From Covid-19 Pandemic to A Global Platform Relies on Blockchain to Manage International Trade, Why Not?

Hala Nasr abouzid 1 ; Heba Nasr abouzid 2

1 Assistant Lecturer at Faculty of Business – Delta University- Egypt , Phd researcher – commercial sciences Menofia university- Egypt , Halanasr0207@gmail.com
2 Phd Researcher – Commercial Sciences Menofia University- Egypt , Master's degree – commercial sciences Kafrelsheikh university- Egypt , Hebanasr114@gmail.com.

Keywords: (Blockchain , Trade Facilitation , Supply Chain)

A contribution to the Policy Hackathon on Model Provisions for Trade in Times of Crisis and Pandemic in Regional and other Trade Agreements

Disclaimer: The author declares that this paper is his/her own autonomous work and that all the sources used have been correctly cited and listed as references. This paper represents the sole opinions of the author and it is under his/her responsibility to ensure its authenticity. Any errors or inaccuracies are the fault of the author. This paper does not purport to represent the views or the official policy of any member of the Policy Hackathon organizing and participating institutions.
SUMMARY:
This study aimed to propose the creation of a unified global platform that depends on a blockchain managed through the World Trade Organization to facilitate international trade, after the crisis of Covid 19 which resulted in numerous collapses in the markets and negative effects on the level of international trade, so it was necessary to find a solution that supports such a crisis in the future.

The study examined the effects of Covid 19 on international trade as international trade declined sharply in the first half of 2020 because, with the complete closure announced by many countries on airports, ports, and other means of transportation and other institutions in many countries around the world, it has caused The movement of trade, exports and imports has stopped. The effects of Covid's impact on international trade have surpassed the global financial crisis of 2008-2009.

The statistics indicated that Trade falls steeply in first half of 2020 in addition to clarifying Risks and threats of international trade Basic and medical goods in times of COVID-19 and How the COVID-19 pandemic disrupts global value chains.

The study also examined the extent of the world’s transformation to digitization during the Covid 19 pandemic and the extent to which blockchain is used to confront crises in the future, as Blockchain has many uses to facilitate international trade depending on blockchain, Supply Chains will be More Sustainable and Inclusive, Faster and Leaner Logistics in Global Trade, Improving Transparency and Traceability in Supply Chains, Automating Commercial Processes in Logistics with Smart Contracts.

Hence, the study resulted in the importance of relying on blockchain technology to manage and facilitate international trade through the establishment of a global platform managed by WTO that depends on blockchain technology.

Single platform will deliver a notable return on investment in a wide range of countries, facilitating trade considerably and lowering companies’ international trade costs. Their benefits may compound by the digitization of trade documents: such “paperless trade” he platform through smart contracts will help the organizations to reduce or end this delayed and costly payment gaps by integrating delivery and payment in digital contracts that flow across enterprises and integrate with logistics partners and banks. A global unified platform for blockchain and international trade - will be a huge opportunity for policymakers to build new economic bridges, to create a better global trade system.

Hence the importance of digitization and its inclusion in all areas of international trade is evident, as this importance has emerged clearly during the current crisis -19 covid, so there must be a solution that supports paperless transactions between countries, in addition to the facilities in ending customs and financial procedures without the need for a third party broker such as governments To complete such procedures, in addition to the ability to track the goods until they arrive and deliver to the importer, and easily refer to all details of the product
or shipment by the importer or exporter in full transparency, as these data are not subject to fraud, manipulation or modification with the blockchain, hence the Establishing a global platform that will serve as a huge database through which the World Trade Organization controls and measures the size of international trade and takes all measures in any upcoming crises based on the huge volume of information without the need to refer to any other source.
TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>SUMMARY</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1- The Covid-19 pandemic and its Trade-Related Implications</td>
<td>2</td>
</tr>
<tr>
<td>1-1 Trade falls steeply in first half of 2020: statistics</td>
<td>2</td>
</tr>
<tr>
<td>1-2 COVID-19 and Trade Policy: Do’s and Don’ts of Trade Policy in the Response to COVID-19</td>
<td>4</td>
</tr>
<tr>
<td>1-3 Risks and threats: international Basic and medical goods trade</td>
<td>4</td>
</tr>
<tr>
<td>1-4 in times of COVID-19</td>
<td>4</td>
</tr>
<tr>
<td>1-5 The COVID-19 economy: does it mean the end of globalization?</td>
<td>5</td>
</tr>
<tr>
<td>1-6 How the COVID-19 pandemic disrupts global value chains</td>
<td>6</td>
</tr>
<tr>
<td>2- Why COVID-19 makes a compelling case for the wider integration of blockchain</td>
<td>6</td>
</tr>
<tr>
<td>2-1 blockchain: a technology with many faces</td>
<td>6</td>
</tr>
<tr>
<td>2-2 What is blockchain or distributed ledger technology?</td>
<td>7</td>
</tr>
<tr>
<td>2-3 Blockchain is a shared digital ledger</td>
<td>7</td>
</tr>
<tr>
<td>2-4 How a blockchain works: the basics</td>
<td>8</td>
</tr>
<tr>
<td>i. The blockchain is a distributed database</td>
<td>8</td>
</tr>
<tr>
<td>ii. The middleman’s work is over</td>
<td>8</td>
</tr>
<tr>
<td>2-5 Beyond Fintech: Leveraging Blockchain for More Sustainable and Inclusive Supply Chains</td>
<td>9</td>
</tr>
<tr>
<td>2-6 Potential uses and benefits of Blockchain technology</td>
<td>10</td>
</tr>
<tr>
<td>2-7 Trust, Not Money, Makes The World Go Round</td>
<td>11</td>
</tr>
<tr>
<td>2-8 Trade finance</td>
<td>11</td>
</tr>
<tr>
<td>i. What kind of impact could this have on everyday life?</td>
<td>11</td>
</tr>
<tr>
<td>ii. The use of blockchain for trade finance</td>
<td>11</td>
</tr>
<tr>
<td>iii. Commonwealth Bank</td>
<td>12</td>
</tr>
<tr>
<td>2-9 Blockchain In Logistics</td>
<td>12</td>
</tr>
<tr>
<td>i. Faster and Leaner Logistics in Global Trade</td>
<td>12</td>
</tr>
<tr>
<td>ii. Improving Transparency and Traceability in Supply Chains</td>
<td>12</td>
</tr>
<tr>
<td>iii. Automating Commercial Processes in Logistics with Smart Contracts</td>
<td>13</td>
</tr>
<tr>
<td>2-10 A Practical Guide to Using Blockchain within the United Nations</td>
<td>13</td>
</tr>
<tr>
<td>i. Blockchain – What Does It Mean For The UN</td>
<td>14</td>
</tr>
<tr>
<td>- Possible Uses Of Blockchain Technology In</td>
<td>14</td>
</tr>
<tr>
<td>- The Un Secretariat</td>
<td>14</td>
</tr>
<tr>
<td>- Showcase of UN projects using blockchain</td>
<td>14</td>
</tr>
<tr>
<td>3- A Global Platform Relies on Blockchain to Manage International Trade</td>
<td>15</td>
</tr>
<tr>
<td>3-1 Blockchain during COVID-19 and boost economic recovery</td>
<td>15</td>
</tr>
<tr>
<td>3-2 Blockchain has the potential to change global trade forever</td>
<td>16</td>
</tr>
<tr>
<td>i. new economic bridges between countries, and to create a better global trade system</td>
<td>16</td>
</tr>
<tr>
<td>ii. Blockchain could boost global trade by $1 trillion</td>
<td>17</td>
</tr>
<tr>
<td>3-3 The role of the blockchain in overcoming challenges in trade</td>
<td>17</td>
</tr>
<tr>
<td>i. Costs</td>
<td>17</td>
</tr>
<tr>
<td>ii. Technology</td>
<td>17</td>
</tr>
<tr>
<td>iii. Ecosystem</td>
<td>17</td>
</tr>
<tr>
<td>3-4 Blockchain for trade: Potential quick wins for Governments</td>
<td>18</td>
</tr>
<tr>
<td>3-5 How can platform contribute to trade facilitation?</td>
<td>18</td>
</tr>
<tr>
<td>i. The WTO Trade Facilitation Agreement</td>
<td>18</td>
</tr>
</tbody>
</table>
ii. State of single windows.............................................19
iii. Potential use-cases with blockchain..............................20
   - Maritime Trade
   - Road Transport
   - Agricultural, Fisheries And Food Trade
   - Energy Trade

3-6 The platform implementation is key to improving supply chains in a post-COVID-19 world ...................................................... 22
i. Supply chain before and after the platform..........................22

3-7 Platform: Breaking the logjam.........................................24

3-8 Different paths for different stakeholders ..........................24

3-9 The benefits of the transition to a global single platform........26
   i. Towards paperless trade ...........................................26
   ii. Strengthening intellectual property rights .......................29
   iii. Digital single windows ..........................................30

3-10 Case studies: using blockchain in international trade...........30

3-11 The platform and its Contribution to SDGs .........................33
CONCLUSION .....................................................................36
RECOMMENDATIONS ......................................................36
References .......................................................................37
From Covid-19 Pandemic to A Global Platform Relies on Blockchain to Manage
International Trade, Why Not?

Introduction

Covid-19 was and still is the talk of the world, who among us was not affected by this epidemic, whether materially or morally, if time came back a little to think about what the world was like before this epidemic, there was a world moving with tremendous speed, a life full of work and activity, airports, ports, containers and merchandise goods Commercial and crowded markets, everyone is in motion, between day and night, airports and closed ports, markets empty of people, institutions that lay off their employees, all this is what resulted in the epidemic called covid-19, the collapses of companies and institutions, and economies that were on the way to prosperity. This pandemic exceeded the global crisis 2008-2009 World trade fell sharply in the first half of the year, as the COVID-19 pandemic upended the global economy.

The volume of merchandise trade shrank by 3% year-on-year in the first quarter according to WTO statistics. Initial estimates for the second quarter, when the virus and associated lockdown measures affected a large share of the global population, indicate a year-on-year drop of around 18.5% (1).

As The world is continually changing, driven by technological innovations that affect the way we live and do business. The history of the world economy is intimately linked to technological progress. The invention of the steam engine mechanized production, the discovery of electricity enabled mass production, and the rise of the internet made it possible to coordinate various production stages at a distance, leading to a fragmentation of production that gave rise to global value chains (2).

Under the slogan "Stay at home", it was necessary to find a solution that supports this crisis economically and any similar crises in the future to facilitate international trade and save lives. The solution is to rely on technology through a global platform based on the blockchain to manage international trade.

The number of headlines claiming that Blockchain can revolutionize various areas of international trade, from trade finance to customs procedures and intellectual property, are legion. The transparent, decentralized and immutable nature of Blockchain has sparked the interest of private actors – and governments – to explore the potential of this technology to enhance the efficiency of trade processes, and a myriad of proofs of concepts and pilot projects using Blockchain have been developed in virtually all areas of international trade (3).

(3) Ibid (2)
Depending on the platform, keeping supply chain information together in a blockchain assists with tracking and compliance with regulatory reporting requirements. Authorities can review a blockchain record that contains information about ownership, provenance, authenticity, and price of goods. With the data in the blockchain, regulators can evaluate risk, target, and track the flows of goods and/or funds. Electronic transmission allows officials to conduct risk assessments in advance and speed border clearance. Compared to traditional database technologies that rely on a central hub, using blockchain could increase speed and security of gathering and tracking relevant information while decreasing costs and reducing fraud through heightened transparency (4).

But what is platform, and what is the potential of this technology called blockchain for international trade? That is what we will answer in this paper.

1- The Covid-19 pandemic and its Trade-Related Implications

The coronavirus disease (COVID-19) pandemic is substantially impacting people’s lives and livelihoods and putting extreme stress on socioeconomic systems. International collaboration, coordination and solidarity among all is going to be key to overcoming this unprecedented global challenge. As part of efforts aimed at reducing the international spread of the virus and to mitigate the potentially crippling longer-term consequences of the pandemic, especially for the most vulnerable countries, policymakers need to take a number of measures to ensure the facilitation of international trade and the transport of goods. It is crucial to keep ships moving, ports open and cross-border and transit trade flowing, while ensuring that border agencies can safely undertake all necessary controls (5).

1.1 Trade falls steeply in first half of 2020: statistics

World trade fell sharply in the first half of the year, as the COVID-19 pandemic upended the global economy. However, rapid government responses helped temper the contraction, and WTO economists now believe that while trade volumes will register a steep decline in 2020, they are unlikely to reach the worst-case scenario projected in April. The volume of merchandise trade shrank by 3% year-on-year in the first quarter according to WTO statistics. Initial estimates for the second quarter, when the virus and associated lockdown measures affected a large share of the global population, indicate a year-on-year drop of around 18.5% chart below (6).

The wide range of possibilities for the predicted decline is explained by the unprecedented nature of this health crisis and the uncertainty around its precise economic impact. But WTO economists believe the decline will likely exceed the trade slump brought on by the global financial crisis of 2008-09 (7).


The outlook for the global economy over the next two years remains highly uncertain. This is reflected in the range of GDP estimates from other international organizations, in some cases relying on multiple scenarios (Table below). The World Bank, OECD and IMF have all released forecasts showing significant slowdowns in global trade and GDP; all are broadly consistent with the WTO's forecast for the current year. The World Bank's recent forecast would see global output decline by 5.2% in 2020, falling between the WTO's optimistic and pessimistic range. Other international organizations' GDP forecasts for 2020 are also increasingly negative, even as their trade projections stay roughly in line with the WTO's optimistic scenario. These estimates imply a less negative trade response to declining GDP growth than was observed during the global financial crisis of 2008-09 (8).

<table>
<thead>
<tr>
<th></th>
<th>Real GDP (% change)</th>
<th>Trade volume (% change)</th>
<th>Elasticity (ratio)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2020</td>
<td>2021</td>
<td>2020</td>
</tr>
<tr>
<td>WTO Trade forecast (April 2020)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- optimistic scenario</td>
<td>-2.5</td>
<td>7.4</td>
<td>-12.9</td>
</tr>
<tr>
<td>- pessimistic scenario</td>
<td>8.8</td>
<td>5.9</td>
<td>-31.9</td>
</tr>
<tr>
<td>IMF World Economic Outlook (April 2020)</td>
<td>-3.0</td>
<td>5.8</td>
<td>-11.0</td>
</tr>
<tr>
<td>World Bank Global Economic Prospects (May 2020)</td>
<td>-5.2</td>
<td>4.2</td>
<td>-13.4</td>
</tr>
<tr>
<td>OECD Economic Outlook (June 2020)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- single hit scenario</td>
<td>-6.0</td>
<td>5.2</td>
<td>-9.5</td>
</tr>
<tr>
<td>- double hit scenario</td>
<td>-7.6</td>
<td>2.8</td>
<td>-11.4</td>
</tr>
<tr>
<td>Memo items:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IMF GDP at market exchange rates</td>
<td>-4.2</td>
<td>5.4</td>
<td>-11.0</td>
</tr>
<tr>
<td>World Bank GDP at purchasing power parity</td>
<td>-4.1</td>
<td>4.3</td>
<td>-13.4</td>
</tr>
</tbody>
</table>


1-2 COVID-19 and Trade Policy: Do’s and Don’ts of Trade Policy in the Response to COVID-19

Despite the initial inclination of policy makers to close borders, maintaining trade flows during the COVID-19 pandemic will be crucial (9). Trade in both goods and services will play a key role in overcoming the pandemic and limiting its impact through, Facilitating access to essential medical goods and supplies, Supporting consumption of essential items and limiting impacts on the poor, Supporting exporters to maintain jobs and foreign exchange earnings, Shielding the economy from COVID downturn and Streamlining regulatory and border procedures to facilitate access to COVID-19 related medical goods and essential food products (10).

- Positive Responses That Will Limit The Health And Economic Impacts And Shorten The Crisis(11):
  Do streamline regulatory and border procedures to facilitate access to COVID-19 related medical goods and essential food products by Improving business continuity through greater use of technology like blockchain and ICT, flexible working schedules, longer border opening hours, expanded access to telephone and online enquiry points; all of which can increase efficiency and limit the physical presence and interaction of logistics workers and officials at facilities and border crossing points
  Do facilitate access to essential COVID-19 related medical goods and supplies
  Do support exporters to maintain jobs and foreign exchange earnings
  Do contribute to macroeconomic policy efforts to shield the economy from COVID related downturn

- negative responses that will exacerbate the severity and duration of the global crisis(12):

  Do not constrain investment in and access to essential COVID-19 related medical goods and supplies by imposing export taxes or bans on COVID-19 related medical goods, the materials used to produce them or agricultural products.
  Do not undermine consumption of essential good or constrain job maintaining exports by arbitrarily closing borders to commerce.
  Do not impose additional trade restrictions to protect domestic industries that may be adversely affected by falling demand.

1-3 Risks and threats: international Basic and medical goods trade in times of COVID-19

keeping trade flowing requires co-operation and trust – for example, that the market will supply essentials, that countries will not impose export restrictions, and that imports do not pose health risks. This is a particular challenge at a time of trade tensions, where the international trading system was already subject to an increased number of new restrictions


(11) Ibid (9)
(12) Ibid (10)
and distortions, from tariff increases among major traders, to significant government support in key sectors. Efforts at dialogue to manage and prevent tensions through ongoing negotiations are now complicated by mobility restrictions. But in the context of the severe economic strain from COVID-19, it is more important than ever to avoid escalation of the current trade tensions (13).

Despite considerable uncertainty, there are four actions that can be taken now(14):

**First**, boost confidence in trade and global markets by improving transparency

A strong, shared, transparent information base is critical in underpinning sound national policy responses and the international co-operation to keep trade flowing

**Second**, keep global supply chains going, especially for essentials

**Third**, avoid making things worse

**Fourth**, look beyond the immediate: Policy actions now could have a long life.

1-4  The COVID-19 Economy: Does It Mean The End Of Globalization?

After decades of growth for world trade, global tourism and international cooperation, globalization hit a couple of roadblocks in recent years, as the reemergence of nationalism and protectionism have undone some of the progress made in the past. After global trade growth slowed significantly in 2019, due in large part to trade tensions between the United States and China, the COVID-19 pandemic is expected to cause an unprecedented fall in world trade. This chart below, based on World Bank data, shows how global trade has been stagnant for a number of years (15).

---


(14) Ibid (13)


---
1-5 How the COVID-19 pandemic disrupts global value chains

COVID-19 has struck at the core of global value chain hub regions, including China, Europe and the US. Industrial production in China has fallen by 13.5% in January and February combined, compared with the previous year, such this pandemic has severe implications for international production networks and may leave its legacy for years to come.

A substantive nationalization or regionalization of supply chains, however, has the risk to further reduce diversification of suppliers in the world economy and reduces opportunities for developing and emerging economies, to benefit from GVC-associated capital flows and access to international markets, human capital and knowledge. Such a development will almost certainly deal a significant blow to developing countries’ industrialization efforts and impede the socio-economic progress that has been recorded in many developing regions over the past years.

The disruption of GVCs due to COVID-19 may therefore leave as a longer-term legacy: a significant reduction in developing countries’ potential to industrialize through linking into GVCs for many years to come. The COVID-19 pandemic calls for increasing our effort towards strengthening multilateral approaches to policy making and assisting countries in opening up other ways to enable inclusive and sustainable industrial development (16).

2- Why COVID-19 makes a compelling case for the wider integration of blockchain

2-1 blockchain: a technology with many faces

Blockchain is a particular type or subset of so-called distributed ledger technology (“DLT”). DLT is a way of recording and sharing data across multiple data stores (also known as ledgers), which each have the exact same data records and are collectively maintained and controlled by a distributed network of computer servers, which are called nodes (17).

Blockchain is a database ledger that functions like a distributed network. It is often referred to as a distributed ledger that can register blocks of cryptographically-secure, tamper-proof data with members of a network. This unique structure offers near-frictionless cooperation between these entities, allowing them to transfer value or information without need of a central authority or intermediary. It has the potential to deliver productivity gains to multiple industries, from the financial services sector to energy markets, supply chains, intellectual property management, the public sector, and beyond (18).

a type of database that is spread across multiple sites, countries, or institutions. It is decentralized in nature, eliminating the need for an intermediary to process, validate, or authenticate transactions. Each party (e.g., individual, organization, or group) is represented by their computer, called a node, on the network. Each node keeps its own copy of all transactions on the network, and nodes work directly with one another to check a new


transaction’s validity through a process called consensus. Each of these transactions is encrypted and sent to every node on the network to be verified and grouped into time-stamped blocks of transactions (19).

Blockchain can help trade facilitation because of the following characteristics: it is immutable (nearly impossible to change once transactions are written), automated (actions can be automatically executed) and historized (have full transaction history, which can be used to track and trace). Furthermore, blockchain implementation is useful to make possible contributions to the achievement of the United Nation agenda for 2030, the Sustainable Development Goals (or SDGs). Some blockchain applications which are already being used to support the SDGs include the establishment of identities (for example for refugees); the tracking of information linked to identities (related to health, social benefits); the distribution of resources (financial and material support) and the tracing of goods and their content and original source (20).

2-2 What is blockchain or distributed ledger technology?
The term ‘blockchain’ refers to the way that data are stored. Transactions are recorded in time-stamped “blocks” and each block is connected to previous blocks, forming a chain of transactions. This chain is stored by all users on a network; every time a new block is verified and added, the entire chain is updated simultaneously across users. Currently, when buying, selling, or verifying the ownership of an asset, individuals must rely on institutions such as banks, credit card companies, or governments. Blockchain technology provides an alternative to that method by making use of cryptography and computer code to generate the trust that would otherwise be provided by an institution (21).

2-3 Blockchain is a shared digital ledger
Let us now consider a more technical definition. A ledger is a book or computer file that records transactions. Blockchain technology is a shared digital ledger wherein transactions can be recorded and verified without recourse to a central authority to oversee the transaction. Shared: Traditionally, computing services run on centralized networks in which a central server distributes information to computers (clients) on a network. A digital ledger is different—it is replicated and distributed across nodes—several computers around the world that compete to verify transactions in a peer-to-peer network—where information is shared by all parties engaged with the transaction (22).

(22) Ibid (21)
2-4 How a blockchain works: the basics

i. The blockchain is a distributed database

In simple terms, the blockchain can be thought of as a distributed database. Additions to this database are initiated by one of the members (i.e. the network nodes), who creates a new “block” of data, which can contain all sorts of information. This new block is then broadcasted to every party in the network in an encrypted form (utilising cryptography) so that the transaction details are not made public. Those in the network (i.e. the other network nodes) collectively determine the block’s validity in accordance with a pre-defined algorithmic validation method, commonly referred to as a “consensus mechanism.” Once validated, the new “block” is added to the blockchain, which essentially results in an update of the transaction ledger that is distributed across the network.

Once a transaction is verified, the information is “cryptographically hashed and permanently recorded on the DLT network. The records are time stamped and displayed in a sequential manner to all parties on the network who have the appropriate access levels. It is claimed by many that this cryptographic hashing process secures the integrity of the data, such that once it is recorded on the network it cannot be modified; any errors would need to be fixed with new correcting amended entries. However, some technologists are reportedly exploring ways to create functionalities to edit DLT transaction records in certain circumstances. One vendor has reportedly developed a prototype of the capability to edit blockchain records in private DLT networks.

ii. The middleman's work is over

Now blockchain-technology promises to lower radically transaction costs and alter the structure of the firm and the economy. Blockchain-technology furthermore reduces significantly the costs of trust-building since the trust is not anymore assured by a middleman (bank, notary, insurance company, etc.) but by the consensus mechanism inherent to blockchain-technology. The potential consequences are far reaching: firms are potentially getting smaller (since services can be outsourced) and provider of middleman services see their business model become obsolete. Blockchain supports decentralization, which will end the role of the middleman.

Unlike a centralized network where there is one hub or server and every other node is a client, blockchain has smaller mini-hubs where a peer-to-peer network, consisting of equal peer nodes, functions as both client and server. Each peer on the blockchain provides computing power and stores a replicated version of the ledger, thereby creating consensus and sharing the responsibility of governance.


Beyond Fintech: Leveraging Blockchain for More Sustainable and Inclusive 
Supply Chains

Blockchain a digital distributed ledger can provide a platform that offers contracting 
parties the ability to verify that every link in a supply chain network is authentic, without 
need of an intermediary such as a clearing house or banking institution. Blockchain can be 
used to record, track, monitor, and transact assets, both physical or digital, in a cost efficient 
and transparent manner. By doing so, the technology can act as a ‘plug and play’ trust 
mechanism that enables other emerging technologies to achieve scale. Blockchain could 
provide a new model to reengineer supply chain logistics and the business models they 
support, and by doing so render them more efficient and transparent and ultimately more 
inclusive. Hence, Blockchain promises to:
• Provide faster and more affordable payment and finance options
• Leverage distributed-ledger capabilities to remove third-party intermediaries, streamlining 
  processes and promoting increased security across the value chain in multiple industries, with 
a focus on lowering the barriers to entry for small and micro-enterprises
• Provide solutions for increasing transparency across supply chains.

- The transparency dividend: Enforcing sustainability and safety standards

Research by the Organisation for Economic Cooperation and Development indicates that 
“green trade” is rising in political and economic importance, 
“with a global market of $1 trillion a year for environmental goods and services close.” At the 
same time, the Sustainability Consortium’s 2016 Impact Report found that the majority of 
consumer goods manufacturers lack visibility into the sustainability performance of their 
supply chains. The ‘greening’ of global supply chains requires traceability and transparency. The former is necessary to track hazardous products and materials, allocate responsibilities, and monitor environmental compliance. The latter is a precondition for achieving credibility, legitimacy, and fairness, and to avoid “green-washing” or shifting polluting activities to developing countries.


2-6 Potential uses and benefits of Blockchain technology.

This system of organizing and storing information ensures a number of benefits:

**Verifiability**: The combination of transparency and immutability also allows us to satisfy full public verifiability: anyone in the world can check for themselves that the rules of the system - in the case of digital currencies, that coins should be spent only once - are being followed. Whilst information cannot be manipulated, it can be easily verified thanks to the size and power of the network. (29)

**Security**: Traditional ledgers typically provide a blanket layer of security which, once breached, allows access to all stored data. In a blockchain-based system, the security mechanisms make sure that individual transactions and messages are cryptographically signed. This ensures essential security and effective risk management to tackle today’s high risks of hacking, data manipulation, and data compromise. (30)

**Smart contracts**: Distributed ledgers enable the coding of simple contracts that will execute when specified conditions are met. (31)

**Data transparency**: Blockchain technology includes mechanisms to ensure stored records are accurate, tamper-evident, and from a verifiable source. Thus, instead of multiple parties maintaining (and altering) copies of their own dataset, now every stakeholder receives controlled access to a shared dataset creating a single source of truth. This gives confidence to everyone working with this data that they’re using the most recent, accurate, and reliable dataset. (32)

**Blockchain has the potential to deliver significant improvements to trade and electronic business transactions because**: (33)

- Immutable and verifiable transactions recorded in a blockchain can allow the elimination of paper in areas where today it is still required;
- Automated (and immediate) reconciliation algorithms can facilitate faster payments;
- Immutable “original” electronic certificates, licenses and declarations can be linked with goods through digital twins in order to facilitate regulatory procedures.

**Supply chain auditing**: Consumers increasingly want to know that the ethical claims companies make about their products are real. Blockchain could help consumers to verify that the background story of each product is real though the timestamping of a date and location; and File storage: Spreading data throughout the network protects files from being hacked or lost. (34)

(32) Ibid (29)
(34) Ibid (30)
2-7 TRUST, NOT MONEY, MAKES THE WORLD GO ROUND

Imagine a world where everyone can trust everyone - or where trust isn’t even an issue any more. We would see aid organizations able to receive funds instantly from many individual donors and then distribute these funds efficiently and effectively to people who can prove their identity without a piece of paper.

We would see a world where a hard-working mother in Dubai can send payments to her family back in India without any of them needing a bank account; where a consumer can verify the exact provenance of their food; where voter fraud is a thing of the past and citizens can have absolute faith in the democratic process; where anyone can prove what property they own, allowing for completely new types of capital formation and entrepreneurship.

We are not there yet, but block chains are already helping us reimagine the world in ways that may have seemed like science fiction just a few years ago (35).

2-8 Trade finance.

Trade finance is the lifeline of global trade. The International Chamber of Commerce estimates that the global trade financing gap is around $1.6 trillion, with particularly dire consequences for small and medium-sized businesses and for growth in emerging markets. In this segment, financial institutions bridge the gap between exporters, who need guarantee of payment before they can ship, and importers, who require data on whether goods have been delivered. Roughly $18 trillion of annual trade involves some form of finance, be it credit, insurance or guarantee. The size of the trade finance market itself exceeds $10 trillion per year. However, its supply chain system is cumbersome and time-consuming, creating potential risks for the parties involved, where Anti-Money Laundering and authenticity issues weigh heavily (36).

i. What kind of impact could this have on everyday life?

in finance, companies and customers could potentially adopt a common digital currency as an alternative to traditional money, reducing the cost of transfers and enabling micro transactions. And in logistics, data sharing across the supply chain could enable higher levels of transparency, empowering consumers to make better choices about the products they buy. These are just some of the many opportunities that blockchain presents (37).

ii. The use of blockchain for trade finance.

While many financial institutions are embracing blockchain, others remain skeptical. Some are opposed to making large investments in a technology that they argue may not be profitable. Others are making significant investments in building blockchain-based networks. Hyperledger, an open source collaborative effort created to advance cross-industry blockchain technologies, is an example. Hosted by The Linux Foundation, it includes ABN-AMRO, ANZ Bank, Deutsche Borse Group, BNP Paribas, BNY Mellon, State Street Bank, Wells Fargo, and other financial institutions. In October 2016 the Commonwealth Bank of Australia, Wells Fargo, and international cotton producer Brighann Cotton announced the first global trade transaction between two independent banks combining blockchain with


smart contracts and the Internet of Things. The transaction involved financing a shipment of cotton from Texas, in the United States, to Qingdao, China, using a distributed ledger algorithm known as the Skuchain’s Brackets system\(^{(38)}\).

iii. Commonwealth Bank.

According to the Commonwealth Bank’s press release, this trade “involved an open account transaction, mirroring a letter of credit, executed through a collaborative workflow on a private distributed ledger between the seller (Brighann Cotton US); the buyer (Brighann Cotton Marketing Australia) and their respective banks (Wells Fargo and Commonwealth Bank).” The parties involved in this transaction introduced a physical supply-chain trigger to confirm the geographic location of goods in transit before a notification was sent to allow for release of payment. This tracking feature provided all parties with greater certainty compared with traditional open account and trade instruments such as letters of credit, which focus on documents and data.\(^{(12)}\) According to the Commonwealth Bank, the use of blockchain technology created transparency between buyer and seller, a higher level of security, and the ability to track a shipment in real time. Advancing from paper ledgers and manual processes to electronic tracking on a distributed ledger reduced errors and transaction times from several days to a few minutes. Commonwealth Bank and Wells Fargo indicate that they will continue to collaborate with trade finance clients, financial institutions, fintech companies and consortiums, and businesses in the insurance and shipping industries to explore the potential of distributed ledger technology\(^{(39)}\).

2-9 Blockchain In Logistics

i. Faster and Leaner Logistics in Global Trade.

Logistics is often considered the lifeblood of the modern world, with an estimated 90% of world trade carried out by the international shipping industry every year.\(^{(9)}\) But the logistics behind global trade is highly complex as it involves many parties often with conflicting interests and priorities as well as the use of different systems to track shipments. Therefore, achieving new efficiencies in trade logistics is likely to have significant impact on the global economy. According to one estimate from the World Economic Forum, reducing supply chain barriers to trade could increase global gross domestic product (GDP) by nearly 5% and global trade by 15%. Blockchain technology can help alleviate many of the frictions in global trade logistics including procurement, transportation management, track and trace, customs collaboration, and trade finance\(^{(40)}\).

ii. Improving Transparency and Traceability in Supply Chains.

Logistics and supply chain management are regarded as domains where blockchains are good fits for a series of reasons. During the lifecycle of the product, as it flows down the value chain (from production to consumption) the data generated in every step can be documented as a transaction, thus creating a permanent history of the product. Among things, blockchain technology can effectively contribute to: (i) Recording every single asset (from


product to containers) as it flows through the supply chain nodes, (ii) tracking orders, receipts, invoices, payments, and any other official document, and (iii) track digital assets (such as warranties, certifications, copyrights, licenses, serial numbers, bar codes) in a unified way and in parallel with physical assets, and others. Moreover, the blockchain can contribute effectively, through its decentralized nature, to sharing information about the production process, delivery, maintenance, and wear-off of products between suppliers and vendors, bringing new modalities of collaboration in complex assembly lines (41).

The challenges in logistics parameters, such as delays in delivery, loss of documentation, unknown source of products, errors, etc., can be minimized and even avoided by blockchain implementation. Benefits of integrating the supply chain with blockchain are the following: increased sustainability, reduced errors and delays, minimized transport costs, faster issue identification, increased trust (consumer and partner trust) and improved product transport and inventory management (42).

iii. Automating Commercial Processes in Logistics with Smart Contracts.

Current industry estimates indicate that 10% of all freight invoices contain inaccurate data which leads to disputes as well as many other process inefficiencies in the logistics industry. Blockchain has the significant potential to increase efficiency along the entire logistics and settlement process including trade finance and help to resolve disputes in the logistics industry. As digitized documents and real-time shipment data become embedded in blockchain-based systems, this information can be used to enable smart contracts. These contracts can automate commercial processes the moment that agreed conditions are met (43).


Because smart contracts reduce the need for manual interaction points, they can help organisations increase the efficiency of their operations by codifying logic which automatically executes if certain conditions are met. By putting the interaction on a blockchain, this provides all parties with a new level of information which can be utilised to increase the efficiency of planning and decision making and increases the level of accountability of all parties (44).

i. Blockchain – What Does It Mean For The UN

- Possible Uses Of Blockchain Technology In The Un Secretariat\(^{(45)}\):

**Administration**

An internal (private) UN blockchain to document financial transactions could improve accountability and auditability.

Inter-departmental or inter-agency transactions could be carried out on a private blockchain, with or without the use of an internal virtual currency.

Documenting a procurement process on a private blockchain could increase transparency.

Asset tracking could be implemented using blockchain technologies and tokens. Smart contracts could be used to implement accounting standards such as IPSAS.

**International Law**

A blockchain could function as a centralized ledger to establish the status of Member States with respect to various international treaties and any change in that status, providing visibility and clear interpretation of international treaties and participation.

**Humanitarian Affairs**

A public blockchain as a common database could help document needs in humanitarian emergencies by a multitude of parties.

- **Showcase of UN projects using blockchain**

  1- **Supply chain tracking** \(^{(46)}\).

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Transparent supply-chain between Djibouti and Ethiopia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity</td>
<td>World Food Programme (WFP)</td>
</tr>
</tbody>
</table>

The tracking of the movement of goods between countries can be difficult due to disparate information, which can often lead to delays in critical aid delivery. The World Food Programme is exploring digitising the supply-chain process and using a blockchain-based system to share a common set of information between relevant parties to both reduce the administrative burden and increase the transparency of information. In this pilot between Djibouti and Ethiopia, it is estimated that the current shipping process which takes 15-20 days can be reduced to three to five days.


2- Digital finance (47):

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Tracking chocolate production in Ecuador</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entity</td>
<td>United Nations Development Programme (UNDP)</td>
</tr>
</tbody>
</table>

When a chocolate bar is purchased through a new UNDP pilot, the purchaser receives an impact token which the consumer can send directly back to the farmer or can use for a discount on future products. When four tokens are sent back to a farmer, a new cocoa tree is planted, with the intent that this allows the farmer to increase their production and therefore their income. Because the token is issued using a blockchain, the tokens transfer can be tracked by anyone, creating an immutable and transparent proof of impact. This model is being currently tested in other value chains and products, as a new marketing strategy mechanism to leverage resources from the private sector for the SDGs.

3- A Global Platform Relies on Blockchain to Manage International Trade

 Depending on the platform, Keeping supply chain information together in a blockchain assists with tracking and compliance with regulatory reporting requirements. Authorities can review a blockchain record that contains information about ownership, provenance, authenticity, and price of goods. With the data in the blockchain, regulators can evaluate risk, target, and track the flows of goods and/or funds. Electronic transmission allows officials to conduct risk assessments in advance and speed border clearance. Compared to traditional database technologies that rely on a central hub, using blockchain could increase speed and security of gathering and tracking relevant information while decreasing costs and reducing fraud through heightened transparency (48).

Some see a potential for blockchain to facilitate trade flows, enabling companies to more easily send—and regulators to receive—customs and other documentation as well as payment of any fees before a shipment reaches the border. According to some observers, blockchain can help countries implement the World Trade Organization (WTO) Trade Facilitation Agreement (TFA) that entered into force in February 2017, including its provisions on transparency; the use of automated rather than paper-based systems; and the establishment of a single portal for traders to submit documentation and other data requirements (49).

3-1 Blockchain during COVID-19 and boost economic recovery

The COVID-19 crisis has rattled supply chains around the globe and created serious questions about the future of commerce. Critical to recovery and restoring economic activity is regaining trust in these systems. Though digitization has driven transaction costs down significantly, most business domains still operate in silos, creating accounting discrepancies that need to be aligned. With blockchain technology entering the space, access to trade


(48) Ibid (47)

finance, insurance and supply chain finance is increasingly integrated within the supply chain and can be transferred seamlessly. In addition, documentation and data relating to the transaction, such as the purchase and sales orders, can all be triggered and visible as a single source of truth to the respective trading partners and without the need for an intermediary.  

Blockchain technology provides a transformative means to make supply chains more resilient, supply chains are dependent on trust, transparency, and resilience. These factors could determine the speed and smoothness of economic recovery. As we chart a path forward beyond the COVID-19 crisis, blockchain has the potential to contribute to a more equitable system of commerce for producers and consumers alike.

3-2 Blockchain has the potential to change global trade forever

International trade has dominated the global headlines recently. Much of the discussions have been focused on the threat of a trade war. While extremely important, these conversations are missing a brighter side of international trade – how innovative technologies in the Fourth Industrial Revolution are transforming trade by making the processes more inclusive and efficient. The good news is that we may be on the brink of change. Different technologies in different parts of the technology adoption life cycle, when combined, could fundamentally change the way resources are allocated and international trade operates. Blockchain can have tremendous impact on the global trade supply chain. Trade organizations such as Dubai Chamber of Commerce and Industry have also launched an initiative to leverage blockchain technology to address global trade issues such as high costs and lack of transparency and security. In addition to making movement of goods more efficient and reliable.

i. new economic bridges between countries, and to create a better global trade system

Global trade has a lot in common with the famous bridges. Some are old, and some are new. Some are in good shape, while others are creaking. Some are non-descript, while others are exceedingly beautiful. Despite their differences, all these bridges are getting the job done connecting communities and businesses, and encouraging the flow of products, capital, and ideas. This is, in many ways, the story of global trade. In many ways, the future of trade is the future of data. With this in mind, What are the key building blocks of better trade? by reducing these barriers and increasing digitalization, this could become the main driver of global trade. Digitalization will intensify competition in global trade, pushing companies to boost their investment in new technologies and more efficient business practices. A global unified platform for blockchain and international trade - will be a huge opportunity for policymakers to build new economic bridges, to create a better global trade system.


(51) Ibid (50)


ii. Blockchain could boost global trade by $1 trillion

Distributed ledger technology such as blockchain could boost trade by more than $1 trillion in the next 10 years (figure below). That’s the assessment of a World Economic Forum white paper released. Meanwhile, DLT is also set to revolutionize governments’ processes, and will almost certainly form part of future regulations on cross-border food and drink imports. The global trade financing gap currently stands at around $1.5 trillion—a figure that could rise to $2.4 trillion by 2025, the report’s authors warn. But by removing barriers and streamlining trading processes, DLT could facilitate up to $1.1 trillion of new trade volume, roughly a 30% increase, significantly plugging the gap (54).

![Figure 1: Global trade flows are large and increasing](image_url)

3-3 The role of the blockchain in overcoming challenges in trade

This role will be clarified as follows (55):

i. Costs

Use cases will require justification based on costs and benefits. Participants will have different goals, yet some of them must bear an outsize share of the investment costs to build a wider ecosystem that produces benefits.

ii. Technology

As distributed ledger systems scale up, security and other risks associated with automating transactions and managing confidential information across distributed databases will arise. Some of these systems will be private or semi-private (within a specific supply chain or between individual banks), operated in a closed group of trusted parties. Others are being developed through smart contracts using traded utility coins, such as Ethereum. Solutions using publicly traded utility tokens must continue to improve their security and their energy efficiency in processing transactions.

iii. Ecosystem

Making trade and supply chains more efficient requires coordinated change across the ecosystem of buyers, sellers, shippers, governments and banks. All participants must adopt the new technologies to realize the full potential of benefits. Initially, technologies will develop irregularly, with certain supply chains or trading partners achieving early benefits, and certain country corridors moving faster than others.


3-4 Blockchain for trade: Potential quick wins for Governments

Single windows, e-regulations, certificates of origin and cross-border e-commerce compliance can benefit from a decentralized digital infrastructure powered by blockchain technology. One example is an Inter-American Development Bank project supporting a blockchain-based solution for mutual recognition of authorized economic operators between Costa Rica, Mexico and Peru. Another example is an initiative led by the United Nations Centre for Trade Facilitation and Electronic Business, backed by three Governments, to create a standard for the design of cross-border blockchain-based ledgers for the exchange of certificates of origin. Electronic payments can also be deployed on blockchains to enhance Governments’ revenue collection efforts. This can be especially powerful when delivered in conjunction with “smart contracts”, which are automated self-executing computer programs designed on a blockchain, that are triggered by defined circumstances. Examples of this are a payment triggered entry into a customs terminal or an automated issuance of final customs clearance documents after specified duties are received from a trader. This would help to ensure compliance with customs duties and reduce underhand payments and corruption.

However, legislative frameworks will need to be reviewed or designed for areas such as electronic signatures and electronic identities to set the environment for mass adoption of the technology (56).

3-5 How can platforms contribute to trade facilitation?

i. The WTO Trade Facilitation Agreement

Some of the challenges that the COVID-19 pandemic has brought to the fore as requiring urgent solutions could be addressed through the continued implementation of the Trade Facilitation Agreement (TFA), which came into force in 2017.

The TFA has several provisions that promote the adoption of improved export, import and transit procedures. For example, the TFA includes provisions that (57):

• allow for the advance lodging of documents in electronic format in order to allow for the pre-arrival processing of such documents

• allow for the electronic payment for duties, taxes, fees and charges collected by customs incurred upon importation and exportation

• provide for a de minimis shipment value or dutiable amount for which customs duties and taxes will not be collected; in certain members, this also extends to the VAT and other internal taxes.

Another important tool in the TFA is the implementation of a single window, which allows traders to submit the relevant documents and/or data requirements and be notified of a decision to release the goods from border control through a single entry point. The TFA encourages members to use information technology to support the single window, which in many members include automated control mechanisms for the above-mentioned requirements. Some of the more advanced systems allow for the use of electronic certificates (for rules of origin and sanitary and phytosanitary requirements) and even employ artificial intelligence.


intelligence and "big data" to develop algorithms that assist different authorities in undertaking risk management of specific consignments (58).

ii. State of single windows

The era of digitalization requires enterprises to rethink many aspects of their business models. Several enterprises in global trade have moved their digitalization focus toward the ecosystems they are part of. An important bottleneck for end-to-end digitization of global trade is the regulatory requirement to submit large volumes of information and documents to governmental authorities to comply with import, export, and transit-related regulatory requirements, on a global level, government to government interactions are characterized without a centralized, trusted intermediary, or there is not a willingness among the government parties to give power to a trusted intermediary. Decentralized technologies are therefore the only technology that can facilitate generic, trustworthy, and politically acceptable digitization and interoperability of global government to government processes in global trade (59).

Single windows have delivered a notable return on investment in a wide range of countries, facilitating trade considerably and lowering companies’ international trade costs (table below). Their benefits have been compounded by the digitization of trade documents: such “paperless trade” obviates the need for exporters and importers to spend time filling out paper documents, re-entering the same data multiple times and visiting government agencies in person to secure signatures and stamps.3 Many governments have digitized customs clearance and duty payments; research suggests this has cut border compliance time for imports by one-third, and significantly reduced corruption in the customs process (60).

<table>
<thead>
<tr>
<th>Main pain point</th>
<th>Selected reasons:</th>
<th>Use-case</th>
<th>Blockchain’s potential</th>
<th>Alternative/complementary technologies and evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited Interoperability</td>
<td>National single windows disconnected from each other</td>
<td>Interoperability and data sharing amongst operational single windows</td>
<td>Improved national single window’s visibility, manageability, and transparency</td>
<td>Big data enabling increased visibility and sharing of data across different national single windows</td>
</tr>
<tr>
<td>Limited Traceability of Shipments</td>
<td>Limited sharing of data among government and private sector</td>
<td>Interoperability and data sharing amongst operational single windows</td>
<td>Improved traceability and management of data</td>
<td>Interoperability and data sharing across different systems</td>
</tr>
<tr>
<td>Inefficient Manual Processes</td>
<td>Inefficiency in making and removing customs duty and fees payments</td>
<td>Automation of processes and elimination of manual steps</td>
<td>Development of a universal primary key to enable seamless cross-border transactions</td>
<td>Alternative technologies and evidence</td>
</tr>
<tr>
<td>Limited Traceability and Portability of identities and data</td>
<td>Limited access to information on single authority</td>
<td>Improved reliability of system security on single authority</td>
<td>Development of a universal primary key to enable seamless cross-border transactions</td>
<td>Alternative technologies and evidence</td>
</tr>
</tbody>
</table>

Source: World Economic Forum (61).

(61) Ibid (60)
### iii. Potential use-cases with blockchain

<table>
<thead>
<tr>
<th>BLOCKCHAIN OPPORTUNITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MARITIME TRADE</strong></td>
</tr>
</tbody>
</table>
| Applications of Blockchain technology can provide the following main opportunities and benefits for maritime trade, including **an improved means of sharing, distributing and verifying information**. Currently in the maritime world, bilateral messaging is frequently used between a sender and a receiver. A blockchain has the potential to increase transparency and availability of information for all participants. A valid transaction stored in a shared ledger will exist in everyone’s copy of that ledger. Transactions are not sent to a receiver but saved to a ledger which is then sent to everyone on the network with its updates. **More efficient transfer of digital assets**. Blockchain does enable the efficient and immediate transfer of assets. Such assets can be securely represented on a Blockchain by data packages called “tokens” which can be bought, sold and traded on a Blockchain, much like crypto-coins. For example:
  * A carrier may provide a cargo receiver with a “right to pick up the cargo” token. This token can be transferred to a trucker.
  * A trucker may get a Blockchain token from a terminal for a specific timeslot. If the trucker cannot keep his timeslot, he may pass it on to someone else registered on the Blockchain.
  * A carrier may issue securities for space on a voyage. That security may be traded or exchanged among different parties.
  * Blockchain also provides the opportunity to separate the function of “document of title” from the “contract of carriage”.

**Automation of contractual obligations through smart contracts**. In maritime transport, current process automation stops at the point where assets and their legal ownership change, which often takes place against a payment and is formalized with paper documents. This exchange of goods against payment process is handled through separate financial and physical flows. These two flows can be synchronized if both assets exist in (or can be represented by) a digital form. Swapping of assets can then happen through smart contracts. For example, a negotiable B/L may be swapped against the payment obligation of the party financing the trade. Common carriers may likewise execute their right to a lien by swapping a negotiable B/L against payment of charges, at origin as well as at destination. **Increased security** through Document security related to negotiable B/L, Right to access the goods, Trade compliance, Terms and conditions, Time and cost reductions.

| Road Transport | Road transport is a crucial economic activity. It brings people together and it carries goods to where they are needed. The vast majority of the daily needs of the population is delivered by road. Some additional benefits of Blockchain technology specific to road transport can be summarized into the following major categories: **Better tracking of orders and assets** companies using Blockchain technology will be able to more readily produce detailed information about a product, including supplier information, manufacturing details and logistics information. Examples of benefits to road transport include the ability to: identify quickly the party currently in possession of the goods; allocate costs to specific consignments; prove time and place of delivery; and undertake complex accounting. **Building trustworthiness** If a customer has trustworthy information about where a product originated, they are more likely to develop a longer-term relationship with a given supply-chain entity. This extends beyond supplier information, Blockchain-based applications could also collect trustworthy information about a company’s services. **Possibilities for increased cooperation** With trustworthy information registered on a Blockchain, the various actors of the transport network could interact with each other in a transparent and real-time way. This could be based, at least in part, on smart contracts that are aligned with the needs of the sector and the regulations in force within the transport industry. |
| AGRICULTURAL, FISHERIES AND FOOD TRADE | Information integrity is an important issue in agriculture, fisheries and food. This is because of the health implications related to food safety. Society requests and expects safe food and safe products. For agricultural and fish production, the supply chain is very complex; it involves multinational companies as well as many small and medium processors and traders in addition to small farmers and fishermen. Sometimes, supply may be limited to a local production chain; but, on many occasions, it is a complex global production chain  
**Certification** The certification of an agricultural product requires inspection, Blockchain technology, and processes which take advantage of this technology, can increase the reliability of all documents used in the certification process. Blockchain applications can also provide possibilities for verifying the actions of involved parties.  
**Track and trace** Blockchain technology can help for real traceability, a continuous and blockchain can verify when, where and the content of each event that is recorded, so when used at each data capture point in the supply chain, the Blockchain can verify the track and trace record of a product from the supplier to the last point where data was recorded, which could be the final customer.  
**Sensors and Internet of Things** Sensors are very important in agriculture, fisheries and food production. It is possible to register certificates on a Blockchain for a product or process based on recorded sensor data sets (for example, to certify that, during transportation, goods were never exposed to temperatures outside of a specified range).  
**Transport** The movement of goods and a product’s condition during transport are critical issues for track and trace, for food safety and sanitary reasons. Based on transport events, the next step in the transport, storage, production process or administrative process can begin. With Blockchain technology, the integrity of this event recording can be improved.  
**Smart contracts** With a smart contract, you can register basic information in the Blockchain which cannot be altered. Examples of such information includes product characteristics and product certificates. This data can then be used for validation and evaluation purposes and can be input for the automated next step(s) which are triggered by another smart contract when it processes a transaction.  
**Data ownership and data rights** Data ownership, data access, and other data rights are an important issue in all industries that use information technology, including agriculture. Blockchain technology supports the development of applications that clearly differentiate between data ownership, data access, data use and other rights. With Blockchain technology, transparency in the food supply chain can be improved. It provides the possibility for supply chain partners to have detailed and reliable information about product specifications, qualities and pricing. In addition, consumers may have access to this product information. Of course, whether or not this information is shared, and with whom, depends upon the data permissions that are defined for each stakeholder in a Blockchain.  

| Energy trade | Blockchain features with direct impacts on energy markets  
Peer-to-peer (disintermediated) access to electricity trading orders on local, national and international markets, Fault tolerant network and automatic replication of critical trading data and information, smart contracts that automate the processing of electricity trading data, production/consumption data, price agreements, administrative and legal paperwork, Cryptographically secured identities to ensure legally binding agreements |

Source: United Nations\(^{(62)}\); \(^{(63)}\).

\(^{(62)}\) United Nations - Economic and Social Council, ' Blockchain in Trade Facilitation: Sectoral challenges and examples, 2019,  

\(^{(63)}\) The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT), ' White Paper Blockchain in Trade Facilitation ', 2019,  
3-6  The platform implementation is key to improving supply chains in a post COVID-19 world

i. Supply chain before and after the platform

Supply chains before blockchain are complex (figure below), fragmented and rely on a large number of suppliers and intermediaries from all parts of the world. Relevant supply chain due diligence challenges include lack of transparency due to inconsistent or missing data, fraudulent data, lack of interoperability of data systems between actors, time consuming paper-based processes, limited information on product traceability, and lack of financing for due diligence activities. At the same time, customers, regulators, investors, and other businesses, are increasingly demanding access to more accurate information on the origin and journey of products they purchase, as well as the conditions under which those products are manufactured/produced (64).

![Supply Chain Diagram](image)

Source: IBM (65)

In traditional supply chains, which are guided by the analog contracts, there is a payment gap between the actual delivery of the product, the generation of the invoice and final payment settlement. The BT application of smart contracts will help the organizations to reduce or end this delayed and costly payment gaps by integrating delivery and payment in digital contracts that flow across enterprises and integrate with logistics partners and banks. The integration will also result in reducing the working capital requirements and simplify


finance operations leading to the sustainability of the supply chain. The smart contract, which acts as a rule book for these transactions can be used. Payment related decisions can be assisted by such smart agreements\(^{(66)}\).

Specific use cases have been identified by Deloitte blockchain professionals to exemplify industry-wide challenges for supply chain management. These cases examine product tracking in the pharmaceuticals sector, purchasing in the automotive industry, and know your supplier issues in the food industry (table below)\(^{(67)}\).

<table>
<thead>
<tr>
<th><strong>Pharmaceutical supply chain</strong></th>
<th><strong>Before platform (today)</strong></th>
<th><strong>After platform (tomorrow)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diagram 1</td>
<td>Diagram 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Automotive supply chain</strong></th>
<th><strong>Before platform (today)</strong></th>
<th><strong>After platform (tomorrow)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diagram 3</td>
<td>Diagram 4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Food supply chain</strong></th>
<th><strong>Before platform (today)</strong></th>
<th><strong>After platform (tomorrow)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Diagram 5</td>
<td>Diagram 6</td>
</tr>
</tbody>
</table>

Source: Deloitte\(^{(68)}\).


\(^{(68)}\) Ibid (67)
3-7 Platform: Breaking the logjam

Traditional trade and supply chain flows involve many types of loosely connected participants, which makes reconciling and verifying information painful, depending on this platform. Distributed ledgers, by contrast, operate as secure, shared databases, where each participant has a copy of the stored data. When a transfer of funds or information about a shipment is recorded, it is validated, made transparent and available to all participants collectively, and updated across the network almost immediately. Only certified parties can initiate transactions by using encrypted digital signatures, which underpin “smart contracts”, a digital protocol that verifies and enforces a contract without third parties. The system’s design itself guarantees one shared version of the truth; moreover, it is faster, cheaper and safer than manual systems.(69)

Thus, this platform is well suited to eliminating some inefficiencies in trade and supply chains through the following features: Faster credit risk assessment from the transaction history, Minimized human error in document checks, Instant verification and reconciliation of records, Automatic execution of workflow steps through smart contracts and Instant, secure and low-cost exchange of data we can say that it may change the concept and path of international trade.

3-8 Different paths for different stakeholders

Banks are exploring several options to replace paper with digital approaches, ranging from partnerships with platform providers and accounting firms to using APIs to ensure their customers are connected with other key providers. Most banks have made trade and supply chain finance a high priority for specific trade corridors or supply chains, with some joining consortiums such as Batavia, launched by UBS and IBM, or R3, which has attracted more than 100 financial entities.(70)

Specialized platform providers, such as Trade shift and Prime Revenue, are building ways to connect the ecosystem, especially by connecting buyers and sellers for trade, and cross-selling financing on top of the connections. Prime Revenue, for instance, manages invoices and connects more than 50 lenders to more than 20,000 clients, with more than $100 billion in transactions in 2016.(71)

Governments can leverage Blockchain technologies in ways that will help them in(72):

•Revenue taxation – Blockchain data can make auditing companies far simpler and more accurate while speeding up the collection of owed taxes by automating the levying of charges;

•Customs and excise – cross-border supply chains that leverage Blockchain technology will allow customs officials to increase the trustworthiness of the contents of shipments/consignments, allowing them to approve greater volumes of freight faster with less risk to the country’s security and/or revenue, Enforcement of compliance – easily being able to verify the contents of shipments/consignments and the sources of raw materials/finished products helps governmental bodies efficiently and effectively enforce their laws.


(70) The Africa blockchain conference, ‘WHAT IS BLOCKCHAIN’ , 2018,

(71) Ibid (69)

(72) The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT),’ White Paper Blockchain in Trade Facilitation’, 2019,
depending on the global platform governments will expand trade and seamless supply chains as a way of attracting investment in manufacturing that will create jobs. technologies will help governments for optimizing customs procedures, reduce corruption in ports and other chokepoints, and funnel trade flows through a single digital platform.

Large corporations are digitalizing their extended supply chains and, in some cases, directly investing in their own technology platforms to provide financing to suppliers and others along the chain. For companies such as Carrefour, Cargill and Toyota, these moves are not intended to become business lines, but to improve the operation of existing supply chains by automating manual processes(73).

Consumers, Merchants and Brands, Using near-field RFID technology and/or QR codes, Blockchains will make it possible for consumers to quickly obtain highly reliable information on individual store items. By scanning the code using an appropriate app, it will be possible to visually display the entire history of the item, showing place and time of production, processing and transit/storage conditions of the item up to that moment, all based on information in a Blockchain. Merchants and product brands will be able to manage their supply chains with greater accuracy and lower friction as increased transparency, via Blockchain-based traceability systems, make it possible to view their entire supply chain from any connected device, enabling better decision making, reducing waste and lowering costs(74).

Logistics, transport and freight forwarding companies are investing in digitalizing their operations and partnering with distributed ledger infrastructure providers to experiment with test cases(75).

Suppliers, Freight forwarders & wholesalers and Finance stakeholders, By being part of a Blockchain-linked supply chain, suppliers can add value to their businesses by reducing costs (automated data transfer, transparency of information) and potentially increase margins and markets. By being able to more accurately assess where shrinkage, damage and other events occur, through the registration of changes on a Blockchain as part of product traceability, freight forwarders can be held appropriately accountable only for value-deleting events that occur during their stewardship of the goods. Smart contracts may allow financial institutions to reduce risks by, for example, being able to provide loans to exporters based on invoices for export sales that have been verified by the importer on a Blockchain(76).

(76) Ibid (74)
3-9 The benefits of the transition to a global single platform

we can say that this platform can revolutionize various areas of international trade, from trade finance to customs procedures and intellectual property, are legion. The transparent, decentralized and immutable nature of the technology of Blockchain which platform will depend on will spark the interest of private actors – and governments – to explore the potential of this technology to enhance the efficiency of trade processes (77). Does the platform really have the potential to revolutionize international trade? This is what we will try to answer in the following points.

i. Towards paperless trade

Paperless blockchain solutions are expected to considerably facilitate information exchanges and processing among national agencies, importers and exporters. Moreover, blockchain would allow parties to securely store the trade-related documents such as certificates or licenses issued by government authorities so that they are always accessible and cannot be lost. Apart from that, such faster information exchange can also contribute to identification of fraud related to products’ origin or to tackle expired permits. This includes potential tax fraud detection that can be possible in the case of the relevant information exchange between customs and tax authorities (78).

A multitude of documents have to be submitted in the context of international trade transactions (see Figure below), which fall into four main categories (79): documents related to the commercial transaction itself, including the sales contract, commercial invoices and if needed, a packing list submitted by the exporter prior to exportation, documents related to trade financing, such as letters of credit, transport documents, including bills of lading, etc and documents for border procedures. Not only do these various paper intensive processes increase coordination and administrative costs, they are also prone to errors, losses and fraud. Although notable progress has already been achieved, full digitalization of cross-border trade transactions of goods is not yet in sight. The complexity and costs associated with international trade in goods has led an increasing number of companies and governments to investigate how Blockchain could be used to cut paperwork and enhance processes involved in the export of goods, from trade finance to border procedures and transportation, with the hope of moving closer to truly paperless trade.

(79) Ibid (77)
Blockchain can transform Global Trade Supply Chains Towards paperless  **For example:**

1- **IBM and Maersk** are bringing Global Trade Digitization (GTD) to market to reduce global trade barriers and increase efficiency international trade , GTD is a trade platform for containerized shipping  is built on an open technology and is underpinned by Blockchain technology .GTD supports Paperless Trade through Digitizes and automates paperwork filings , Enabling end users to securely submit , stamp and approve documents across and national and organizational boundaries , With GTD, the entire supply chain ecosystem shares a single trusted view of shipping events and documentation filings ( see figure below) (81).


(82) Ibid (81)
2- **WaveBL – Blockchain Bill of Lading**

<table>
<thead>
<tr>
<th>Section / Sector</th>
<th>Maritime Trade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short description</td>
<td>A solution that allows the secure exchange of original documents on the blockchain</td>
</tr>
<tr>
<td>Proposing / Implementing / Testing Organization</td>
<td>WaveBL</td>
</tr>
<tr>
<td>Long description</td>
<td>Wave provides a network for exchanging unique documents and documents of title (including bills of lading) using blockchain technology, replacing their paper-based equivalent. Possession and Title could be transferred from one party to another without the need of a central registry, thus cargo could be claimed for the carrier by the receiving titleholder. The product has reached its commercial stage and is used by several parties, performed a pilot with ZIM Lines which commenced offering of the WAVEBL product to its clients. Currently evaluated by several more carriers and freight forwarders and banks</td>
</tr>
</tbody>
</table>


In this context We must mention the World Trade Organization as it indicated TFA provisions relevant to paperless trade as follow:

<table>
<thead>
<tr>
<th>Article</th>
<th>Provision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Article 7.1</td>
<td>“Each Member shall, as appropriate, provide for advance lodging of documents in electronic format for pre arrival processing of such documents.”</td>
</tr>
<tr>
<td>Article 7.2</td>
<td>“Each Member shall, to the extent practicable, adopt or maintain procedures allowing the option of electronic payment for duties, taxes, fees, and charges collected by customs incurred upon importation and exportation.”</td>
</tr>
<tr>
<td>Article 10.2</td>
<td>“Each Member shall, where appropriate, endeavor to accept paper or electronic copies of supporting documents required for import, export, or transit.”</td>
</tr>
<tr>
<td>Article 10.3</td>
<td>Encourages Members to “use relevant international standards or parts thereof as a basis for their import, export, or transit formalities and procedures” which in theory would apply to standards relevant for e-commerce as well.</td>
</tr>
<tr>
<td>Article 10.4</td>
<td>“Members shall endeavor to establish or maintain a single window, enabling traders to submit documentation and/or data requirements for importation, exportation, or transit of goods through a single entry point to the participating authorities or agencies.” The article further stipulates that “Members shall, to the extent possible and practicable, use information technology to support the single window.”</td>
</tr>
</tbody>
</table>

Source: Trade Facilitation Agreement (84) & (85)


Paperless has many Benefits for traders and governments, for traders paperless systems can generate savings for traders through faster movement of goods as well as greater efficiency at border agencies where the exchange involves trade administration documents. Data exchanged includes purchasing orders, inventory reports, and digital sanitary and phytosanitary (SPS) certificates, among others. Paperless trade can also help businesses meet regulatory compliance obligations more efficiently and at a lower cost – whether the concept is applied in a domestic or international context. For governments paperless can enable real-time information on the location and status of a shipment, paperless trade can improve transparency and traceability. As supply chains become more complex, traceability has been sought by consumers, business and governments across all manner of products, to ensure labour, environmental and other standards. While traceability can be achieved through paper-based systems, digital systems are timelier and can reduce fraud. On the latter, paperless trade can help to tackle illegal and counterfeit trade or trade-based money-laundering by increasing the visibility on exported goods and easily exposing trades that make no commercial sense, Paperless trade can also help governments more efficiently to address growing security concerns and the need to ensure there are no potential threats hidden in commercial packages (86).

ii. Strengthening intellectual property rights

Intellectual property (IP) is an increasingly important part of international trade. Many products, from new medicines and pharmaceutical products to high tech goods such as smartphones, involve large investments in research and design. In fact, most of the value of such products lies in the amount of innovation, ideas and knowledge involved. Music recordings, films, books, computer software are creative products that are bought and sold for the ideas they contain rather than for the support on medium through which they are traded, Blockchain could also facilitate licensing with individual parties and the assignment of rights via software, and one could imagine a system in which transactions involving the licensing and assignment of IP rights are entered on a blockchain in order to keep an immutable record of such transactions and help track their use. The startup Ascribe, for example, offers the possibility of transferring, consigning or loaning digital creations via its blockchain-based platform (87).

One can easily imagine the opportunities that blockchains open for fighting counterfeiting in international trade. The TRIPS Agreement gives WTO members the possibility to authorize customs officials to act upon their own initiative, ex officio, to suspend the release of goods for which there is evidence that IP rights are being infringed. A key problem is the lack of expertise of most customs officials in detecting counterfeit goods. In this context, managing IP rights can be a particularly complex endeavour. The combined use of Blockchain and smart contracts could, in this respect, open new opportunities. Smart contracts could facilitate the management of IP rights on a global scale, thereby contributing to the emergence of “global IP chains” (88).

(88) Ibid (87)
iii. Digital single windows

Improve and accelerate trade compliance by enabling traders to submit all documents required for border clearance in one “window”, typically electronically. Enable agencies to process trade documents faster, thereby accelerating the clearance of cargo at borders. Example: depending on blockchain, in Cameroon, the time to import used cars fell from seven to two days, the time to lodge shipping manifests from seven days to one minute and the time to obtain import licences from eight hours to 15 minutes.7

- Digital payments of customs duties and fees

Reduce invoicing times by automating computation of duties and fees, reduce corruption in customs and reduce time for importers to make payments online. Accelerate reconciliation and thus customs clearance. Example: depending on blockchain, in Tanzania, digitization of customs clearance and duties cut import clearance times from nine days to less than one day.8

- Information on export and import processes available online

Make trade requirements easily accessible, including for new exporters and importers, and promote transparency of trade operations. Example: depending on blockchain, small and remote firms accelerating their access to trade requirements, information and documents in a single place reduces processing time and enables them to work without intermediaries.9

3-10 Case studies: using blockchain in international trade

With regards to international trade, this translates into various use cases for blockchain in trade, from the definition of the commercial transaction, to trade finance, supply chain and regulatory processes. We have selected some case studies, or scenarios, in the different phases of a trade process and different areas of international trade to look in more detail into the potential impacts of this technology in international trade.

Case 1: HSBC Trade Transaction with Cargill via Voltron (Corda Blockchain)

In 2018, HSBC announced its first blockchain-based trade for the U.S-based food and agricultural group, Cargill, via blockchain L/C. The case adopted a consortium chain to provide soybean shipment solutions and facilitated transactions between HSBC and the R3 counterparty, the Dutch bank ING. From Argentina to Malaysia, this project utilized an R3 Corda blockchain to realize food traceability. This pilot project inherently took advantage of blockchain features to simplify manual processing and paperwork when dealing with L/Cs. Traditional lengthy exchanges of export documentation were largely reduced with an associated reduction in costs. Figure below shows the process flow (in terms of a sequence diagram, SD) along the trade finance life cycle. ING and HSBC are acting as intermediary banks to bridge the transaction between Tricon Energy (buyer) and Reliance Industries (seller). Both banks are Voltron L/C consortia members using R3’s Corda technology.10

(90) Ibid (89)
(91) Ibid (89)
Case 2: Mizuho and Marubeni (Hyperledger)

Blockchain LC in the trade chain – Marubeni Corporation, On 6 July 2017, Japanese conglomerate Marubeni Corporation and Sompo Japan Nipponkoa were involved in a trade transaction between Australia and Japan using blockchain/distributed ledger technology (DLT).

This particular trade transaction between Australia and Japan saw all the trade-related processes, from issuing a letter of credit to delivering trade documents completed entirely via IBM’s Hyperledger Fabric platform using blockchain DLT. This resulted in the following benefits once the transaction was complete:

- Shorter delivery time for trade documents, reducing from multiple days to two hours;
- Reduction of time required to crate and transmit documents, as well as labour and other costs through document digitalisation; and
- Increased transparency by sharing transaction details with all parties.

Figure below reflects summary of deal

Case 3: BBVA B/L (Ethereum Blockchain, Wave)

In 2018, Banco Bilbao Vizcaya Argentaria (BBVA), a Spanish bank, used blockchain technology as a substitute for traditional trade documents (such as B/Ls) to reduce transaction time from 10 days to less than three hours. This project consisted of the exportation of frozen tuna from Mexico and the L/C payment issued by BBVA. The blockchain solution provider, Wave, utilized digitized documentation and electronic signatures to replace traditional paper-based documents. A special feature was the electronic presentation of documents during international transactions (Figure below) (96).

Source: Chang et al, 2019 (97).

(97) Ibid (96)
Case 4: Ornua’s L/C (Wave)

Barclays announced its cooperation with an innovative start-up, Wave, a decentralized blockchain hybrid crypto asset exchange platform, and initiated the supposed first global trade with its blockchain-based L/C project on 6 September 2016 (98). This illustrative case shows how the blockchain can allow the restoration of trust in trade. Target goods, namely, cheese and butter, were transacted between Irish agricultural food cooperatives Ornua (formerly the Irish Dairy Board) and the Seychelles Trading Company. Ornua has suffered from expensive export coverage across countries, particularly for the time-intensive, complex, and lengthy processing of L/C issuance and approval. Barclays reported a great reduction in trade finance processing time (particularly, it was completed within four hours)(99).

3-11 The platform and its Contribution to SDGs

Through what has been proven by studies and international agreements such as TFA, technology represents the future in improving and facilitating international trade.
In light of making our commercial world more accessible and easy, and controllable in times of crisis, relying on technology is the next hope, as we previously reviewed that there are institutions that have succeeded in conducting their business based on the technology represented by the blockchain. Hence, the launch of a single global platform for international trade that relies on Blockchain will be the starting point that will help radically change international trade, as it will contribute to:

- reducing barriers among countries and increasing digitalization
- facilitating trade considerably and lowering companies’ international trade costs. Their benefits may compound by the digitization of trade documents: such “paperless trade”
- digitized customs clearance and duty payments; this will cut border compliance time for imports by one-third, and significantly reduced corruption in the customs process
- through smart contracts will help the organizations to reduce or end this delayed and costly payment gaps by integrating delivery and payment in digital contracts
- Distributed ledgers, operate as secure, shared databases, where each participant has a copy of the stored data.
- eliminating some inefficiencies in trade and supply chains
- Faster credit risk assessment from the transaction history
- Minimized human error in document checks
- Automatic execution of workflow steps through smart contracts and Instant, secure and low-cost exchange of data
- depending on the global platform governments will expand trade and seamless supply chains as a way of attracting investment in manufacturing that will create jobs
- will help governments for optimizing customs procedures, reduce corruption in ports and other chokepoints, and funnel trade flows through a single digital platform.


The platform will be as a data portfolio, a guiding and monitoring tool to the global trade conditions and an indicator of economic and trade movement around the world and a practical way to take action in times of crisis. So one platform is sufficient to control and manage trade around the world.

From the above it is clear that the platform as an emerging and novel technology will contribute to the SDGs, by introducing new, transformative changes in relevant sectors. This platform will offer the potential to foster and enable new business models – and through depending on blockchain, which has shown its transformational potential in the field of finances and banking and international trade. so the platform will contribute to The increase in efficiency in transactions and that is often brought forward as the main contribution of the technology in the context of its potential impactful contribution to sustainable development as follows:

**Goal 1 - No Poverty.** Using this platform can facilitate Access small producers to markets in remote areas and communities, and helps them to accessible to more markets, while the use of platform could allow them to arrange for payment directly, without intermediaries. in addition it could also help them to establish reliable records showing their reputation as a vendor and their financial transactions. thus opening new opportunities for trade financing.

**Goal 2 - zero hunger**, this platform enables commodities, such as food, to be traced from its origin to its destination. In addition, depending on blockchain can contribute to more sustainable food production, and strengthening the supply side and particularly small-scale food producers, thus enabling them to better access markets and receive equal treatment in the supply chain.

**Goal 3 - Good Health and Well-being**, During the Covid 19 pandemic, the world faced many difficulties in circulating drugs, personal protection devices, disinfectants and medical devices due to the restriction of trade around the world, but in the context of the trade facilitation agreement and the necessity to rely on technology, the launch of this platform will overcome the difficulties that we faced during Coved 19 pandemic in medical supply chains, which opens-up another important support for SDG-3.

in addition, The use of this platform can improve traceability in the drug supply chain by enabling better anti-counterfeit measures for example serialization of pharmaceutical goods. Counterfeit pharmaceuticals considers as a serious health risk, especially in developing countries. this platform based on blockchain can provide consumers with easy access to information about the valid identity of a drug can both improve the accuracy of goods, and reduce health risks from counterfeit pharmaceuticals at an affordable cost.

**Goal 7 : Affordable and Clean Energy**, this platform is expected to directly impact the structure of energy markets, trade, regulations, and public scrutiny. Depending on Blockchain’s automated transactions which are carried out by smart contracts. smart contracts automation can reduce administrative costs, in addition it can also enable more efficient allocation of electricity within the grid.

**Goal 8 - Decent Work and Economic Growth**, this platform can Support Sustainable economic growth by helping allow quality jobs, environmentally friendly and sustainable working conditions that support the economy, and will aslo Increase access to financial services, commitments to trade, banking, and agricultural infrastructure, will cause an
increase in productivity and a reduction in unemployment levels in the world’s most impoverished regions

**Goal 9 - Industry, Innovation and Infrastructure**, projects based on blockchain have advanced the resilience of infrastructure and support economic development. By this platform, individuals and small enterprises can have the ability to perform micro-transactions and use other financial services which were previously very expensive and financial tools which depending on blockchain have the potential to open new markets and expand the horizons of existing ones. Blockchain can support the industrial sectors through increasing access to information and communications technologies, research.

**Goal 12 - Responsible Consumption and Production**, many enterprises using blockchain in order to achieve greater transparency and visibility in their supply chains and production processes, because this platform that depending on blockchain supports tracking goods, so this can guarantee access to secure information by all enterprises. It could also provide the consumer with trusted information about the products they purchase, in addition, tracking goods can prevent fraud for food products this will contribute in preventing the potential health risks related to the manipulation of food supplies.

**Goal 17 - Partnerships to achieve the Goal**, supporting international trade, and helping developing countries increase their exports, will achieve a global rules based on accurate, fair and transparent trading system, which Serve everyone. This platform will support different types of collaboration and partnerships between governments, companies, academia, civil society and individuals, and will have positive effects on international economies as it decreases fraud, illegal trade, illegal transfers or tax evasion and minimizes the effect of these negative externalities.
CONCLUSION

This paper pointed out the effects of the covid-19 epidemic on international trade and how the economies of countries have declined, factories and companies have stopped, financial institutions have been shaken, and global transportation has stopped as a result of this epidemic. If relying on technology would be the best way to avoid many losses and obstacles to face any upcoming crises, and where the blockchain is one of the means of technology that has proven its worth and its ingenuity in international trade where some institutions have relied on it to end all transactions and many cases that have been relied upon and succeeded in ending Business deals. So in light of this pandemic and other crises in the future, the best approach is to rely on a global blockchain-based platform to manage international trade, as technology and digital transformation are the keys to success that the entire world must realize.

RECOMMENDATIONS:
International trade and Covid-19 pandemic, it is time to break down barriers. How many crises have passed, how many crises will come. Will international trade deal with them in the same way in the era of digital transformation?

The creation of a single portal for global trade will be the most efficient approach to promoting international trade to fight such global-scale crisis in the future.

We Recommend, launching A unified Global Platform Relies on Blockchain to Manage International Trade under control world trade organization and united nations.
References:

- Barclays , 'Blockchain Revolution in Trade Finance ' , 2020,  
- Davradakis , Emmanouil & Ricardo Santos , 'Blockchain, FinTechs and their relevance for international financial institutions' , 2019,  
- Deloitte , 'When two chains combine Supply chain meets blockchain ' , 2017 ,  
- Emmanuelle Ganne , ' Can Blockchain revolutionize international trade? ' , (World Trade Organization ,2018 ),  
- European Parliament , ' Blockchain for supply chains and international trade ' , (European Parliamentary Research Service ,2020) ,  
- Financial Industry Regulatory Authority (FINRA) , ' Distributed Ledger Technology: Implications of Blockchain for the Securities Industry,  
- Godbole , Shantanu , ' How Blockchain can transform Global Trade Supply Chains ' , (IBM Academy of Technology, 2017) ,  
- Heutger , Matthias & Markus Kückelhaus , ' Blockchain In Logistics'. (DHL Trend Research, 2018) ,  
- Hewett , Nadia & Jonas Sveistrup Søgaard and Rasmus Winther Mølbjerg , ' This is how blockchain can be used in supply chains to shape a post-COVID-19 economic recovery'. , (The World Economic Forum ,2020) ,  
- Houben , Robby & Alexander Snyers , ' Cryptocurrencies and blockchain'. , (European parliament,2018) ,  
- International finance corporation (IFC) – world bank group , ' Can Blockchain Technology Address De-Risking in Emerging Markets? ' ,  


39


