop its defences in key consumer electronics that are currently outside the ITA. It should negotiate on the basis of the broadest possible definition of ICT products. The United States should accept the negotiation of product expansion as a principle and drop its own entrenched positions, such as in fibre optics. Japan, if it wishes to get its way with the EU on consumer products, will need to accept provisions on NTBs, as will other Asian and developing country ITA members with significant NTBs. China will need to take particular leadership in

this field. In the ten years of existence of the ITA, China has climbed from being the world's 8th exporting economy of IT products to the world's first. China has an immense stake in maintaining an open regime for ICT products, which allows it to reap the full potential of its comparative advantage in labour-intensive manufactures. It also has a stake in a modernized ITA that caters for technological change, facilitating China's already notable climb up the economic value-added chain. Yet China will have to accept disciplines on NTBs, which are a major source of discontent by exporters to China. For China and other Asian countries, elimination of tariffs in consumer electronics will also have to be part of the package. Asian tariffs in consumer electronics are typically bound at a fairly high level; Malaysia, for example, has bound its tariffs on video recorders at 30%. Applied tariffs are generally much lower. However, many of their actual tariffs are in the region of 5-10% and will require significant change.

India, although not a major ICT good exporter, is playing an increasingly important role as an importer of ICT goods and exporter of IT services. India is also part of the "Big Four" in the WTO without which no major deal can be done. This country will need to be counted upon in any future ITA negotiations. Its defensiveness in selected ICT products such as navigation programmes and selected scientific instruments, and its notorious defensiveness on NTBs will need to be addressed. It would be wise of its partners to accommodate its demands, made within the ITA committee, on facilitating the cross-border movement of IT professionals. Current commitments by the EU and the US in Mode 4 for IT professionals are basically non-existent. Actual policies could thus be changed at the discretion of governments without violating the GATS. Binding Mode 1 for IT professionals could be difficult. It might also be of little use as the bindings probably would be at the lower end of the number of people temporarily crossing borders. Of much greater use would be to get real increases in the number of visas issued in the EU and the US.

A new ITA for the next decades will need to be based on today's new balance of bargaining power within the WTO. A stylized overview of how this balance can be achieved is given in Table 5. In short, a "grand bargain" will need to be struck between the leading OECD economies on the one hand and Asian economies on the other. It will require a major trade-off between duty-free treatment of consumer electronics and adherence to core rules for non-tariff barriers.

TABLE 5 – A "GRAND BARGAIN": CORE TRADE-OFFS FOR A NEW ITA

	CONSUMER ELECTRONICS	NTBS	GPA MEMBER
US	-	+	Y
EU	--	++	Y
Japan	+	-	Y
Korea	++	--	Y
China	++	--	N
Singapore	++	-	Y
Malaysia	++	--	N
The Philippines	++	--	N
Thailand	++	--	N
++=strong offensive interest; +=offensive interest; -=defensive interest; --=strong defensive interest.			

CONCLUSION

THIS PAPER HAS shown that the ITA risks losing relevance to today's technological developments and trade in technology goods. Classification divergences in the last few years, and in particular

the current case on EU classifications in the WTO, reveal the ITA's fault lines. They are:

- First, that the ITA provides insufficient coverage of ICT products. In particular, in an era of technological change and “convergence” among ICT services and devices, the exclusion of key consumer electronics is increasingly problematic.
- Second, that the ITA is based on a rigid listing of products based on a precise nomenclature of products that leaves out new ICT products and poses problems with multi-functional products.
- Third, that the ITA does not control NTBs, which account for a significant part of current impediments to trade in the ICT sector.
- Fourth, that the mechanisms put in place to expand the coverage of the ITA have failed.

The ITA needs to be upgraded and modernized. However, in order for this renewal to work and make the ITA function in the future, four fundamental conditions will need to be fulfilled:

- ITA members need to negotiate a new ITA. The negotiations should provide for a balance of interests and bargaining positions that reflect the reality of today's trade in ICT goods. This “grand bargain” will necessarily include trading off free trade in consumer electronics against commitments on non tariff barriers to trade in ICT goods.
- A new ITA needs to be based on a broad definition of ICT products and include all consumer electronics. Only potential product exclusions should be negotiated.
- The ITA should include basic provisions on NTBs, primarily in the fields of multiple testing and government procurement. Actual increases in the number of IT professionals will also need to be part of the agreement.
- A new ITA should continue to provide for further geographical expansion of the ITA. The pre-requisite for an expansion is that it involves the goods that new members have an interest in exporting to other countries, and this means above all consumer electronics.

ANNEX 1
PARTIES TO THE ITA

Albania
Australia*
Bahrain
Canada*
China
Costa Rica
Croatia
Dominican Republic
Egypt
El Salvador
European Communities*
Georgia
Guatemala
Hong Kong*
Honduras
Iceland*
India
Indonesia*
Israel
Japan*
Jordan
Korea*
Kyrgyz Republic
Macao
Malaysia
Mauritius
Moldova
Morocco
New Zealand
Nicaragua
Norway*
Oman
Panama
Philippines
Saudi Arabia
Taiwan*
Singapore*
Switzerland*
Thailand
Turkey*
Ukraine
United Arab Emirates
United States*
Viet Nam.

* Initial signatory

ANNEX 2

<p>The ITA's Attachment B</p> <p>Positive list of specific products to be covered by this agreement wherever they are classified in the Harmonized System (HS)</p>
<p>Computers</p> <p>Automatic data processing machines capable of 1) storing the processing program or programs and at least the data immediately necessary for the execution of the program; 2) being freely programmed in accordance with the requirements of the user; 3) performing arithmetical computations specified by the user; and 4) executing, without human intervention, a processing program which requires them to modify their execution, by logical decision during the processing run.</p> <p>The agreement covers such automatic data processing machines whether or not they are able to receive and process with the assistance of central processing unit telephony signals, television signals, or other analogue or digitally processed audio or video signals. Machines performing a specific function other than data processing, or incorporating or working in conjunction with an automatic data processing machine, and not otherwise specified under Attachment A or B, are not covered by this agreement.</p>
<p>Electric amplifiers</p> <p>when used as repeaters in-line telephony products falling within this agreement, and parts thereof</p>
<p>Flat panel displays</p> <p>(including LCD, Electro Luminescence, Plasma and other technologies) for products falling within this agreement, and parts thereof.</p>
<p>Network equipment</p> <p>Local Area Network (LAN) and Wide Area Network (WAN) apparatus, including those products dedicated for use solely or principally to permit the interconnection of automatic data processing machines and units thereof for a network that is used primarily for the sharing of resources such as central processor units, data storage devices and input or output units - including adapters, hubs, in-line repeaters, converters, concentrators, bridges and routers, and printed circuit assemblies for physical incorporation into automatic data processing machines and units thereof.</p>
<p>Monitors</p> <p>Display units of automatic data processing machines with a cathode ray tube with a dot screen pitch smaller than 0.4 mm not capable of receiving and processing television signals or other analogue or digitally processed audio or video signals without assistance of a central processing unit of a computer as defined in this agreement. The agreement does not, therefore, cover televisions, including high definition televisions.²³</p>
<p>Optical disc storage units</p> <p>For automatic data processing machines (including CD drives and DVD drives), whether or not they have the capability of writing/recording as well as reading, whether or not they are in their own housing.</p>
<p>Paging alert devices</p> <p>and parts thereof</p>
<p>Plotters</p> <p>whether input or output units of HS heading No. 8471 or drawing or drafting machines of HS heading No. 9017.</p>

Printed Circuit Assemblies

for products falling within this agreement, including assemblies for external connections such as cards that conform to the PCMCIA standard.

Such printed circuit assemblies consist of one or more printed circuits of heading 8534 with one or more active elements assembled thereon, with or without passive elements. "Active elements" means diodes, transistors, and similar semiconductor devices, whether or not photosensitive, of heading 8541, and integrated circuits and micro assemblies of heading 8542.

Projection type flat panel display units

used with automatic data processing machines which can display digital information generated by the central processing unit.

Proprietary format storage devices

including media therefore for automatic data processing machines, with or without removable media and whether magnetic, optical or other technology, including Bernoulli Box, Syquest, or Zipdrive cartridge storage units.

Multimedia upgrade kits

for automatic data processing machines, and units thereof, put up for retail sale, consisting of, at least, speakers and/or microphones as well as a printed circuit assembly that enables the ADP machines and units thereof to process audio signals (sound cards).

Set top boxes which have a communication function

a microprocessor-based device incorporating a modem for gaining access to the Internet, and having a function of interactive information exchange

ANNEX 3

A Brief Explanation of the Harmonized System (HS) of Tariff Classification

The HS of tariff classification is used by over 200 countries and covers more than 98% of all traded merchandise. Among the main objectives of the HS are: uniform classification of all goods in international trade for countries adopting this nomenclature; adoption of an international custom language; simplification and reduction of the ambiguity of negotiation and implementation of trade agreements; creation of a uniform basis for the collection of trade statistics.

The HS comprises over 1,200 headings grouped in 96 Chapters arranged in 21 Sections. Each heading is represented by a four-digit code, the first two denoting the Chapter and the latter two the position in which the heading appears within the Chapter. The majority of the headings are further subdivided by adding two more digits, and this can be further subdivided by adding two or more further digits if necessary.

Below is an excerpt from the HS 2007:

8517		Telephone sets, including telephones for cellular networks or for other wireless networks; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network), other than transmission or reception apparatus of heading 84.43, 85.25, 85.27 or 85.28.
	8517.11	- Telephone sets, including telephones for cellular networks or for other wireless networks : -- Line telephone sets with cordless handsets
	8517.12	-- Telephones for cellular networks or for other wireless Networks
	8517.18	-- Other
	8517.61	-- Base stations

Although the HS provides a logical structure for tariff classification, the assignment of applicable duties and the definition of specific detail items to any category remain within each country's policymaking ambit. These countries must respect, however, the six General Rules of Interpretation (GRI 1-6) of the Harmonized System of tariff classification. The three most important rules are the following:

- GRI 1 stipulates that classification is determined according to the terms of the heading and any subsequent Section and Chapter notes.
- GRI 2, or "Core Unit" rule, specifies that incomplete, unfinished, unassembled or disassembled goods should be classified as the final good if they represent the latter's essential character. For mixture or combination of materials GRI 3 applies.
- GRI 3 (a) stipulates that the heading with the most specific description applies for classification purpose. GRI (b) prescribes that "goods consisting of different materials or made up of different components, ... which cannot be classified by reference to GRI 3 (a) shall be classified as if they consisted of the material or component which gives them their essential character". Finally, GRI 3 (c) sets out that when "goods cannot be classified by reference to 3 (a) or 3 (b), they shall be classified under the heading that occurs last in numerical order among those which equally merit consideration..."

EU interpretation of classification of multifunctional ICT products: abstract of EC Regulation 1789/2004, 11 September 2003:

"CHAPTER 84 - NUCLEAR REACTORS, BOILERS, MACHINERY AND MECHANICAL APPLIANCES; PARTS THEREOF

Notes

[...]

5. [...]

(B) Automatic data-processing machines may be in the form of systems consisting of a variable number of separate

units. Subject to paragraph E below, a unit is to be regarded as being a part of a complete system if it meets all of the following conditions:

- (a) it is of a kind solely or principally used in an automatic data-processing system;
- (b) it is connectable to the central processing unit either directly or through one or more other units; and
- (c) it is able to accept or deliver data in a form (codes or signals) which can be used by the system.

[...]

(E) Machines performing a specific function other than data processing and incorporating or working in conjunction with an automatic data-processing machine are to be classified in the headings appropriate to their respective functions or, failing that, in residual headings."

ANNEX 4

PROPOSED PRODUCT CATEGORIES UNDER THE HS (2007) SYSTEM AS BASE FOR A RENEGOTIATION OF THE ITA

4-DIGIT HEADING	DESCRIPTION
38.18	Chemical elements doped for use in electronics, in the form of discs, wafers or similar forms; chemical compounds doped for use in electronics
84.43	Printing machinery used for printing by means of plates, cylinders and other printing components of heading 84.42; other printers, copying machines and facsimile machines, whether or not combined; parts and accessories thereof.
84.56	Machine-tools for working any material by removal of material, by laser or other light or photon beam, ultrasonic, electro-discharge, electro-chemical, electron beam, ionic beam or plasma arc processes.
84.69	Typewriters other than printers of heading 84.43; wordprocessing machines.
84.70	Calculating machines and pocket-size data recording, reproducing and displaying machines with calculating functions; accounting machines, postage-franking machines, ticket-issuing machines and similar machines, incorporating a calculating device; cash registers.
84.71	Automatic data processing machines and units thereof; magnetic or optical readers, machines for transcribing data onto data media in coded form and machines for processing such data, not elsewhere specified or included.
84.72	Other office machines (for example, hectograph or stencil duplicating machines, addressing machines, automatic banknote dispensers, coin-sorting machines, coin-counting or wrapping machines, pencil-sharpening machines, perforating or stapling machines).
84.73	Parts and accessories (other than covers, carrying cases and the like) suitable for use solely or principally with machines of headings 84.69 to 84.72.
84.86	Machines and apparatus of a kind used solely or principally for the manufacture of semiconductor boules or wafers, semiconductor devices, electronic integrated circuits or flat panel displays; machines and apparatus specified in Note 9 (C) to this Chapter; parts and accessories.
85.04	Electrical transformers, static converters (for example, rectifiers) and inductors.
85.17	Telephone sets, including telephones for cellular networks or for other wireless networks; other apparatus for the transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network), other than transmission or reception apparatus of heading 84.43, 85.25, 85.27 or 85.28.
85.18	Microphones and stands therefore; loudspeakers, whether or not mounted in their enclosures; headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers; audio-frequency electric amplifiers; electric sound amplifier sets.
85.19	Sound recording or reproducing apparatus.
85.21	Video recording or reproducing apparatus, whether or not incorporating a video tuner.
85.22	Parts and accessories suitable for use solely or principally with the apparatus of headings 85.19 to 85.21.

85.23	Discs, tapes, solid-state non-volatile storage devices, "smart cards" and other media for the recording of sound or of other phenomena, whether or not recorded, including matrices and masters for the production of discs, but excluding products of Chapter 37.
85.25	Transmission apparatus for radio-broadcasting or television, whether or not incorporating reception apparatus or sound recording or reproducing apparatus; television cameras, digital cameras and video camera recorders.
85.26	Radar apparatus, radio navigational aid apparatus and radio remote control apparatus.
85.27	Reception apparatus for radio-broadcasting, whether or not combined, in the same housing, with sound recording or reproducing apparatus or a clock.
85.28	Monitors and projectors, not incorporating television reception apparatus; reception apparatus for television, whether or not incorporating radio-broadcast receivers or sound or video recording or reproducing apparatus.
85.29	Parts suitable for use solely or principally with the apparatus of headings 85.25 to 85.28.
85.32	Electrical capacitors, fixed, variable or adjustable (pre-set).
85.33	Electrical resistors (including rheostats and potentiometers), other than heating resistors.
85.34	Printed circuits.
85.36	Electrical apparatus for switching or protecting electrical circuits, or for making connections to or in electrical circuits (for example, switches, relays, fuses, surge suppressors, plugs, sockets, lamp-holders and other connectors, junction boxes), for a voltage not exceeding 1,000 volts; connectors for optical fibres, optical fibre bundles or cables.
85.40	Thermionic, cold cathode or photo-cathode valves and tubes (for example, vacuum or vapour or gas filled valves and tubes, mercury arc rectifying valves and tubes, cathode-ray tubes, television camera tubes).
85.41	Diodes, transistors and similar semiconductor devices; photosensitive semiconductor devices, including photovoltaic cells whether or not assembled in modules or made up into panels; light emitting diodes; mounted piezo-electric crystals.
85.42	Electronic integrated circuits.
85.43	Electrical machines and apparatus, having individual functions, not specified or included elsewhere in this Chapter.
85.44	Insulated (including enamelled or anodised) wire, cable (including co-axial cable) and other insulated electric conductors, whether or not fitted with connectors; optical fibre cables, made up of individually sheathed fibres, whether or not assembled with electric conductors or fitted with connectors.
90.01	Optical fibres and optical fibre bundles; optical fibre cables other than those of heading 85.44; sheets and plates of polarising material; lenses (including contact lenses), prisms, mirrors and other optical elements, of any material, unmounted, other than such elements of glass not optically worked.
90.26	Instruments and apparatus for measuring or checking the flow, level, pressure or other variables of liquids or gases (for example, flow meters, level gauges, manometers, heat meters), excluding instruments and apparatus of heading 90.14, 90.15, 90.28 or 90.32.
90.27	Instruments and apparatus for physical or chemical analysis (for example, polarimeters, refractometers, spectrometers, gas or smoke analysis apparatus); instruments and apparatus for measuring or checking viscosity, porosity, expansion, surface tension or the like; instruments and apparatus for measuring or checking quantities of heat, sound or light (including exposure meters); microtomes.
90.30	Oscilloscopes, spectrum analysers and other instruments and apparatus for measuring or checking electrical quantities, excluding meters of heading 90.28; instruments and apparatus for measuring or detecting alpha, beta, gamma, X-ray, cosmic or other ionising radiations.

LIST OF ABBREVIATIONS

EC – European Communities
 EU – European Union
 GATT – General Agreement on Tariffs and Trade
 GATS – General Agreement on Trade in Services
 GPA – Government Procurement Agreement
 GPS – Global Positioning System
 GRI – General Rules of Interpretation of the Harmonized System
 GSM – Global System for Mobile communications
 HS – Harmonized System
 ICT – Information and communication technologies
 IT – Information technology
 ITA – Information Technology Agreement
 LCD – Liquid crystal display
 NAMA – Non-Agricultural Market Access
 NTB – Non-tariff barriers
 US – United States of America
 VCI – Virtual Channel Identifier
 WTO – World Trade Organization
 WCO – World Customs Organization

REFERENCES

- Customs Code Committee, Tariff and Statistical Nomenclature Section (2005), *Report of conclusions of the 360th meeting of the Committee*, TAXUD/555/2005-EN, Annex VII (March 2005)
- European Court of Justice (2008a), *Conclusions de l'Avocat Général, Affaires jointes C-362/07 et C-363/07*. July 17, 2008.
- European Court of Justice (2008b), *Conclusions de l'Avocat Général, Affaire C-376/07*. September 10, 2008.
- European Union, Delegation of the European Commission to the USA, "EU Rejects US Claims Over Technology Tariffs", EU/NR 55/08, May 28, 2008
- Fleiss, Barbara and Sauvé, Pierre (1998), "Of Chips, Floppy Disks and Great Timing: Assessing the WTO Information Technology Agreement", *Les Cahiers de l'IFRI*, no 26, Paris, Institut Français des Relations Internationales.
- Hoekman, Bernard M. and Kostecki, Michel M. (2001), *The Political Economy of the World Trading System. The WTO and Beyond*, Second Edition, Oxford University Press, pp. 208-236.
- Hudson Tellick, Lee (2007), "Fast-Track Trade Promotion Authority and Its Impact on US Trade Policy", in *Council of Foreign Relations Backgrounder*, 25 June 2007. Available on: <http://www.cfr.org/publication/13663/>
- ITAA, *Information Technology Definition Aggregation*, available on: <http://www.ita.org/es/docs/Information%20Technology%20Definitions.pdf>
- Kee, Hiau Looi, Nicita, Alessandro and Olarreaga, Marcelo (2008), "Estimating Trade Restrictiveness Indices", *World Bank Policy Working Paper*, No. 3840.

- Mann, Catherine (2006), *Accelerating the Globalization of America. The Role for Information Technology*, Washington, Institute for International Economics, 256 pp.
- Mann, Catherina and Liu, Xuepeng (2007), "The Information Technology Agreement: Sui Generis or Model Stepping Stone?", Paper presented at the WTO-HEI-CEPR Conference on Multilateralising Regionalism in Geneva, Switzerland, 10-12 September 2007.
- OECD (2002), Non-Tariff Measures in the ICT Sector: A Survey, Working Party of the Trade Committee, 11 September 2002, TD/TC/WP(2001)44/FINAL
- OECD (2003), *A Proposed Classification of ICT Goods*, Working Party on Indicators for the Information Society, 13 November 2003, DST/ICCP/IIS (2003)1/Rev 2.
- OECD (2006), *Information Technology Outlook*.
- OECD (2007), *Communications Outlook 2007*.
- Ofcom (2008), "What is Convergence? A submission to the Convergence Think Tank by Ofcom" to the Seminar Why Convergence Matters, London, 7 February 2008. Available on http://www.culture.gov.uk/Convergence/submissions/seminar1/ofcom_update4feb08.pdf
- Silbergitt et al. (2006), *The Global Technology Revolution 2020*, RAND Corporation, National Security Research Division.
- Stokes, Bruce (2008), "TV Boxes Set Off a Trade War", National Journal, 23 February 2008, pp. 52-53.
- Trebilcock, Michael J and Howse, Robert (2005), *The Regulation of International Trade*, 3rd Edition, London and New York, Routledge, 759 p.
- UNCTAD (2008), *Information Economy Report 2007-2008*.
- VanGrasstek, Craig (2000), "US Plans for a New WTO Round: Negotiating More Agreements with Less Authority", *The World Economy*, Volume 23 Number 5 (May, 2000).
- VanGrasstek, Craig and Sauv e, Pierre (2006), "The Consistency of WTO Rules: Can the Single Undertaking Be Squared with Variable Geometry?", *Journal of International Economic Law*, 9(4), 837-864
- Warwick Commission, The (2007), "The Multilateral Trade Regime: Which Way Forward?" *The Report of the First Warwick Commission*, The University of Warwick. Available on: <http://www.go.warwick.ac.uk/go/warwickcommission>
- World Bank (2008), *World Economic Prospects 2008. Technology Diffusion in the Developing World*.
- World Trade Organization (1996), *Ministerial Declaration on Trade in Information Technology Products. Ministerial Conference*, Singapore, 9-13 December 1996. WT/MN/(96)/16
- World Trade Organization (2003), G/IT/SPEC/Q2/11/Rev.1
- World Trade Organization (2007), *World Trade Report*, pp.13-32
- World Trade Organization (2008a), WT/DS375/1G/L/851
- World Trade Organization (2008b), WT/DS376/1G/L/852

World Trade Organization (2008c), WT/DS377/1G/L/853

Wunsch-Vincent, Sacha and Joanna McIntosh, 2004, *WTO, E-commerce, and Information Technologies: From the Uruguay Round through the Doha Development Agenda. A report for the UN ICT Task Force*, New York, The Markle Foundation.

Yu, Dayong, 2008, *The Harmonized System – Amendments and their Impact on WTO Members' Schedules*. Staff Working Paper ERSD- 2008-02. Geneva: World Trade Organization.

FOOTNOTES

1. A team of ECIPE scholars contributed to this paper. Roderick Abbott and Fredrik Erixon were significantly involved in the research and advised the authors. Daniel Capparelli and Nanna Matsson provided excellent research assistance. We thank the officials, negotiators, lawyers and business representatives who have shared their views with us and given comments on earlier versions of this paper.
2. This paper will use the term ICT (“Information and Communication Technologies”) for the products covered by the ITA (“Information Technology Agreement”). This is not absolutely correct from a technical point of view: the ITA does not cover all ICT goods and there are goods in the ITA which are not ICT. The ITA is a hybrid of IT goods and consumer electronics, and there is no proper term that could cover both types of goods. In the authors’ view, the term “ICT” captures better the product coverage of the ITA, which includes communication devices such as telephones. This choice also follows the OECD’s use of the term ICT in its own work related to the ITA (see OECD documents in reference list).
3. WTO (2008), pp.16-17. 2005 is the year for which the latest aggregate figures are available.
4. World Bank (2008).
5. Mann (2006).
6. DSTI/ICCP/IIS(2003)1/REV2
7. This section draws primarily from Fleiss and Sauv  (1998).
8. Fleiss and Sauv  (1998), p.27
9. VanGrasstek and Sauv  (2006)
10. This paragraph draws mainly from Mann and Liu (2007)
11. I.e. countries staying out of the negotiation to avoid giving concessions but then benefiting from the concessions granted by those who did participate
12. WT/MIN/(96)/16.
13. Yu (2008).
14. WT/MIN/(96)/16
15. WTO (2007), p. 18
16. WTO (2007), p.16
17. OECD (2006), p. 76

18. See European Court of Justice (2008a).
19. See European Court of Justice (2008b).
20. For an account of the negotiations leading to the ITA and the compromises that were necessary to achieve it, see Fleiss and Sauvé, 1998.
21. For the HS aficionado, it is mainly chapter 85 that is suggested for integration into the ITA. Chapter 85 is of particular importance as it covers electronic goods. But chapter 84, which is bundled together with chapter 85, also comprises key goods which should be covered by a new ITA.
22. Only Canada, the EU, Hong Kong, Iceland, Israel, Japan, Korea, Liechtenstein, Aruba, Norway, Singapore, Switzerland and the United States are parties to the GPA.
23. Participants will conduct a review of this product description in January 1999 under the consultation provisions of paragraph 3 of the Declaration