

# Remapping Global Business Through the Reshaping Of Trade

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## ***Abstract***

*The aim for this paper is to identify some of the forces reshaping trade and remapping global business. While the popular press focuses on traditional trade in finished goods, this article highlights changes in globalization due to the faster growing areas of trade in global value chains and trade in services. In addition, digitization and new technologies will continue to impact trade to transform the way we trade and what is traded. This is important to identify in order to prepare government and company strategists to prepare policies and business models for the opportunities and challenges associated with these changes to globalization.*

*In addition, the paper explores in more detail the reduction in transaction costs for trade due to digital and other technologies identifying best practice tools and measurements for streamlining customs and border management. With a focus on the air cargo mode of transportation, the paper concludes with an original case study on SkyBridge Arizona highlighting the US and Mexico working together to reduce transaction costs through simplifying customs procedures and improving transparency.*

Keywords: Globalization, Reshaping of Trade, Global Value Chains, Servicification, Digitization, Transaction Costs, Trade Facilitation, Air Cargo, SkyBridge Arizona

## **Introduction**

The discussion on globalization and trade is often painted as a dichotomy between two ends of a debate spectrum centered on the flow of trade in finished goods between countries. One end of the debate proposes an end to globalization with articles questioning “Will Trump End Globalization?” (Pylas & Keaton, 2017) and “Will Brexit Mark the End of Globalization?” (Lee, 2016)? The other end of the spectrum counters this prediction that globalization will collapse instead pointing to a world that is more globalized than ever before through increased trade flows (Ghemawat & Altman, 2019) and arguing that globalization is not in retreat (Lund and Tyson, 2018).

However, this debate representing two ends of a spectrum presents a false dichotomy masking a fundamental and profound shift in globalization and trade. While one shift noted in the literature is the remapping of global business with a change in the geography of global demand of finished goods towards emerging markets (Gereffi & Sturgeon, 2013; Mancini et al, 2017), there is a greater and more significant shift as well. This shift is the reshaping of trade based on 1) trade in global value chains, 2) trade in services and 3) the impact of digital and next-generation technologies.

Understanding the shift and reshaping of trade is important for government policy makers and businesses to prepare for the transformation in globalization.

One of the impacts of digital technologies is the ability to reduce transaction costs and facilitate more trade between countries especially in the area of border and customs administration. Instead of bottlenecks at the border with customs, digital customs declaration processing can reduce time in customs by 70 percent. Digital tools allow for much greater efficiency and transparency at the border and new measurements are developed to gauge progress in trade facilitation. Particular attention for measuring trade facilitation is given to the transport mode of air cargo due to the strong association with global value chains. SkyBridge Arizona provides an example of the first air cargo hub in the US housing joint customs with both US and Mexican customs agents working together to reduce transaction costs through simplifying customs procedures and improving transparency.

## **Reshaping of Trade**

### *Global Value Chains*

Much of the current focus in the trade discussion is on tariffs and historical trade in finished goods. However, overall trade has shifted from finished goods to where approximately two-thirds of world trade now is involved in intermediary goods as part of a value chain that cross borders during the production process (Dollar, 2017). These intermediary goods that are part of the production process are referred to as global value chains (GVCs) and include all the myriad of activities and inputs used to create a final good or service. GVCs allow countries to specialize in specific tasks as part of the various stages of the production process (such as component production or assembly) in the flow of producing finished goods such as automobiles, smartphones and aircraft.

GVC trade is the fastest growing type of trade over the last two decades and the share of developing and emerging markets as a percentage of the GVCs is increasing leading to the conclusion by Banga (2014) that better connectivity leads to direct development outcomes. From a transportation perspective, the speed, reliability, and security of air cargo plays a particularly important role allowing the cross-border movement of component parts that are key to GVCs and their supply chains. While component parts are relatively small, they carry higher value attributing to air cargo representing less than 1% of world trade by volume, but more than 35% by value (Shephard et al, 2016). With the shift of trade in value chains, new statistics on “value added in trade” were created to capture this shift in trade (Dollar, 2017; Shepherd et al, 2016).

### *Servicification of Trade*

Like the discussion on finished goods versus goods as part of a value chain, the discussion on trade usually only focuses on trade in goods. However, the “servicification” of trade through the flow of services across borders now plays a much bigger role in tying the global economy together. Not only is trade in services growing upwards to 60 percent faster than trade in goods, but services are creating value far beyond what national accounts measure at 23 percent. Traditional trade statistics do not capture the full scope of services in global trade by not measuring the intracompany

transfers of intangibles or free digital services offered globally (McKinsey, 2019). With these activities included, some estimates put trade in services as equal or more than trade in goods.

In addition, trade in goods and services are blurring as they are increasing bundled together with the “everything as a service” business model as companies try to strategically capture more global value through services (Miroudot & Cadestin, 2017). Across different global value chains including manufacturing, more of the percentage of value in trade is coming from services as this shift offers advantages such as: “smoothing cyclicalities in sales, providing higher-margin revenue streams, and enabling new sales or design ideas due to closer interaction with customers” (McKinsey, 2019). As more business models shift to offering services, companies will continue to look at performance-based service contracts across their supply chain.

### *Digital Globalization and New Technologies*

The trend for growth of trade in services is expected to continue as digital and virtual technologies help increase the global reach and range for these services into the future. For example, the 5G network will increase speeds by 20-25 times the current connection speed allowing for greater services to be delivered across borders especially in the healthcare industry. These digital technologies have contributed to the term “digital globalization” and the flow of information measured at an increase of upwards to 300 percent in 2017 (Ghemawat & Altman, 2019; McKinsey, 2016).

Due to the exponential rise in digital information and bandwidth, new digital technologies such as artificial intelligence, the internet of things (IoT), robotics and additive manufacturing (3D printing) are now possible and have started to impact global value chains. They have the potential to transform the way we trade and what is traded as well as the location and organization within global value chains (World Trade Report, 2018; Strange and Zucchella, 2017). As these technologies become more prevalent in GVCs, their net impact is unclear as they will create new opportunities and shift production networks significantly around the globe.

One estimate is these technologies will further dampen trade in goods while boosting trade in services over the next decade (World Trade Report, 2018), while another author forecasts that 3D printing alone could cut overall world trade by between 25-40 percent over the next 20 years (Leering, 2017). McKinsey (2019) categorizes the impact digitization and new technologies have on the reshaping of trade by placing their impact into three categories: 1) reducing transaction cost, 2) altering production processes with production closer to the consumer and 3) creating and transforming products and services. The impact with the most research in the literature is on the impact to trade with digitization and technology to reduce transaction costs.

### **Reducing Transaction Costs and Trade Facilitation**

The lowering of trade transaction costs is often referred to as trade facilitation and refers to any measure that contributes to lowering trade transaction costs and creating standard efficiencies (Global Enabling Trade Report, 2016). Studies show the positive impact on reshaping trade with a reduction in transactions costs. For every 1 percent reduction in trade costs, Djankov et al (2010) points to a 0.4 percent increase in trade flows, while Hummels (2001) revealed a reduction in

Table A: Border bottlenecks according to region				
Region	Exports		Imports	
	Time spent in compliance (hours)	Cost of compliance (US\$)	Time spent in compliance (hours)	Cost of compliance (US\$)
East Asia and the Pacific	124.1	499.6	136.1	542.4
Europe and Central Asia	55.9	305.2	53.2	279.8
Latin America and Caribbean	115.8	636.9	144.3	803.5
Middle East and North Africa (OECD) high-income countries	136.9	708	206.8	806.9
	15.1	185.3	12.2	137.2
South Asia	136.4	549.3	218.5	979.6
Sub-Saharan Africa	187.9	807.2	239.4	986.9

Table A: Border and Customs Bottlenecks

international shipping times by one day was associated with an increase in trade by 0.8 percent. Research by the Organization for Economic Cooperation and Development (OECD) also indicates that a 1 percent reduction in trade transaction costs, measured as a proportion of the value of world trade, could lead to an increase in world income of around US\$40 billion. (Smith et al, 2009).

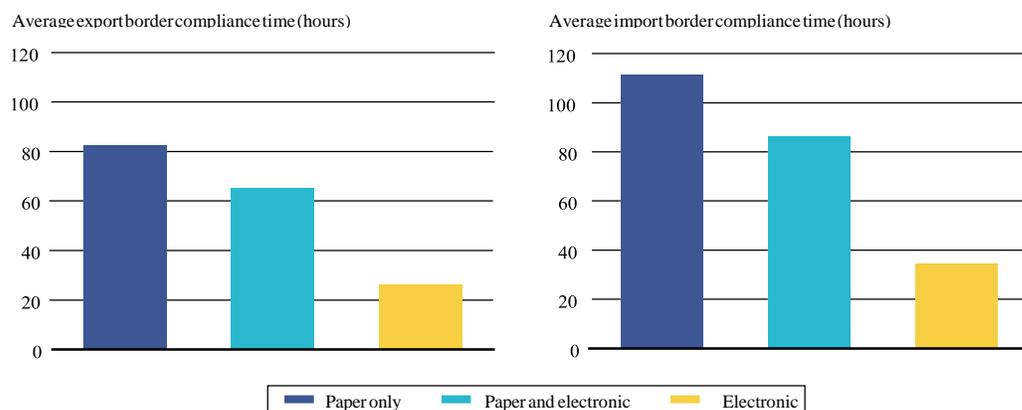
Yet, according to WTO estimates, transaction costs from trade still add up to more than \$2 trillion annually with two-thirds of that amount a result of border and customs procedures (Lee, 2014; UNCTAD, 2013). A study by the World Economic Forum found that if countries improved performance in terms of border administration and services to half of the global best practice, the result would yield an increase of approximately US\$ 1.6 trillion (14.5%) in global exports and of approximately US\$ 2.6 trillion (4.7%) in global GDP (Global Enabling Trade Report, 2016). In fact, several empirical studies show that the gains in global trade from smoother border procedures could be significantly higher than the gains from tariff reduction (Anderson et al, 2004; Lee, 2014).

The OECD finds trade facilitation activities with the largest impact on trade include a focus on border procedures with expediting border documentation, process simplification (including automation) and enhanced customs transparency (World Trade Report, 2018). The decline in trade costs can be especially beneficial for small and medium size firms (SMEs) from developing countries to increase their global trade, yet “cumbersome customs procedures” impact and weight most heavily on [SMEs] from developing countries (World Trade Report, 2018).

For example, Volpe Martinicus et al. (2015) found that a 10 percent increase in customs delays in Uruguay resulted in a 3.8 percent decline in exports, while Djankov et al. (2010) showed an additional day’s delay was equivalent to moving it away from its trading partners by about 70 kilometres (43 miles). Table A shows the time and costs spent in customs compliance for both exports and imports across regions with the highest bottlenecks and subsequent time and cost at the border in the poorest regions of the world (World Trade Report, 2018).

While AI applications could help to reduce errors rates in customs processing and overcome language barriers and blockchain promises further reductions in barriers (McKinsey, 2019; World Trade Report, 2018), basic digital systems can dramatically reduce the time spent on customs compliance. Time spent in border compliance falls by more than 70 percent for both imports and exports when customs declarations can be submitted and processed digitally as shown in Figure 1.

**Figure 1: Gains from the digitalization of customs documentation**



Source: World Bank (2017).

Figure 1: Digitization Gains in Customs

This suggests that even the use of simple digital technologies can go a long way to reducing transaction costs in trade and facilitating trade. Two of the main digital tools are the Electronic Data Interchange (EDI) system and the Electronic Single Window (ESW). The EDI simply allows trade-related documents to be transferred electronically, while the ESW lets trade stakeholders submit documentation through a single point of entry (or window) to complete customs procedures. While many countries now use EDI systems, the use of ESW lags behind across regions based often on economic development of the region (World Trade Report, 2018).

### Measuring Trade Facilitation

The World Trade Organization has proposed for countries to adopt a Trade Facilitation Agreement (TFA) defining the scope of trade facilitation as expediting the movement, release and clearance of goods, including goods in transit. The TFA aims to streamline and modernize import and export processes further by removing inefficiencies and encouraging the adoption of ESW or the single window system. Studies have estimated the TFA could reduce world trade costs by half globally and provide more than a \$1 trillion boost to the world economy (Global Enabling Trade Report, 2016). An important part of TFA is a focus on how to measure the facilitation of trade and the reduction in trade transaction costs.

One proposed method to measure the TFA is through the Enabling Trade Index (ETI). The ETI assesses the level and type of institutions, policies, infrastructures and services within countries

facilitating the cross-border free flow of goods and Figure 2 below highlight the ETI framework (Global Enabling Trade Report, 2016):

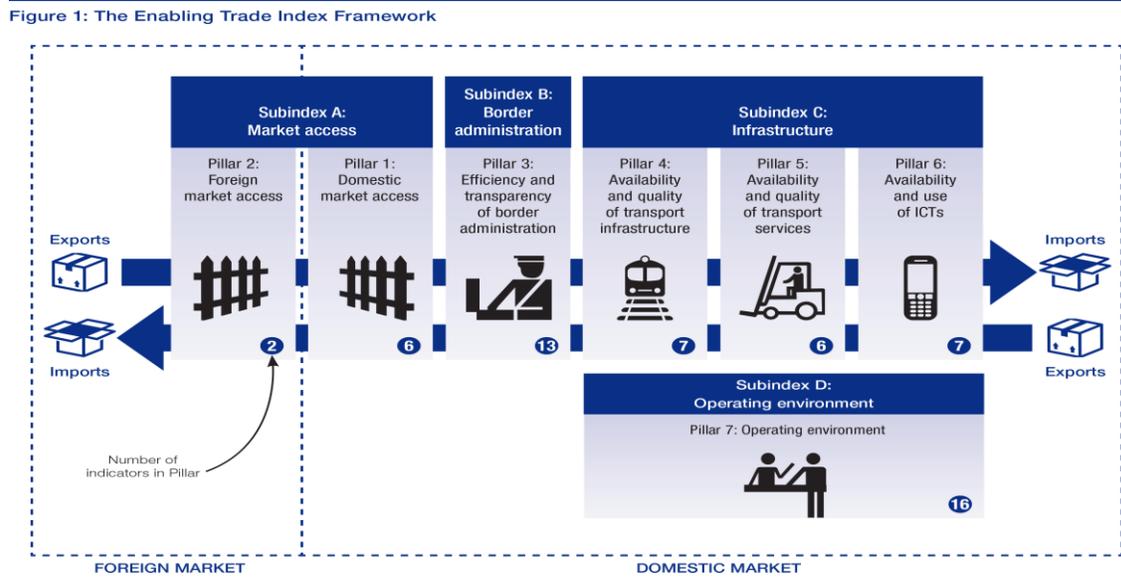


Figure 2: ETI Framework

The part of the ETI framework focused on customs and border procedures is pillar 3 with the efficiency and transparency of border administration. This pillar measures the efficiency in the use of time, number of documents and the transparency of the process. Focusing on the border administration is recommended as a first step in facilitating trade between countries as the impact is potentially very large in respect to time and cost while it is relatively quicker and at a lower cost than other changes.

### *Measuring Air Cargo Facilitation*

While the ETI is a useful tool to analyze general trade facilitation, customs and border processes can vary depending on the mode of transport and more specific measurements based on mode of transport are needed. Countries that do better on general indicators of trade facilitation have been shown to engage in more trade in intermediate inputs (Saslavsky and Shepherd, 2014) which is a core part of GVC participation. The speed, reliability and security of the air cargo mode of transport is key for GVC participation with a focus on high value and time sensitive goods flows such as global value chain (GVC)-related trade or perishable products.

Air cargo was the mode of transport used in designing the ETI and two other more specific air cargo indices were recently developed to measure air cargo performance: Air Trade Facilitation Index (ATFI) and eFreight Friendliness Index (EFFI). Both ATFI and EFFI were developed to assess the effectiveness of smart border regulation and customs services specifically for the air cargo industry. Both the ATFI and EFFI showed a one percentage point increase resulted in almost a 2.5 percent increase in trade and analysis shows that both indices are strongly associated

with increased GVC integration (Shepherd et al, 2016).

The EFFI specifically focuses on the digital processing of cargo and the reduction in transportation costs due to e-freight. In addition to reducing transaction costs, customs authorities will benefit from e-freight because more targeted screening is now possible as well as more focused risk management due to the submission of customs information digitally in advance of goods arriving. Cost savings from e-freight alone could represent an almost 2 percent reduction in the overall cost of moving goods from shipper to consignee via the air cargo supply chain (Smith et al, 2009).

### *Air Cargo Hub: SkyBridge Arizona*

In addition to savings from e-freight, countries are looking at more initiatives to facilitate trade by reducing transaction costs at the border with customs. Figure 3 indicates the traditional air cargo supply chain network (Smith et al, 2009):

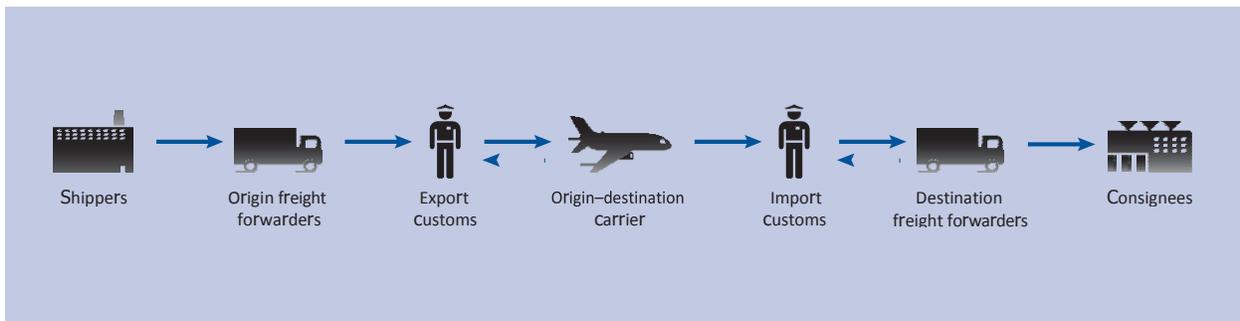


Figure 3: Air Cargo Supply Chain

In an effort for more efficiency and reduction of transaction costs, SkyBridge Arizona combines the export and import customs together providing the first air cargo hub in the United States housing both US and Mexican customs officials. Based at the Phoenix-Mesa Gateway Airport, it is marketed as a “first-of-its-kind” inland port with the ability to ship throughout Mexico (the largest trading partner of the US). In the past, air cargo from the US to Mexico could have bottlenecks for delivery waiting up to 14 days to clear customs. SkyBridge Arizona allows the process to happen almost same day revolutionizing the transport of products between the two countries.

Key in the process is the Unified Cargo Processing (UCP) designed by the US Customs Border Patrol and Mexican customs control. The UCP process has already had several successful test flights as the first inland air program. It facilitates the import and export processing in one location through digital document processing and joint inspection saving on transaction costs by reducing time and creating a more transparent process. Once cleared through the UCP, the air cargo is then allowed to fly to 130 airports throughout Mexico increasing the reach of the air cargo. Previous to SkyBridge, all air cargo into Mexico had to go to one of only 8 airports within Mexico with designated customs officials.

It is expected that the growth of air cargo between Arizona and Mexico will continue to grow

rapidly with these efforts for trade facilitation. We can look at the current ATFI and EFFI percentages for both the US and Mexico (Table B and C). We can expect these percentages to increase over the next couple of years (and actually measure the change) with initiatives like SkyBridge Arizona and increased border and customs efficiency.

Table B: ATFI

Austria	98.21%	1
Slovenia	97.09%	2
Korea, Republic of	97.07%	3
Italy	96.70%	4
<b>United States</b>	<b>91.24%</b>	<b>15</b>
<b>Mexico</b>	<b>59.96%</b>	<b>74</b>

Table C: EFFI

United Arab Emirates	47.37%	1
Denmark	41.60%	2
Hong Kong	41.59%	3
Singapore	40.18%	4
<b>United States</b>	<b>37.70%</b>	<b>10</b>
<b>Mexico</b>	<b>4.56%</b>	<b>69</b>

## Conclusion

The aim for this paper was to identify some of the forces reshaping trade and remapping global business. While the popular press focuses on traditional trade in finished goods, this article highlights the faster growing areas of trade in global value chains and trade in services. New measures have been developed to try and capture these changes in trade. In addition, digitization and new technologies will continue to impact trade to transform the way we trade and what is traded. It will also impact the location and organization of trade within global value chains and government and company strategists need to prepare policies and business models for the opportunities and challenges associated with these changes to globalization.

The paper explored in more detail the reduction in trade costs due to digital and other technologies identifying best practice tools and measurements for the future. It is clear from the literature that every country can benefit from streamlining customs operations through digital customs administration. Digital technologies give rise to opportunities and challenges requiring governments to consider physical and digital infrastructure and the use of resources to facilitate and increase trade for the future. And finally, the paper included an original case study of SkyBridge Arizona showing two countries working together to reduce transaction costs through simplifying customs procedures and improving transparency.

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