

CHAPTER 16

CREATING SUSTAINABLE GLOBAL SUPPLY CHAINS THROUGH SINGLE WINDOW AND PAPERLESS TRADE INITIATIVES: EFFORTS OF WTO AND UNCITRAL IN PERSPECTIVE

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I INTRODUCTION

Over the last several years, numerous multilateral and regional institutions dealing with economic affairs and many governments have been engaged in various law and policy initiatives related to e-commerce, paperless trade, electronic single window, and cross border e-transactional and commercial law matters. To a certain extent, these efforts have been covered under the heading "trade facilitation" which is about simplifying and harmonizing formalities, procedures, and the related exchange of information and documents between the various partners in the supply chain. While trade facilitation is commonly considered as standards and guidelines for the exchange of goods and services across borders,¹ it can also be seen as a term referring to the more commercial aspects of trade depending on which particular institution is using it. This paper highlights the role of two international institutions, namely the World Trade Organization (WTO) and the United Nations Commission on International Trade Law (UNCITRAL) in making international supply chains sustainable through their efforts in the modernization and harmonization of international trade law.

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1 See the definitions of trade facilitation as used by institutions such as WTO, United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT), and World Customs Organization (WCO).

During the Uruguay rounds, the trade negotiations at WTO focused mainly on reduction in tariffs and quantitative restrictions as import substitution and protection of industries was an essential part of development strategy.² However, the advent of global supply chains led to goods crossing borders several times as inputs and as final products. In 2013 the WTO adopted the Trade Facilitation Agreement (TFA) to make border management procedures and controls efficient.³ The TFA resulted in the broader use of information and communications technologies (ICT) in member-states.⁴ The main question explored in section 2 of this paper is whether the TFA has adequate operational focus and if it is able to cope with the realities of modern business. The paper explains that the implementation of the single window reform across trading countries of the world may lead to the creation of a global information channel which will enhance predictability of supply chains.

UNCITRAL, the main United Nations (UN) General Assembly body responsible for international trade law,⁵ through its Working Group IV (Electronic Commerce) has developed two e-commerce model laws and one convention on electronic communications.⁶ Since 2011, Working Group IV is engaged in work related to electronic transferable records.⁷ This effort is of particular relevance in the emerging international goal of paperless trade as it aims to create harmonized rules for electronic transferable records, in order to benefit the promotion of electronic communications in international trade and to address certain specific

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- 2 A Kreuger "Trade Policy and Economic Development: How we Learn" (1997) 87 (1) American Economic Review 1-22; B Bora, J Lloyd and M Pangestu "Industrial Policy in the WTO" (2000) 23 The World Economy 543-559.
 - 3 World Trade Organisation, Preparatory Committee on Trade Facilitation "WTO Agreement on Trade Facilitation" WT/L/931, (15 July 2014) <www.wcoomd.org/en/topics/wco-implementing-the-wto-atf/~/_media/WCO/Public/Global/PDF/Topics/Facilitation/Activities%20and%20Programmes/TF%20Negotiations/WTO%20Docs/TNTF/2014/931%20EN.ashx>. As of 18 April 2016, it has received seventy four ratifications.
 - 4 Article X of the TFA suggests that member-states should implement National Single Windows (NSW). Other Articles also recommend the use of ICT methods for trade.
 - 5 Since its creation by the United Nations General Assembly, the Commission has focused primarily on international commercial law as a mechanism to promote trade as opposed to concepts of trade law, such as reduction of trade barriers, etc. UNCITRAL has increasingly shifted its focus towards modernization rather than progressive harmonization of laws and has invented new legal techniques such as guides to enactment, recommendations, model legal provisions, and legislative guides that offer greater flexibility to reform a broader range of laws, especially with the benefit of time and incremental progress.
 - 6 See section 2 below.
 - 7 The working documents including draft provisions on electronic transferable records are available at <www.uncitral.org/uncitral/en/commission/working_groups/4Electronic_Commerce.html>.

issues such as assisting in the implementation of the Rotterdam Rules. In July 2015, Working Group IV decided to undertake a project to develop "a basic legal framework covering identity management transactions, including appropriate provisions designed to facilitate international cross-border interoperability."⁸ Section 3 of this paper discusses how the on-going and forthcoming initiatives of Working Group IV on electronic transferable records and digital identity management, respectively are necessary for the vertical integration of the three layers of international supply chains that constitute of - the physical movement of goods, the financial facets of the transaction, and the flow of information within the various actors in the supply chain. The paper focuses on development of a legal framework to facilitate use of supply chain finance (SCF) in international trade.

In conclusion, this paper highlights that the WTO and UNCITRAL initiatives will lead to an increased situational awareness of the various actors in the supply chain through federated information exchange and service-provisioning ecosystem, in which governmental agencies and private actors may rely on a coordinated service and information-sharing framework.

II WTO TRADE FACILITATION AGREEMENT

Regulatory controls implemented by governments at the border concerns a wide range of measures, which can be categorized as follows:⁹

- (1) Trade policy- eg, administration of quota restrictions, agricultural refunds;
- (2) Revenue collection- eg, collection of customs duties, excise duties and other indirect taxes, payments of duties and fees, management of bonds and other financial securities;
- (3) Safety and security- eg, anti-smuggling controls, dangerous goods, vehicles checks, immigration and visa formalities, export licenses;
- (4) Environment and Health- eg, phytosanitary, veterinary and hygiene control, health and safety checks;
- (5) Consumer protection- eg, product testing, labelling, conformity checks with marketing standards.

The above-mentioned measures demonstrate a multitude of activities that occur at the border which are controlled by different government agencies and departments. This interconnected environment where the government agencies and

8 "UNCITRAL "Report of Working Group IV (Electronic Commerce) on the work of its fifty-first session, New York, 18-22 May 2015", A/CN.9/834, 29 May 2015 <<https://daccess-ods.un.org/TMP/2788850.36706924.html>>.

9 For a detailed discussion see A Grainger "Trade Facilitation: A Conceptual Review" (2011) 45(1) *Journal of World Trade* at 39-62.

businesses interact with each other poses several challenges. Specifically, for the business participants of the supply chain these different controls implemented by the border agencies entail increased costs and loss of time, as the traders have to submit information to different authorities. The various actors of the international supply chain constituting of traders, carriers, agents and intermediaries are concerned with the costs that add up due to wide range of control regimes and custom procedures. For instance, different type of information may be requested by each of the aforesaid agencies, in different formats. Sometimes the same information could be collected by different agencies. In addition, each of the agencies may take different time in processing the information and giving the necessary clearance. All these factors may result in extensive procedural requirements which lead to an increase in undesirable complexity, associated cost of transactions and gives rise to the risk of committing mistakes.

From a supply chain perspective, for the purposes of smooth operation of the movements of goods across the borders it is absolutely essential that the border procedures be fast, predictable and efficient.¹⁰ The supply chain is not able to perform efficiently and within the constraints of time frame if it suffers unpredictable delays at the border. The supply chain must be able to cater to the trader's requirement that is dependent on their capability to respond to consumer needs and preferences, which in turn would be key determinant in their success as an actor in the global markets. In addition, it is important to note that the delays at the border impose substantial costs on the traders and larger share in these costs can be attributed to loss of business opportunity and depreciation.¹¹ The OECD estimates that up to 7 per cent of the USD 12 trillion value of international trade each year is consumed up by the cost of documentation and in some cases the cost

10 This aspect is important as modern international trade relies heavily on supply chains where companies split the production of goods and services among many countries to reduce overall costs. This has given rise to the phenomenon of "global manufacturing". The manufacturing of a product is characterized by geographical fragmentation of production processes and offshoring of industrial tasks. See R Baldwin "Globalization: The Great Unbundling(s)" (2006) Economic Council of Finland at [5-47]. Richard Baldwin notes that the process of production is "sliced and diced" into parts, which is spread around the globe. Simply, stated the value of the product is not created by single trader and not confined to one country.

11 A study conducted by the Organization for Economic Co-operation and Development (OECD) indicates that transaction costs can be direct such as those related to physically presenting the goods to border management agencies and other indirect costs such as those related to delays at border which cause business opportunities to be missed. See OECD "Quantitative Assessment of the Benefits of Trade Facilitation TD/TC/WP (2003) 31/FINAL" (13 November 2003) <[www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TD/TC/WP\(2003\)31/FINAL&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=TD/TC/WP(2003)31/FINAL&docLanguage=En)>; OECD "Overcoming Border Bottlenecks: The Costs and Benefits of Trade Facilitation" (2009) <www.keepeek.com/Digital-Asset-Management/oecd/trade/overcoming-border-bottlenecks_9789264056954-en#page1>.

of complying with customs formalities exceed in many instances the cost of duties to be paid. In addition to the costs argument, one has to appreciate the relation of time and international trade with respect to exports and imports. It has been found that lengthy procedures for exports and imports have a great negative impact on the time sensitive products thereby emphasizing the need to reduce the impediments to global sourcing and international production sharing arising from border processes.¹²

Policy makers have increasingly understood the problems faced by the international trading community at border crossings. Countries in their roles as importers and exporters are participants in global value chain for products. This role emphasizes the need for a comprehensive trade facilitation reform which seeks to consolidate and multilateralise the commitments to create a more efficient trading processes and procedures at the borders.¹³ These trade circumstances reinforces the need for balancing the regulatory aspect and the business viability of borders that make the discussion on trade facilitation increasingly relevant. One recent initiative to address the concerns of the global business community connected with inefficient border management procedures and controls is the Trade Facilitation Agreement (TFA),¹⁴ which is the result of the Bali Ministerial Conference in December 2013.¹⁵ A newly established Preparatory Committee has also been mandated to ensure the expeditious entry into force of the agreement and to prepare for its efficient operation. This TFA is the result of several years of contentious negotiations and it is noteworthy that the WTO members have finally reached consensus on the issue. Once the Agreement comes into force Member States would initiate infrastructural and legislative reforms to fulfil their commitments to the WTO.

It should be noted that the provisions in the TFA are an extension of GATT provisions Article V (freedom of transit), Article VIII (fees and formalities connected with importation and exportation) and Article X (publication and administration of trade regulations) that the members have negotiated on. The Preamble to the TFA clearly states to that effect. Broadly, the TFA covers

12 H K Nardas, E Pinali and M G Grosso "Logistics and Time as a Trade Barrier" (2006) OECD Trade Policy Working Paper No 35. TD/TC/WP (2006) 3/FINAL <www.oecd.org/tad/services-trade/logisticsandtimeasatradebarrier.htm>.

13 OECD "Interconnected Economies: Benefiting from Global Value Chains" (2013) <www.oecd.org/sti/ind/interconnected-economies-GVCs-synthesis.pdf>.

14 World Trade Organisation, Preparatory Committee on Trade Facilitation, Agreement on Trade Facilitation WT/L/931 15 July 2014 <http://tfig.unece.org/pdf_files/931.pdf>.

15 WTO "Bali Ministerial Declaration and Decisions" (2013) <http://wto.org/english/thewto_e/minist_e/mc9_e/balipackage_e.htm>.

transparency and predictability measures, procedural simplification in the border processes and co-ordination and co-operation between various border agencies.

The following section focuses on the provision of Single Window as an important contribution of the TFA.¹⁶ The discussion will highlight the potential benefits of Single Window for the international trading environment and would draw connections between the work of the WTO and UNCITRAL. It is proposed when implementing the single window reform Member States will seek recourse to the relevant UNCITRAL's model laws and conventions that will reinforce the relevance for the acceptance of the same. This section also explores the various challenges and obstacles in practice, specifically from costs of implementing the reform. It is submitted that the simplification and harmonization of applicable rules and procedures will improve the environment in which businesses operate as harmonized rules and procedures enables a more efficient and predictable border that lowers trade costs.

2.1 *Single Window*

A typical international supply chain features the physical movement of goods, the financial aspects of the transaction, and the flow of information within the various actors in the supply chain. The focus of this paper is to highlight recent international initiatives that seek to address the physical movement of goods, financial aspects of the transactions and the connected information flows. Earlier, these three layers existed as parallel processes with little interaction between them. However, from a supply chain sustainability perspective the three layers need to interact with each other. The interaction between the three layers is made possible through increased use of ICT. The importance to flow of information can also be gleaned from the WTO's definition of trade facilitation which states as follows:¹⁷

the simplification and harmonization of international trade procedures" covering the "activities, practices and formalities involved in collecting, presenting, communicating and processing data required for the movement of goods in international trade.

The definition considers the interconnectedness economic environment that the trade facilitation measures aim to address. This definition refers not only to the

16 Researchers have always found it challenging to estimate how the trade facilitation reform affects the trading environment and for this purpose turned to econometric analysis. However, from a policy perspective the deliberation must be based on a precise estimation of the cause and effect of the trade facilitation reform on the trading environment.

17 See Krista Lucenti "Trade Facilitation and the WTO" in Simon J Evenett and Bernard M Hoekman (eds) *Economic Development and Multilateral Trade Cooperation* (Palgrave Macmillan and the World Bank, Washington, 2006) 271-300 at 278.

government agencies that are concerned with the transit of goods but also include entities that conduct business associated with trade. More importantly, it also emphasizes on the flow of information that is associated with the physical movement of the goods. The information flows regarding the goods traded is extremely important for different actors in the supply chain as it helps eliminate any risks that may arise. It is also relevant for the governmental agencies that intervene in the transit for goods for the purposes of security and revenue collection. An important practical tool for the purposes of co-coordinating the process and procedures at the borders through the flow of information is the single window. The concept of Single window is also supported by almost all of the border management models.

The concept of Co-ordinated Border Management is now being emphasized more often in policy documents.¹⁸ The above concept inheres the idea that all relevant authorities and agencies, such as border guards, customs, veterinary and phytosanitary inspection administrations, etc., involved in border management establish an integrated and efficient border management system for the purposes of an open but secure border. The culture of co-operation aims at facilitating the movement of goods and people in accordance to the legal requirement by improving the co-operation and co-ordination among the relevant authorities. This concept has been imbibed and promoted at different levels and may be referred by different terms. The European Union uses the term "Integrated Border Management"¹⁹ while the World Bank takes a much broader approach by using the term "Collaborative Border Management".²⁰

18 S Aniszewski "Coordinated Border Management - A Concept Paper" (June 2009) WCO Research Paper No 2, World Customs Organization <www.wcoomd.org>. Also see Tom Doyle "Collaborative Border Management" (2011) 4(1) World Custom Journal 15-21. G McLinden, E Fanta, D Widdowson and T Doyle "Border Management Modernization Handbook" (2011) <<http://issuu.com/world.bank.publications/docs/9780821385968>>. Jean-François Arvis et al "Connecting to Compete 2010: Trade Logistics in the Global Economy – the Logistics Performance Index and its Indicators" (World Bank 2010) <<http://documents.worldbank.org/curated/en/892771468176947796/Connecting-to-compete-2010-trade-logistics-in-the-global-economy-the-logistics-performance-index-and-its-indicators>>.

19 European Commission "Guidelines for Integrated Border Management in European Commission External Cooperation" (November 2010) <<http://capacity4dev.ec.europa.eu/ibm-eap/document/1-guidelines-integrated-border-management-european-commission-external-cooperation-european>>. The concept of the Integrated Borders Management in the European context can be better understood by seeking recourse to the European Commission "Guidelines for Integrated Border Management in the Western Balkans" (January 2007) <www.legislationline.org/documents/id/16809> that defines the term more clearly.

20 The WCO uses the term 'Coordinated Border Management' as it aims to emphasise on the principle of co-ordination of policies, programs and delivery outcomes by not favouring a single solution.

The World Customs Organizations (WCO) emphasizes that the Single window system is of paramount importance to Integrated Border Management System. Single Window is defined by the WCO as:²¹

An intelligent facility that allows parties involved in trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export and transit related regulatory requirements.

The three basic models for the single window indicated by the UN/CEFACT are as follows:²²

- a single authority receiving information and disseminating this information to all relevant governmental authorities, as well as co-ordinating controls to prevent undue hindrance in the logistical chain;
- a single automated system for the collection and dissemination of information, thereby integrating the electronic collection, use, and dissemination (and storage) of data related to trade crossing the border;
- an automated information transaction system through which a trader can submit electronic trade declaration to the various authorities for processing and approval in a single application.

The benefits of single window system where implemented is well established through numerous surveys and economic analysis.²³ Many of the upper middle-income countries use single windows and in several other countries the implementation process is underway. The Korean Customs Service had initially created an internet based portal to connect traders to different agencies, which later on evolved into a single window, and resulted in savings of billions of dollars. Other examples of national single window systems are International Trade Data System (ITDS) of US, TradeXchange of Singapore and PortNet of Finland.

It would be apt to mention the EU Maritime transport single window (MSW) which mandates Member States of the EU to accept the fulfilment of ship reporting

21 World Customs Organisation "Single Window Information Store" <www.wcoomd.org/en/topics/facilitation/activities-and-programmes/single-window/single-window.aspx>.

22 United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) "Recommendation and Guidelines on Establishing a Single Window- to Enhance the Efficient Exchange of Information between Trade and Government, Recommendation No 33 (Economic Commission for Europe, United Nations, New York and Geneva, 2005) <www.unece.org/fileadmin/DAM/cefact/recommendations/rec33/rec33_trd352e.pdf>.

23 For instance, in Costa Rica, the introduction of a new single window for all purposes has helped reduce clearance time for dairy products from 10 to 1.5 hours. For further discussion see RZ Lawrence, MD Hanouz and S Doherty (eds) *The Global Enabling Trade Report 2012 Reducing Supply Chain Barriers* (World Economic Forum, Geneva, 2012).

formalities in electronic format and their transmission via a single window. This has been associated primarily with two interrelated policies:

- (1) Directive 2002/59/EC for vessel traffic monitoring (the VTMISS Directive) is aimed to improve safety and environmental protection in European seas;
- (2) Directive 2010/65/EU for ships arriving in and/or departing from ports of the Member States (Reporting Formalities Directive), describing the actions that Member States should implement to make efficient use of electronic data transmission and information exchange systems.

One thing that emerges is that the single window reform across countries is much more fragmented than desired. A multilateral initiative such as the TFA ensures the implementation of the single window reform across trading countries of the world. Article 10 of the TFA mandates that all Members of the WTO shall endeavour to establish and maintain a single window enabling traders to submit documentation for export, import and transit of goods through a single entry point. At this juncture, it is important to mention that the implementation of a single window system develops on the GATT 1994 Article VIII concerning Fees and Formalities connected with the importation and exportation, where paragraph 1(c) recognizes "the need for minimizing the incidence and complexity of import and export formalities and for decreasing and simplifying import and export documentation requirement". The single window system under the TFA has to be implemented by the Members of the WTO thereby allowing traders to lodge information with a single body for the purposes of all import or export related regulatory requirements. This system seeks to ensure that all procedures, data and requirements related to the trade transaction is handled and overseen by one agency which takes the responsibility of combined controls. In addition to making the procedural requirements for the traders simple and standardized, this system facilitates information flows enhancing efficiency. Significant savings will occur in terms of the reduction of paperwork, processing time, and time spent in data re-keying. This seamless and timely flow of information from the business to the governments will make it possible for a predictable management of the supply chain. Once the single window has been set up the resulting defined set of standards and protocols for the purpose will effectively shield stakeholders in the trade and logistics sector from the effects of frequent upgrades in standards and protocols, and thereby reduce the in-house resources required.

It has been observed that value created directly and indirectly by services as intermediate input represents over 30 % of the total value added in manufactured

goods.²⁴ In addition, to saving on costs and enhancing efficiency of the product supply chain operation at the border the seamless flow of information will also make it possible for service providers industry (eg, logistics sector) that are dependent on timely and seamless information to benefit in terms of saving operational costs. If one focuses on the logistics sector, the benefits accruing to them will be passed on to the traders that would save the fixed costs of the in-house logistics provisions which in turn would impact the volume of trade. This increased volume of trade will then enable more logistics service suppliers to operate at lower costs, allowing more timely delivery of their services which in turn will further export expansion. Meanwhile, the well-developed logistics sector will benefit the small and medium sized firms both in local and international markets by reducing their entry barrier. It is be noted that enhancement of the logistics sector will invariably contribute to the global value chains. Many other spin-off benefits will also be observed from the reform such as development of new business opportunities for the IT sector which will provide solutions and support for the functioning single window which will also be reflected in increased employment opportunities.

More important deliberation in the context of single windows concerns its implementation as many see it as a technological or an organizational challenge. However, it is much more complex than that. The implementation of single windows in various forms deals with information exchange infrastructure between B2G, B2B and G2G. Single windows need to be supported by a legal framework to formalise and induce trust in the emanating transactions.

Some relevant legal issues that need to be addressed in context of single window operation are as follows:

- Standards and procedures for establishing an appropriate organizational structure for the implementation of the single window.
- Ensuring the credibility, reliability and security of data that is in turn linked to the need of the business entities for secure e-commerce transactions.
- Implementing of identification, authentication and authorization procedures associated with the transactions.
- Ensuring accuracy and integrity of the data connected with liability, responsibility of actors for the accuracy and integrity of such data.
- Data ownership and intellectual property issues.

24 OECD, WTO and UNCTAD "Implications of Global Value Chains for Trade, Investment, Development and Jobs" (6 August 2013) OECD <www.oecd.org/trade/G20-Global-Value-Chains-2013.pdf>.

- Data trails and electronic archiving to avoid risk of exposure. Data or information may be required on a later date for the purposes of dispute resolution, etc. Therefore, issues concerning data retention must be clarified.
- Consideration of data and legal interoperability between different actors (B2B, B2G, G2G) connected to the single window transactions. In addition, clarification of legal issues arising from private data processing at different geographical locations in the world.
- Data protection is fundamental as the consumer loses a degree of control over personal data when provided to the service provider for processing.²⁵
- Dispute resolution mechanism to provide a fast and reliable remedy in cases of dispute arising in context of single window operations.

Many of the legal issues pertaining to the establishment and operation of single windows can be addressed through contracts and memoranda of understandings between relevant participants but others can be addressed through recourse to international standards. It should also be noted that several standards relevant in context of single windows have been developed by intergovernmental agencies and international organizations such as UNECE, UNCTAD and WCO. Important legal issues considered by UNCITRAL related to electronic commerce such as liability, authentication, and the legal status of electronic documents are hugely relevant in context of single window operation. It should be noted that UNCITRAL basic e-commerce laws such as the UN Electronic Communications Convention; UNCITRAL Model Law on Electronic Commerce (MLEC); UNCITRAL Model Law on Electronic Signatures (MLES) provides legal framework for the operation of single window facilities. The current initiative of UNCITRAL on Electronic Transferable Records is also relevant because the processes connected with single window transactions are electronic but still based on paper. UNCITRAL's current work on the electronic transferability of documents of title and the functional equivalence of electronic documents is also relevant in context of single window transactions.²⁶

Once the TFA is implemented, it will result in an environment where WTO Member States would have an operational Single Window. This would result in creation of an international single window environment where each of these windows would be in a position to communicate with each other. In the current

25 International consensus on data protection is reflected in OECD "Guidelines on the Protection of Privacy and Transborder Flow of Personal Data" (2013) <www.oecd.org/sti/ieconomy/oecdguidelinesonthe protection of privacy and transborder flow of personal data.htm>.

26 See UNCITRAL Report of Working Group IV (May 2015), above n 8.

highly interconnected international trading scenario the border agencies need to work together in order to encompass the entire supply chain where the goods can be assessed for admissibility and clearance prior to their arrival at the physical border. Measures of co-ordination and co-operation range from policy to documentary and physical control amongst domestic and international border agencies. However, the co-operation and co-ordination between international border agencies is based on a political mandate and can manifest through international agreements and ratification of relevant conventions. In this context the proposed TFA's role can be instrumental in achieving the desired result, as it will lead to political commitment from WTO Members because of its multilateral nature. Article 12 of the TFA provides measures for customs cooperation. It has to be recognized that the co-ordination exercise is not easy to achieve as each Member State may have its own requirements and set of rules that need to be harmonized internally as the first step and then build a relationship based on trust with other Member States.

The benefits of coordinating the activities of various governmental agencies in a single transaction ensure a fast moving uninterrupted supply chain resulting in time saving and efficiency gains. In addition, faster border crossings allow traders to access market on both sides of the borders. Several methods may be used to co-ordinate the border management such as "one-stop" and joint border crossings.²⁷ This initiative is especially relevant in context of the landlocked countries. Regional organizations in East, West and Southern Africa have lead in the planning of joint border and one stop posts.²⁸ Article 12 of the TFA can be helpful from a futuristic perspective when considering a co-ordinated international single window because it would establish the process and procedures for the purposes of exchange and interaction between border agencies of different jurisdictions. It is important to note that single window cooperation at a regional level exists in the ASEAN which very much inheres the elements of co-operation between border agencies of different member countries.

27 One stop and joint border crossing points operate with co-operation between Sweden and Norway; Zimbabwe and Zambia and South Africa and Mozambique.

28 EJ Balistreri, DG Tarr and H Yonezawa "Reducing Trade Costs In East Africa: Deep Regional Integration And Multilateral Action" Policy Research Working Paper No. WPS 7049 (1 September 2014) <<http://documents.worldbank.org/curated/en/2014/09/20250345/reducing-trade-costs-east-africa-deep-regional-integration-multilateral-action>>; I Borchert, B Gootiiz, A Grover and A Mattoo "Landlocked or Policy Locked? How Services Protection Deepens Economic Isolation" (2012) World Bank Policy Research Working Paper 5942 <www.imf.org/external/np/seminars/eng/2011/trade/pdf/session3-Borchert-paper.pdf>; R Hoekstra "Boosting Manufacturing Firms' Exports? The Role of Trade Facilitation in Africa" (2013) Ruhr Universität Bochum, IIE working paper 197 <www.development-research.org/images/pdf/working_papers/wp-197.pdf>.

It is submitted that the interoperability of national single windows will allow exchange of data but it has to be accurate, seamless and secure. The major legal concerns are personal data protection and data privacy that has not been fully addressed at an international level.²⁹ It is further submitted that the national single window proposed by the TFA by itself could serve the purpose of creating an advanced collaborative information-sharing platform for various stakeholders in international supply chains, such as financial institutions and transport operators. Such a collaborative information-sharing platform entails consideration of B2B paperless trade aspects that is currently on UNCITRAL's agenda.

2.2 Addressing Implementation Challenges

It is undisputed that the implementation of the TFA will aid seamless flow of relevant information for decision makers, e-commerce for consumers, logistics management and communication for numerous stakeholders in the global value chain. However, one important concern is that implementation of the TFA pose technological and infrastructural challenges for several Member States which would jeopardise the latitude of the reform.³⁰ WTO Members from the developing countries and least developed countries (LDCs) voiced the concern regarding the cost of implementing the TFA. In fact, during the negotiation, some Members argued that the TFA was only to serve the needs of the developed world to gain better access to the markets of the developing world. Simply stated, the Member countries were concerned that the implementation of the TFA will come at substantial costs for new IT infrastructure, facilities, training of personnel, etc.³¹

From an implementation context, it has been remarked that the TFA contains a mix of binding disciplines and best endeavour commitments.³² The TFA model seems to offer flexibilities by encompassing a set of rules that apply to all WTO members while allowing for extensive differentiation in terms of timing of implementation and the enforceability of specific disciplines.

29 UNCITRAL considered working in this area at its 39th Plenary Session in 2006 but prioritized its work on international commercial and trade law over data protection law.

30 OECD and WTO "Aid for Trade at a Glance 2015: Reducing Trade Costs for Inclusive, Sustainable Growth" (2015) <www.oecd.org/trade/aid-for-trade-at-a-glance-22234411.htm>. UNCTAD "The New Frontier of Competitiveness in Developing Countries: Implementing Trade Facilitation" (2014) <http://unctad.org/en/PublicationsLibrary/dtl1b2013d2_en.pdf>.

31 WTO "Modalities for Negotiations on Trade Facilitation, Doha Development Agenda: Text of the 'July package' – the General Council's post-Cancún decision, Annex D" (1 Aug 2004) <www.wto.org/english/tratop_e/dda_e/draft_text_gc_dg_31july04_e.htm>.

32 B Hoekman "The Bali Trade Facilitation Agreement and Rulemaking in the WTO: Milestone, Mistake or Mirage?" EUI Working Paper RSCAS 2014/102 <cadmus.eui.eu/bitstream/handle/1814/33031/RSCAS_2014_102.pdf>.

For a developed Member who accepts the TFA, entry into force would mean acceptance of all the provision under Section I as WTO obligations. Section II addresses the implementation concerns of the developing country and LDC Members by providing special and differential treatment through a complex process. Section II allows the developing country and LDC Members to determine unilaterally when they will apply the provision set out in Section I. For developing and least developed countries, implementation is divided into three categories with specific timelines outlined in the Agreement. A Member country is allowed an extension of the transition period they specified initially in the schedule as per the process and procedure set out in the Agreement. When a Member country notifies implementation difficulties where the transition period has expired, the TFA Committee will establish an Expert Group to examine the situation and make recommendations. Until the recommendations are finalised by the Expert groups the dispute settlement process cannot be initiated.³³

A review of the implementation provision highlights the extent of flexibility awarded to those Members that require time and aid in order to build their capacity. The most important aspect is this that the Agreement addresses the challenges that the emerging economies will face when implementing the reform. To this effect the Agreement emphasises the role of developed countries to support to developing country and LDC Members, on mutually agreed terms either bilaterally or through the appropriate international organizations.

III LEGAL FRAMEWORK TO SUPPORT SCF IN INTERNATIONAL TRADE

3.1 International Trade Finance and Risk Mitigation

The global financial crisis from 2008 has shown that the existing legal framework for international trade is not adequate to keep up with the changes in business trends and practices as it fails to provide a safety net during the time of crisis. In the need for speed traders have increasingly created new practices that do not adhere to the existing legal framework that was designed for the paper-based world. Greater use of ICT in international trade has increasingly allowed traders to disassociate payment from data and documents.

A couple of decades ago, most international trade transactions used intermediated trade finance such as letters of credit which not only supported the transaction by providing funds to the exporter or the importer or to both but also provided a sophisticated mechanism to mitigate the risks borne by exporters and

³³ Article 20 of the TFA.

importers.³⁴ However, in the past two decades trading parties have increasingly used open account,³⁵ a form of inter-firm trade finance, which has exposed the exporter to non-delivery transactional risks. Open account is cheaper than a letter of credit, but the former does not enjoy the guarantee of payment from a financial intermediary. This left several exporters bankrupt during the recent global financial crisis because the buyers to whom they had extended credit were insolvent.

Prior to the financial crisis importers and exporters had relatively easy access to trade finance driven by high liquidity. At that time the international trading community did not tend to follow the usual risk mitigation techniques of intermediated trade finance. The focus was more on prompt payment and data flows, which led to the frequent use of open account terms. However, the financial crisis made the international trading community across the world rethink its optimization efforts, especially with regard to trade finance.

To rectify the situation faced by exporters during the last financial crisis, the banking industry in 2013 introduced a new intermediated trade finance solution called the bank payment obligation (BPO). This trade finance form is in its nature very similar to a letter of credit, albeit not identical.³⁶ The BPO is a standardized

34 The following example of a typical international trade transaction between a European importer and a Chinese exporter of a complex machine in which a letter of credit is used displays this more in detail. As a first step, the European importer (the applicant) procures the opening of a documentary letter of credit by a European bank (the issuing bank). This credit will be notified to the Chinese exporter (the beneficiary) by a Chinese bank (the advising bank). It is usual for the advising bank to add its own confirmation so that it becomes bound. It then becomes the confirming bank. Sometimes the documents will be for convenience sake presented to a different bank (the nominated bank), but it is usually the case that the confirming bank is also the nominated bank. So the Chinese exporter will present the documents to the confirming bank, which will then make payment, to be reimbursed in turn by the issuing bank (for whom it acts in an agency capacity). The documents will then be passed on to the issuing bank, which will release them to the applicant so that the latter can collect the goods from the carrier. Banks involved in this process will often hold the shipping documents so that they have security for the advances. If the issuing bank makes an advance to the importer in the shape of payment made to the exporter and eventually releases the documents to the importer under a so-called "trust receipt", the continuing pledge of the documents gives the bank security over the goods themselves and their proceeds.

35 In an open account transaction the supplier (exporter) extends a trade credit to the buyer (importer), which allows the latter to postpone the payment of goods to a later time than the delivery date. The importer typically has 30–90 days after the date of delivery to make this payment. In the meantime, the exporter must counterbalance the financial claim on the importer by either raising internal or external funds. The exporter also has to finance expenses incurred between the selling/order date and the delivery date. Besides the cost of capital, the (credit) risk of non-payment is borne by the exporter and, depending on the exporter's capital structure, indirectly by its external creditors.

36 See GL Wynne and H Fearn "The bank payment obligation: will it replace the traditional letter of credit – now, or ever?" (2014) 29 *Butterworths Journal of International Banking and Financial Law* 102-104.

interbank instrument, which is based on electronic information. Unlike a letter of credit, which requires that physical trade documents are manually examined, the BPO requires access to electronic trade data. This data is controlled, verified and matched over time in a highly automated process as new electronic trade data are submitted about progress of the underlying trade transaction.

Figure: Process flow comparison between a letter of credit, a TSU bank payment obligation and an open account³⁷



3.2 SCF

The financial crisis clearly underscored the concern that a supply chain is only as financially strong as its weakest link. In many cases, the weakest link is shown to be a SME (small and medium enterprise) with limited, if any, access to traditional bank financing at reasonable terms. "SME's financing problem directly affects supply chain's operation and its competitiveness, and this inevitably influences the development of core business."³⁸ In this context, the concept of SCF has been put forward as a way to reduce counterparty risk and to sustainably stabilize the different links in the international supply chain by preventing the disruption of whole production lines resulting from financial problems of one important party as well as optimizing the total cost efficiency within the whole chain. The basic idea is to utilize the "strongest link" in the chain, ie to benefit from the creditworthiness of the lead or, core firm.

SCF may be seen as an upcoming approach to utilize network economies to provide financing solutions for specific goods as they move from the point of

³⁷ "Bank Payment Obligation-Combining the risk mitigation and working capital benefits of a letter of credit with the cost benefits and operational efficiencies of open account trade" (JP Morgan Treasury Service) at 2.

³⁸ Y Wang "Online Supply Chain Finance: Profound changes in Financing of SMEs" (2012) Contemporary Logistics 77-80 <www.seiofbluemountain.com/magazine/Public/uploads/admin/20141105/54597aa29d4d1.pdf>.

origin to destination along international supply chains. In a broader sense, it is a combination of technology solutions and services that link suppliers, buyers, financial institutions and service providers, thus optimizing visibility, financing costs, availability, delivery of cash and improved working capital on the occurrence of one or several supply chain events.³⁹ Hence, the emerging use of SCF in international trade goes hand in hand with the development and implementation of efficient supply chain management (SCM) of such trade. SCF and SCM are two sides of the same coin. SCM focuses on efficient management of physical flows in the entire chain, whereas SCF deals with efficient financing of trade giving rise to these flows, ie the corresponding financial flows.

SCM has been developed over many years in order to improve the coordination of physical flows within and between different parties in the value chain. The better the coordination of these flows, the higher the supply chain efficiency. Such coordination implies close cooperation between the parties in international supply chains. It requires high accuracy and timing of the information provided to the various decision-makers in the chains and, accordingly, substantial investments have been made in advanced ICT systems. This information is vital and forms a basis in third party SCF platform providers' coordination of physical supply chain events (like issuances and notifications of purchase orders and invoices, respectively) and their corresponding financial flows in trade transactions.⁴⁰

"Apart from the buyers and their suppliers, the SCF eco-system is composed of third party SCF platform providers who team up with large financial institutions to meet the capital requirements of the entire supply chain."⁴¹ Capital requirements may then range from various forms of pre-shipment, in-transit and post-shipment financing. There often exist multiple tiers of suppliers, which can be more or less involved in specific SCF programmes. Hence, to accomplish a full scale adoption of SCF is a real challenge as it requires that adequate information in supply chain ICT-systems can be quickly processed and accessed at low cost. This implies that information should be available in electronic form.

39 For a detailed discussion on SCF see, E Hofmann "Research on Supply Chain Finance - A Review, A Framework and Suggestions for the Future" in *Past and Future in Logistics Research* Conference Proceedings of the 25th Annual NOFOMA Conference 2013, Chalmers University of Technology, Gothenburg.

40 D More and P Basu "Challenges of supply chain finance - A detailed study and a hierarchical model based on the experiences of an Indian firm" (2013) 19 (4) *Business Process Management Journal* 624-647.

41 At 625.

3.3 *Developing New Laws to Support SCF*

The electronic information sharing in supply chains is dependent on technological solutions, legal aspects that define the contractual relations and obligations of the parties, and the costs and benefits of integrated system solutions. The focus of this section of the paper is on the legal aspects of the electronic information sharing as existence or non-existence of an adequate legal framework would facilitate or undermine the efficiency of supply chains.

It is essential to take a close look at the legal codification work on e-commerce and transport laws undertaken by UNCITRAL to reduce the reliance on paper documents and enable greater use of ICT in international trade. The starting point would be the MLEC,⁴² which was adopted in 1996 to provide legal recognition to electronic records. This was followed in 2001 by a more specific text called MLES.⁴³ The MLEC received widespread acceptance; several states subsequently used it as a basis for their e-commerce legislation. These two model laws were supplemented in 2005 by the United Nations Convention on the Use of Electronic Communications in International Contracts (ECC),⁴⁴ which is aimed at further harmonising domestic laws and addressing form requirements established in international conventions.⁴⁵ The basic principles on which the two model laws and the ECC are based have become widely accepted criteria for the legal recognition of electronic records.⁴⁶ Documents of title and negotiable instruments were not

42 United Nations Publication, Sales No E.99.V.4, <www.uncitral.org/pdf/english/texts/electcom/05-89450_Ebook.pdf>. Legislation based on this model law has been adopted in 142 jurisdictions; for a detailed list, see <www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/1996Model_status.html>.

43 United Nations Publication, Sales No E.02.V.8, <www.uncitral.org/pdf/english/texts/electcom/ml-elecsig-e.pdf>. Legislation based on or influenced by this Model Law has been adopted in 32 states; for a detailed list see <www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2001Model_status.html>.

44 United Nations Publication, Sales No E.07.V.2, <www.uncitral.org/pdf/english/texts/electcom/06-57452_Ebook.pdf>. This convention entered into force on 1 March 2016 and so far has 7 parties; for a detailed list see <www.uncitral.org/uncitral/en/uncitral_texts/electronic_commerce/2005Convention_status.html>.

45 For a summary of the preparatory work, see ECC, paras. 21-43.

46 UNCITRAL promotes the "functional equivalence approach" which is based on an analysis of the purposes and functions of the traditional paper-based requirements in order to determine how those purposes or functions could be fulfilled through electronic techniques. See ECC, Explanatory Note, para 51. This approach "does not attempt to define a computer-based equivalent to any particular kind of paper document." Instead, it singles out the basic functions of the primary paper-based form requirements, and sets out criteria that, if satisfied, enable electronic records to enjoy the same level of legal recognition as corresponding paper documents. See ECC, Explanatory Note, para 51. By doing so, it also allows States to enforce electronic transactions in accordance with existing laws "without necessitating the wholesale removal of the paper-based requirements themselves or disturbing the legal concepts and approaches underlying

dealt with in detail in any of the model laws and were expressly excluded from the scope of the EEC.⁴⁷ The main aim of the EEC was simply to ensure the equivalence between paper documents and their electronic forms. Issues related to documents of title and negotiable instruments extended far beyond that purpose.⁴⁸

3.3.1 *UNCITRAL WG-IV Initiative on Electronic Transferable Records*

In 2008, the UN General Assembly adopted the Rotterdam Rules⁴⁹, one of the objectives of which is to facilitate e-commerce by establishing a legal framework for the electronic equivalents of bills of lading. In October 2011, Working Group IV of UNCITRAL undertook the task of creating harmonized rules for electronic transferable records,⁵⁰ in order to benefit the promotion of electronic communications in international trade and to address certain specific issues such as assisting in the implementation of the Rotterdam Rules.

The current efforts of Working Group IV in the preparation of a draft model law on electronic transferable records aims to facilitate dematerialization of all paper-

those requirements." See ECC, Explanatory Note, para. 52. UNCITRAL also promotes the principle of "technology neutrality", which holds that the law should not discriminate between different technologies, ie, the law should neither require nor assume the adoption of a particular technology. The goal of technology neutrality is important to ensure that development of any technology is not stifled and to avoid unfairly favouring one technology over another. Strictly adhering to the principle of technology neutrality will maximize the ability to accommodate all possible present and future models. This principle has been reflected in the MLEC, MLES and ECC.

47 Pursuant to article 2(2) of the ECC, the Convention does not apply to bills of exchange, promissory notes, consignment notes, bills of lading, warehouse receipts or any transferable document or instrument that entitles the bearer or beneficiary to claim the delivery of goods or the payment of a sum of money.

48 See ECC, Explanatory Note, paras 80-81.

49 See United Nations Convention on Contracts for the International Carriage of Goods Wholly or Partly by Sea, United Nations Publication, Sales No E.09.V.9, <www.uncitral.org/pdf/english/texts/transport/rotterdam_rules/Rotterdam-Rules-E.pdf>. The creation of the Rotterdam Rules was initiated by the Comité Maritime International (CMI) and was subsequently passed on to the UNCITRAL Working Group III (Transport Law). The principal goal underlying the development of the Rules is the creation of a modern and uniform law concerning the international carriage of goods by sea, in order to reduce transaction costs, increase predictability and stability, and engender greater commercial confidence in international maritime commerce. The Rotterdam Rules have so far received 25 signatures and 3 ratifications. The signatories are a mix of developing and developed countries, including strong seafaring and trading nations, as well as traditional carrier and shipper nations. Sweden is one of the signatories. See "Status of the Rotterdam Rules" <www.uncitral.org/uncitral/en/uncitral_texts/transport_goods/rotterdam_status.html>. Pursuant to article 94, the Convention requires ratification or accession by at least 20 states to enter into force.

50 See definitions, draft article 2, "Draft Model Law on Electronic Transferable Records", Working Group IV (Electronic Commerce) Fifty-third session (New York, 9-13 May 2016), A/CN.9/WG.IV/WP.137, p. 11.

based transferable documents or instruments that allow to claim the payment of a sum or the delivery of goods. One of the difficult issues that this model law will resolve relate to the requirement of physical possession of the paper document. Pursuant to draft article 9,⁵¹ the exercise of control on an authoritative electronic record is the functional equivalent of possession. The notion of control when used as a substitute for possession requires a reliable method for identifying the current party in control of a specific electronic record as the said notion typically focuses on the identity of the person entitled to enforce the rights embodied in the electronic transferable record. The method of identification may be accomplished through a closed system,⁵² or through an open system.⁵³ Under the draft model law, the notion of original and uniqueness has been connected to control. Emphasis has been given to reliably ensure that the claim may be presented to the debtor only once.⁵⁴ The Working Group IV envisages finalising this work by end of 2016.⁵⁵

Once the notion of control is legally established to substitute possession, it would be possible for businesses to meaningfully use federated clouds for transmission of data and legal rights. Greater use of federated cloud computing will allow SMEs to participate in SCF. This is particularly important because BPO in its present form is suited for large companies that have a high volume or value of trade with established counterparties. The small suppliers who feed into the supply chains of such large companies generally do not participate in SCF. One empirical study in India has shown that small suppliers face several challenges which relate to human resource; technology and information technology; finance; inter and intra-firm coordination; collaboration and alliance; organizational policy, strategies and practices; and macro-institutional.⁵⁶ It is submitted that SCF may be introduced

51 At 11.

52 The closed system includes the token model "which identifies the person in the record itself" and the registry model "which identifies the person in a separate registry." See Legal issues relating to the use of electronic transferable records by Working Group IV (Electronic Commerce), Forty-fifth session (Vienna, 10-14 October 2011), A/CN.9/WG.IV/WP.115.

53 The open system is decentralised and uses block chain token, which does not identify the holder in the record, ie in the token itself. A block chain ledger displays the addresses in which tokens are kept, the addresses are cryptographic identities (pseudonyms), and the private keys corresponding to the addresses are secret. See Koji Takahashi "Blockchain Technology and Electronic Transferable Records" (paper presented at Electronisation of Transferable Documents or Instruments Used in International Trade Seminar, Singapore, 10-11 March 2016) <<http://cryptocurrencylaw.blogspot.se/2016/03/blockchain-technology-and-electronic.html>>.

54 See draft article 10, A/CN.9/WG.IV/WP.137, above n 25.

55 One of the authors has been attending the UNCITRAL Working Group IV sessions as an accredited observer representing the Swedish government.

56 See More and Basu, above n 40 at 626.

to the benefit of small suppliers by overcoming the aforesaid challenges through the deployment and management of multiple external and internal cloud computing services that will match the business needs of suppliers. However, the use of such services requires laws to facilitate identity management and trust services.

3.3.2 Upcoming Work on Identity Management and Trust Services

Identity management provides assurance to an actor that no unauthorised use is made of its identity and personal data. Also, the service providers associated with an identity management ecosystem are able to make sure that the actor is the entity it claims to be and have the right that it claims to have to receive the requested services. Currently there are a number of possible technological solutions to provide an identity management service but the main challenge in the implementation of such an ecosystem is a multitude of unresolved legal issues on the subject.

In order to develop the trust necessary to make the ecosystem work, and understand and assess the risk of participation, all stakeholders in the ecosystem need - (1) to know with certainty the legal and technical rules/obligations, (2) to believe that those rules/obligations are effective, fair, and appropriate, (3) an assurance that others will follow those rules, and (4) the ability to enforce those rules/obligations if needed.

In theory it is possible to implement the identity management ecosystem using the existing laws of most jurisdictions but many lawyers will not know what that legal framework is, and most importantly the impact of the laws on the ecosystem may be uncertain. This is because most of the relevant laws were written at a time before the Internet came into being and therefore the rules may not address the precise current needs. The rules are also likely to vary by a number of factors, such as, jurisdiction, nature of the participant, etc.

The existing laws that may provide a legal framework to the identity management ecosystem can broadly be categorised into two. In the first category are generally applicable statutes, regulations, and common law. The second category includes statutes and regulations specific to the subject of identity management consisting of public key infrastructure laws, certain European Union (EU) regulations, identity laws, authentication laws, etc.

The broad legal spectrum relevant for implementation of an identity management ecosystem relates to that of contract; warranty; torts including negligent performance, negligent misrepresentation, fraudulent misrepresentation and defamation; third party beneficiary; e-transactions; consumer protection; data security; privacy/data protection; identity theft; antitrust; unfair competition; false

endorsement; false advertising; intellectual property including copyright, trade secrets, trademark and patent; statutory/regulatory law governing the identity management process and imposing identity management compliance obligations; liability for the conduct of others; governmental immunity law; etc.

There are various factors which may affect the application of these laws to an identity management ecosystem. It ranges from issues relating to applicable law, nature of person involved (consumer, business, government entity), expertise of the person involved (unsophisticated or professional in the business), nature of the information involved, nature of the use involved, nature of any resulting harm (economic losses, property damage, personal injury), etc.

It is therefore necessary to develop an appropriate legal framework that - provides enforceable rules for a workable and trustworthy ecosystem that are binding on all participants; adequately protects the rights of the parties; fairly allocates risk and responsibilities among the parties; provides legal certainty and predictability to the participants; complies with/works in conjunction with existing law; and is acceptable across jurisdictions.

Several national and regional initiatives in the field of identity management and/or trust services are actively underway. National and regional legislation governing identity management and/or trust services that has recently been adopted or proposed, including the EU Regulation on electronic identification and trust services for electronic transactions in the internal market (eIDAS Regulation),⁵⁷ the Belgian law on the eID card and the draft Belgian law on trust services,⁵⁸ the French legislation on electronic signatures,⁵⁹ as well as on electronic registered mail,⁶⁰ the Italian regulations on the *posta elettronica Certificata*,⁶¹ and the Electronic Identity Management Act of Virginia from the United States of America

57 Regulation (EU) No 910/2014 <<http://ec.europa.eu/digital-agenda/en/trust-services-and-eid>>.

58 <www.lachambre.be/FLWB/PDF/53/2745/53K2745006.pdf>.

59 <www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000399095&dateTexte=&categorieLien=id>.

60 <<http://legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000023513151>>.

61 <<http://qualitapa.gov.it/relazioni-con-i-cittadini/open-government/strumenti-della-pa-digitale/la-posta-elettronica-certificata/>>.

(US).⁶² Also, there are several public and private sector national and international initiatives that are currently being taken in various parts of the world.⁶³

The legislative initiatives in the EU and the US discussed above represent very divergent approaches. Yet there is a general recognition that identity management is a global issue, and that interoperability across national boundaries is critical. Accordingly, in the spring of 2015, the American Bar Association Identity Management Legal Task Force, and the countries of Austria, Belgium, France, Italy, and Poland with support from the EU Commission, all submitted proposals to UNCITRAL recommending that it undertake a project to develop "a basic legal framework covering identity management transactions, including appropriate provisions designed to facilitate international cross-border interoperability."⁶⁴ At its July 2015 meeting UNCITRAL agreed to move forward with such a project.

3.4 New Laws Will Enhance Co-ordination Role of Third Parties in the SCF Ecosystem

With the introduction of BPO, the financial industry released a unique set of legal and technological standards to unlock the potential of the SCF market.⁶⁵ "This innovation extends the scope of SCF to risk mitigation and to pre-shipment finance services. It also offers local banks and development banks an opportunity to increase their role in supporting a vital segment of the economy: the SME market."⁶⁶ The SME segment is considered as a lucrative market by banks, but hitherto lending to SMEs constitutes only a small fraction of the average bank's

62 The Act took effect on 1 July 2015 <<https://leg1.state.va.us/cgi-bin/legp504.exe?151+ful+CHAP0483>>.

63 The public sector national and international initiatives includes the United States National Strategy for Trusted Identities in Cyberspace (NSTIC), and its Identity Ecosystem Steering Group, see <www.idecosystem.org/> two OECD studies on Digital Identity Management, the European Union STORK projects, see <<https://www.eid-stork.eu/>>; and the work of several groups including the ITU, the Digital ID and Authentication Council of Canada (DIACC), see <www.diacc.ca/>; and the United Kingdom of Great Britain and Northern Ireland Government Digital Service, see <<http://digital.cabinetoffice.gov.uk/category/id-assurance/>>. The private sector national and international initiatives, including the ABA Business Law Section's Identity Management Legal Task Force, see <<http://apps.americanbar.org/dch/committee.cfm?com=CL320041>>; the Kantara Initiative, see <<http://kantarainitiative.org/>>; the Fast Identity Online (FIDO) Alliance, see <<https://fidoalliance.org/>>; the Secure Identity Alliance, see <www.secureidentityalliance.org/>; the Open Identity Exchange, see <<http://openidentityexchange.org/>>; the Transglobal Secure Collaboration Program (TSCP), see <www.tscp.org/>; and the Open Group: Identity Management Forum, see <www.opengroup.org/>.

64 See UNCITRAL Report of Working Group IV (May 2015), above n 8.

65 See A Casterman "A New Start for Supply Chain Finance" SWIFT White Paper <<https://www.swift.com/node/3396>>.

66 At 2.

total loan portfolio.⁶⁷ As already has been elaborated upon, this is largely explained by high transaction costs for administering and monitoring small loans, information asymmetry and limited collateral to recover credit losses in the event of default.

From the perspective of banks and other financial intermediaries, BPO has potential to pave the way into the SME segment. As SMEs become less opaque, the reluctance of financial intermediaries to extend loans to these firms will be reduced – at least when it comes to post-shipment financing related to receivables. Transaction costs and collateral security issues may still make the entry barrier to intermediated financial arrangements in other stages of the international supply chain too high for particularly SMEs. This is further accentuated by the fact that international trade transactions involving SMEs to a large extent are based on paper documentation. An exception is the case where the core or leading importer, which is generally a multinational corporation (MNC), uses electronic documentation in order to send shipments to its own subsidiaries as well as to those SMEs concerned with whom it engages in repeated transactions. Typically, the platform of a certain membership based third-party service provider, like Bolero⁶⁸ and essDOCS,⁶⁹ is then adopted. However, this type of platform represents a "closed system" as it is only available to registered members who have to sign a long contract. As most small and medium-sized shippers, like SMEs, are non-members to such closed systems, they have to depend on paper documentation until an affordable platform is made available to them. BPO may very well evolve to provide an affordable SCF platform, but it is doubtful that banks and other financial intermediaries will ever get access to all relevant business information in international supply chains.

Representing the weakest link in international supply chains, the survival and growth of SMEs are more or less reliant on that they can take active part in the far-reaching integration and coordination of physical and financial flows in these chains. Increased automation and electronic documentation of supply chain transactions will gradually make them more transparent. However, even though close supply chain collaboration is beneficial for their development, it may not be in their best interest to share internal business information in full with external

67 International Trade Centre "How to access trade finance – A guide for exporting SMEs" (2009) <www.intracen.org/WorkArea/DownloadAsset.aspx?id=28163> at 6.

68 Bolero started already in the mid-1990's with support from the maritime and banking industries to provide electronic bill of lading service. It has now grown into a cloud-based platform which optimizes complex international trade chains by providing a multi-bank solution for trade finance processes. See <<http://www.bolero.net/>>.

69 essDOCS, incorporated in 2005, currently delivers industry-led electronic shipping and trade document/data solutions which improve physical and financial operations, compliance and traceability. See <<http://www.essdocs.com/>>.

trading parties – let alone with the leading MNC. Hence, in a traditional setting it seems likely that BPO will primarily be used in post-shipment financing solutions backed on receivables, like the increasingly adopted reverse factoring arrangement.

The laws that may facilitate paperless trade and the integration and coordination of physical and financial flows of supply chains are admittedly still in a state of infancy given that legislative efforts commenced only recently in certain developed jurisdictions. The current spate of legislative activity indicates that the requisite technology has come of age and businesses are now keen to harness the benefits. A set of harmonised international rules in this field may present a strategic opportunity to federated cloud service providers who can roll out SCF services for SMEs with cooperation from banks and/or other financial intermediaries.

IV CONCLUDING REMARKS

This paper in the two distinctive sections has shown that supply chain actors rely on diverse information sources to make informed decisions when conducting their business. An increased situational awareness of the various actors is possible when a service-oriented approach is adopted. This is possible through acknowledgement of the roles of various actors in the service and information-sharing ecosystem. In other words, governments and private actors have to rely on the same service and information-sharing framework where some services and information exchanges are mandatory and others are used on a voluntary basis. The combined work of WTO and UNCITRAL has the potential to push the international trading community towards collaborative information sharing.

The TFA is heralded as a breakthrough in a situation of stalemate where the WTO failed to conclude any other successful agreements since the Uruguay round. Several economic studies support the reform that will occur at the borders after TFA implementation address some concerns by the critics. However, one has to bear in mind that the benefits will only accrue on implementation. The success of single window provision is dependent on implementation. The questions surrounding implementation raise crucial concerns surrounding costs. Who will incur the costs? The more crucial aspect is about commitment and who should pay for implementing the reform and in what numbers. Then there is the other question - which Member States will really benefit from the reform? The answers to the above questions are not simple but interconnectedness of trade may hold the key in answering them. The TFA model allows for extensive differentiation in terms of timing of implementation and the enforceability of specific disciplines. It is submitted that the aid for implementation will be more forthcoming for the simple reason that international supply chains dominate the current world-trading scenario. It is being increasingly felt that the entire supply chain will suffer if the border

reform is piece meal as a supply chain is as strong as its weakest link. Linkage of implementation to assistance role of other institutions such as World Bank, UNCTAD is also crucial. More importantly, implementation of single window and the necessary legal framework to support its operation will reinforce the relevance for the acceptance of UNCITRAL's model laws and conventions. This is relevant in light of the fact that limited number of States has actually ratified or sought inspiration from UNCITRAL instruments on important e-commerce issues.

When the aspirations of the TFA are achieved allowing stakeholders involved in international trade and transport to lodge standardized information and documents with a single entry point to fulfil all import, export and transit related regulatory requirements, it may generate momentum for creating a service oriented electronic data channel connecting the various stakeholders in the supply chain where transport and logistics service providers play a pivotal role. In such a case, the transportation and logistics industries can also serve as a new node in the supply chain network and join hands with financial institutions to provide support to enterprises in their endeavour to access trade and working capital finance. The situation can be compared to containerization and the implementation of the associated hub and spoke model during the 1970s. At present, many jurisdictions lack legislation to help businesses to fully capture the benefits of e-commerce in international trade. A legal framework is already available at the international level under the Rotterdam Rules that would cover typical e-commerce issues for maritime and certain multimodal transport. Moreover, the current initiative of UNCITRAL to create new e-commerce law for the promotion of electronic transferable records in international trade will further aid and simplify trade transactions. It is submitted that to facilitate international trade, national legislators have to domestically implement the already existing new international rules and also participate proactively in the preparation of rules that are currently under development.