EUROPEAN POLICY CENTRE

CEFTA
Central European Free Trade Agreement

CEFTA

THE TRUST MACHINE FOR THE COMMON REGIONAL MARKET

INNOVATIVE POLICY PROPOSAL

A CASE FOR A DISTRIBUTED LEDGER TECHNOLOGY AS A TOOL FOR A TRADE AND SERVICES FACILITATION

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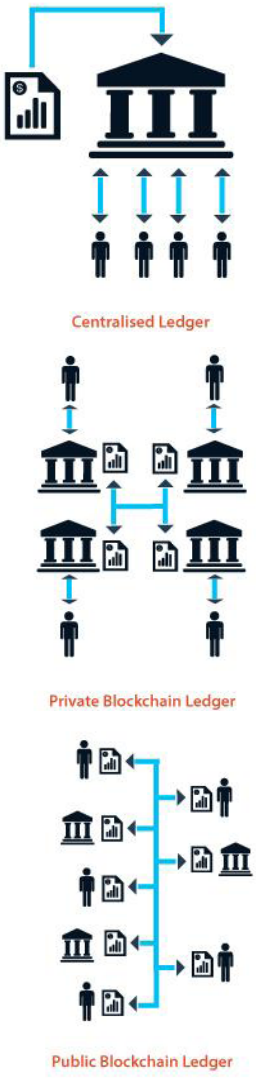
EXECUTIVE SUMMARY



Source: globalriskinstitute.org

Despite a successful implementation providing for a zero tariff trade across the region, the trade within the CEFTA area is inhibited by numerous non-tariff barriers to trade (NBTs). Waiting time at crossing points in CEFTA generates up to 800 M€ per year.[1] Balkan Six partners have been struggling to conclude legally binding agreements needed for turning regional markets into an single area without internal obstacles for free movement of goods, services, work force and capital. Indeed, failure to do these is reflected in the costs of doing business, lost opportunities and slower pace of CEFTA trade facilitation. Regional market remains fragmented.

Innovative Policy Proposal (IPP) identifies **mutual mistrust in CEFTA Parties' trade related documents as a major source of the NBTs**.

Distributed ledger technologies (DLTs) or **blockchains are capable of building trust between parties regarding authenticity of their data with *disintermediation***[2]. Namely, the blockchain tech minimizes the amount of trust required between the equal partners to transact due to the smart contract functionality that enables automatic enforcement of terms and conditions embedded in the agreed protocol of the distributed ledger.

Indeed, *the Economist* coined the blockchain as *a machine for creating trust*, an ultimate *trust machine*.[3]

To many, blockchain technology lacks a sufficiently proven and robust use case in the public sphere. However, in current times that do not lack excuses, being good or bad, to create new trade headwinds, **to *sleep on* the blockchain potential can generate lofty opportunity costs for CEFTA parties**.

1 RCC https://www.rcc.int/pages/143/common-regional-market#gallery[videos1]-2

2 *Disintermediation* is the process of cutting out one or more middlemen from a transaction, supply chain, or decision-making process.

3 The Economist, "The trust machine" https://www.economist.com/leaders/2015/10/31/the-trust-machine (last time accessed 28 October 2021)

To be sure, the use cases for DLTs employment have been investigated at the EU level through the European Blockchain Service Infrastructure (EBSI) initiative in the area of mutual recognition of diplomas, professional degrees, creation of import one-stop-shops between customs and tax authorities, etc.

As noted by the OECD Global Blockchain Policy Forum "the technology could have a truly transformative impact on border procedures by assisting with interagency coordination, certification and licensing, document and cargo integrity, and customs procedures"[4], among other areas.

Translated into the CEFTA's inter-agency context the agreed blockchain solutions may provide for **disintermediated cross-border authentication of trade-related documents** that could eliminate (some of) the NBTs and associated costs of doing business generated by physical verification of goods and papers by competent authorities. In particular, the blockchain could be used to build digital infrastructure facilitating technological enforcement of the CEFTA/CRM initiatives (such as paperless trade, mutual recognition programmes, notified bodies certificates, licenses, diplomas, etc.), i.e. a creation of **common authorization schemes that run on blockchain shared by CEFTA authorities**, economic operators and other actors.

Indeed, while mutual recognition of products is yet to be agreed between the CEFTA parties, **the blockchain tech can help business to certify that certain procedures have been done** (for example testing, certification, proof of origin, etc.) **without need of the physical verification by each authority** involved.

Beyond the blockchain hype, however, the use cases of the new technology in legacy infrastructures needs careful consideration. For any potential use case it is important to consider whether contemplated benefits are uniquely linked to the blockchain or whether they could be accomplished by simpler digitalisation strategies for existing processes. CEFTA should avoid offering solutions looking for problems. Instead CEFTA may identify existing or foreseeable problems and then look for possible blockchain solutions.

Indeed, CEFTA can make a difference by providing the big picture.

Therefore, Innovative Policy Proposal recommends that CEFTA should consider following steps:

1. to launch an ongoing **CEFTA dialogue on blockchain use cases** in CEFTA/CRM context engaging governments, experts, blockchain industry, business community, think tanks, civil society, etc;

2. to propose to the CEFTA parties devising of a **Blockchain Task Force** in charge of investigating viable, valuable, and vital cases for employment of blockchain supported solutions in the CEFTA/CRM context and identifying regulatory/administrative obstacles for their use;

3. to develop a **CEFTA Blockchain road map** with clear value proposals developed on the basis of results of the CEFTA dialogue and Blockchain Task Force reports.

4 The Policy Environment for Blockchain Innovation and Adoption 2019 OECD Global Blockchain Policy Forum Summary Report (OECD, 2019) p. 26.

LACK OF MUTUAL TRUST AFFECTS FREE MOVEMENT OF PRODUCTS, SERVICES AND WORK FORCE

CEFTA 2006[5] is a free trade agreement that establishes the regional free trade area between Western Balkan economies and Moldova.[6]

Despite a successful implementation providing for zero tariff for trade across the region, trade within the CEFTA region is inhibited by numerous non-tariff barriers (NBTs).

Namely, "trading with CEFTA parties requires more documents and a higher number of samples and physical controls in all clearance stages than trading with EU Member States."[7]

> *WAITING TIME AT CEFTA CROSSING POINTS GENERATE UP TO 800 M€ PER YEAR OF OPERATING COSTS TO THE BUSINESS*

As a result, waiting time at crossing points in CEFTA have been estimated by the World Bank at about 26 million hours per year generating operating costs in a range between 250 and 300 M€ per year to the business,[8] or even up to 800 M€ per year according to some sources.[9]

Furthermore, regional market in services remains fragmented. Movement of workers/professionals/scientists remains the most restricted mode of supply in CEFTA.

Western Balkans Regional Economic Area based on CEFTA and EU rules, delivered through Multi-Annual Action Plan measures, has been seen as a tool to address sources of fragmentation of region's markets.

At the Sofia summit on 10 November 2020 Balkan Six devised the Common Regional Market (CRM) 2021-2024 Action Plan made up of targeted actions in four key areas:

1. *Regional trade area* enabling free movement of goods, services, capital and people based on EU-compliant rules and standards;
2. *Regional investment area* with investment policies aligned with the EU standards and best international practice;
3. *Regional digital area* integrating Western Balkans into the *pan-European digital market*; and
4. *Regional industrial and innovation area* transforming the local industrial sectors and value chains in globally competitive players.

In addition, on 29 July 2021 under Open Balkan initiative political leaders from Albania, North Macedonia and Serbia signed two memorandums on trade facilitation and movement of persons aimed at removal of economic barriers between these economies by 2023.[10]

However, due to bilateral and status issues Balkan Six partners have been struggling to conclude legally binding agreements related to the CRM and CEFTA.[11]

The first visible impact are the very high logistical costs - almost the double compared to EU MS – supported by Western Balkan economies which affect negatively the final cost of products manufactured in the region or imported by the region, undermining the overall competitiveness of Western Balkans.

Apart from expenses of the transport sector the obstructed movement of products, services and work force generates missed opportunities to scale up regional productivity and attract more investments in the region, as not immediately observable consequence.

Mutual opening of the markets for free cross-border supply of services, intercompany transfers, free movement of scientists and work force is further affected by failure of CEFTA partners to introduce system of mutual recognition of diploma/certificates and professional qualifications and IDs.

Excessive physical inspections at the borders, overlapping compulsory document and data submission requirements, coupled with redundant trade-related procedures[12] keeps local markets inaccessible from effective competitive entry.

5 Central European Free Trade Agreement (CEFTA 2006).

6 The Republic of Albania, Bosnia and Herzegovina, the Republic of North Macedonia, the Republic of Moldova, the Republic of Montenegro, the Republic of Serbia and the United Nations Interim Administration Mission in Kosovo on behalf of Kosovo in accordance with United Nations Security Council Resolution 1244

7 https://cefta.int/trade-facilitation/harmonization-of-norms-and-practices/

8 Transport Community, The Permanent Secretariat "Ensuring the fast flow of goods through Green Lanes linking the EU and Western Balkans" A potential contribution of the Transport Community to the conclusions of the EU-Western Balkans Leaders' summit of 6 May (Zagreb summit), p. 3.

9 RCC https://www.rcc.int/pages/143/common-regional-market#gallery[videos1]-2

10 COMMISSION STAFF WORKING DOCUMENT Serbia 2021 Report Accompanying the document Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions 2021 Communication on EU Enlargement Policy p. 76.

11 Ibid.

12 https://cefta.int/trade-facilitation/

Indeed, political mistrust between parties mirrors **mutual mistrust in parties' data** which is reflected in the costs of doing business, lost opportunities and slow pace of CEFTA trade facilitation.

While mutual recognition of products is yet to be agreed between the CEFTA parties, the blockchain tech can help economic operators to certify that certain procedures have been done (for example testing, certification, proof of origin, etc.) without need of the physical verification of the fact by each national authority involved.

This Innovative Policy Proposal (IPP) is examining if distributed ledger and blockchain technologies can help to insulate cross-border trade within CEFTA region from risk of mutual mistrust to cut time and/or otherwise remove (portion of) unnecessary controls off the CEFTA borders?

> *"MUTUAL MISTRUST IN CEFTA PARTIES' DATA CREATE SUBSTANTIAL COSTS OF DOING BUSINESS IN THE AREA. THE BLOCKCHAIN TECH CAN HELP TO CERTIFY THAT CERTAIN PROCEDURES HAVE BEEN DONE (FOR EXAMPLE TESTING, CERTIFICATION, PROOF OF ORIGIN, ETC.) WITHOUT NEED OF THE PHYSICAL VERIFICATION OF THE FACT BY EACH CEFTA AUTHORITY.*

THE DISTRIBUTED LEDGER AND BLOCKCHAIN TECHNOLOGY A MACHINE FOR CREATING TRUST

Blockchain[13] is a tamper-resistant[14] and timestamped[15] database that operates through a distributed network of multiple *nodes*[16] or users, ie a distributed ledger. Transactions between users do not require intermediaries or trusted third parties. Instead, trust is based on the rules that everyone follows to verify, validate and add transactions to the blockchain – a 'consensus mechanism'.[17]

A distributed ledger (also called a shared ledger) is an asset database that can be shared across a network of multiple sites, geographies or institutions. The assets can be financial, legal, physical or electronic. By controlling a node, all participants within a network can have their own identical copy of the ledger. Any changes to the ledger are reflected in all copies in minutes, or in some cases, seconds. The security and accuracy of the assets stored in the ledger are maintained cryptographically through the use of 'keys' and signatures to control who can do what within the shared ledger. Entries can also be updated by one, some or all of the participants, according to rules agreed by the network, i.e. network consensus.[18] Therefore, the distributed ledger

13 "A blockchain is a type of database that takes a number of records and puts them in a block (rather like collating them on to a single sheet of paper). Each block is then 'chained' to the next block, using a cryptographic signature. This allows block chains to be used like a ledger, which can be shared and corroborated by anyone with the appropriate permissions." (UK Government Office for Science, Distributed Ledger Technology: beyond block chain, 2016, p. 17).

14 The blockchain transaction data is encrypted so it is extremely difficult to change or delete the record of transactions. In this sense the records on a blockchain are tamper-resistant.

15 All transactions are time-stamped – that is, data such as details about a payment, a contract, transfer of ownership, certificate, etc. are linked publicly to a certain date and time.

16 The term "node" is being used mostly in relation to blockchain, a decentralised digital ledger that records all transactions in the network and makes the information available to everyone via a connected device. What this means is every transaction has to be chronologically recorded and distributed to a series of connected devices. These devices are called nodes. The nodes communicate with each other within the network and transfer information about transactions and new blocks. These devices download a blockchain's entire history to observe and enforce its rules. https://gadgets.ndtv.com/cryptocurrency/features/what-is-a-block-chain-node-how-does-cryptocurrency-work-2515427

17 European Commission, Blockchain Now and Tomorrow - assessing multidimensional impacts of distributed ledger technologies (Europen Commission, Joint Research Center, July 2019) p. 102

18 UK Government Office for Science, Distributed Ledger Technology: beyond block chain, 2016, p. 5.

> *THE LACK OF A SINGLE ENTITY CONTROLLING THE DISTRIBUTED LEDGER CREATES STRONG RESILIENCE AGAINST SINGLE POINT-OF-FAILURE FLAWS. DISTRIBUTED LEDGERS ARE INHERENTLY HARDER TO ATTACK BECAUSE INSTEAD OF A SINGLE DATABASE, THERE ARE MULTIPLE SHARED COPIES OF THE SAME DATABASE. RECORDS (DATA ABOUT A PAYMENT, A CONTRACT, A CERTIFICATE, TRANSFER OF OWNERSHIP, ETC.) IN BLOCKCHAIN ARE ENCRYPTED AND TAMPER-RESISTANT MAKING ATTEMPTS TO CHANGE, DELETE, OR MANIPULATING WITH ORIGIN OR AUTHENTICITY OF RECORDS, EXTREMELY DIFFICULT AND EASILY DETECTABLE.*

is a consensus of replicated, shared, and synchronized digital records geographically spread across multiple sites, economies, or institutions.[19]

Blockchain is **technology capable of building trust with *disintermediation***[20].

"Blockchain enables parties with no particular trust in each other to exchange digital data on a peer-to-peer basis with fewer or no third parties or intermediaries".[21] Instead, trust is based on a *consensus mechanism*[22], a set of rules that everyone follows to verify, validate and add transactions to the blockchain. *Smart contracts*[23] feature of the blockchain enables smooth validation of requests/transactions based on the terms and conditions built in the consensus without the need for human intermediation.

Placed in the cross-border trade context **the distributed ledgers based on the blockchain tech could be used to eliminate *counterparty risks***[24] in relation of the origin, validity and/or authenticity of documents issued by different authorities, foreign entities and/or in relation to the origin of the goods.

A database shared by the national CEFTA authorities could facilitate validation that certain procedures have been done (for example testing, certification, proof of CEFTA origin, etc.) without need of the physical verification of the fact by each of the authority involved.

In particular, the agreed blockchain solutions may provide for *disintermediated* cross-border authentication of trade-related documents or national procedures of CEFTA parties, thus, creating **automated disintermediated common authorization schemes** that run on the digital ledger shared by relevant CEFTA authorities, institutions and/or economic operators.

Certainly, efficiency gains (lower operational costs, reduced processing time, less paper and human-labour-intensive processes) combined with security (data integrity, tamper-resistant and consistency)[25] may aid to trust-building between authorities in charge of market clearance of goods/services thus facilitating further opening up of cross-border trade in CEFTA region.

> *THE BLOCKCHAIN TECHNOLOGY ELIMINATES NEED OF PHYSICAL INTERMEDIATION OF THIRD PARTIES IN THE PROCESS OF AUTHENTIFICATION OF ORIGIN AND CONTENT OF THE DATA. AS A RESULT, THE TECH CAN BE EMPLOYED IN PAPERLESS CLERANCE OF PRODUCTS IN RELATION TO THEIR ORIGIN, TRACEABILITY AND/OR COMPLIANCE WITH APPLICABLE RULES IN THE CROSS-BORDER TRADE.*

19 Ibid.

20 Disintermediation is the process of cutting out one or more middlemen from a transaction, supply chain, or decision-making process.

21European Commission, Blockchain Now and Tomorrow - assessing multidimensional impacts of distributed ledger technologies – Excecutive Summary (Europen Commission, Joint Research Center, July 2019) p. 4.

22 The distributed ledger database is spread across several nodes (devices) on a peer-to-peer network, where each replicates and saves an identical copy of the ledger and updates itself independently. When a ledger update happens, each node constructs the new transaction, and then the nodes vote by consensus algorithm on which copy is correct. Once a consensus has been determined, all the other nodes update themselves with the new, correct copy of the ledger.

23 Smart contracts are digital contracts stored on a blockchain that are automatically executed when predetermined terms and conditions are met. "Smart contracts are simply programs stored on a blockchain that run when predetermined conditions are met. They typically are used to automate the execution of an agreement so that all participants can be immediately certain of the outcome, without any intermediary's involvement or time loss. They can also automate a workflow, triggering the next action when conditions are met." (IBM https://www.ibm.com/topics/smart-contracts last accessed on 29 October 2021)

24 In the context of financial transactions, the blockchain technology eliminates counterparty risk, ie the likelihood that one of those involved in a transaction might default on its contractual obligation. This feature could be translated in different inter-institutional context to eliminate counterparty risks in relation to authenticity of documents.

25 European Commission, Blockchain Now and Tomorrow - assessing multidimensional impacts of distributed ledger technologies – Excecutive Summary (Europen Commission, Joint Research Center, July 2019) p. 4.

The Economist coined the blockchain as a machine for creating trust.

The Economist, "The trust machine"

https://www.economist.com/leaders/2015/10/31/the-trust-machine

ENVIRONMENTAL IMPACTS OF BLOCKCHAIN SOLUTIONS

Blockchain as a tamper-resistant and timestamped database operates through a distributed network of multiple *nodes*[26] or users. Transactions between users do not require intermediaries or trusted third parties. Instead, trust is based on the rules that everyone follows to verify, validate and add transactions to the blockchain – a 'consensus mechanism'.[27]

Consensus mechanism is implemented by computing power of validators running the nodes which translates to energy consumption. As a result, "the high energy consumption when deploying proof of work consensus mechanisms"[28] is often cited as a major concern, especially, in the context of seemingly negative impact of technology to climate change.

For example, estimated Bitcoin's blockchain consumption of electricity is 112.82 TWh[29] or app. 0.55% of global electricity production, a rough equivalent to the annual energy draw of Sweden.[30]

However, **energy consumption is not equivalent to carbon emissions** since electricity spent to run the network can be sourced from renewables or non-renewable energy resources alike.

Furthermore, the consensus mechanisms of a number of blockchain protocols, other than Bitcoin, are characterised by relatively negligible energy footprint due to advanced tech or relatively small number of validators not requiring excessive computing power to validate and scale high number of transactions.[31]

Indeed, a limited number of pre-designated actors with the power to authenticate data and update the distributed ledger (as the case may be in the context of network of CEFTA authorities each controlling a node) may not require excessive computing power to operate.

On the other hand, if some of the use cases proved to be successful net-environmental effect could be positive. For example, **blockchain-supported paperless cross-border clearance of goods may significantly cut hours spent by trucks at borders together with a significant consumption of fuel while not moving the goods**. In the same time, it could improve the working conditions of transport workers exposed to the vapors.

> *"ESTIMATES FOR WHAT PERCENTAGE OF BITCOIN MINING USES RENEWABLE ENERGY VARY WIDELY. IN DECEMBER 2019, ONE REPORT SUGGESTED THAT 73% OF BITCOIN'S ENERGY CONSUMPTION WAS CARBON NEUTRAL, LARGELY DUE TO THE ABUNDANCE OF HYDRO POWER IN MAJOR MINING HUBS SUCH AS SOUTH-WEST CHINA AND SCANDINAVIA. ON THE OTHER HAND, THE CAMBRIDGE CENTER FOR ALTERNATIVE FINANCE ESTIMATED IN SEPTEMBER 2020 THAT THE FIGURE IS CLOSER TO 39%. BUT EVEN IF THE LOWER NUMBER IS CORRECT, THAT'S STILL ALMOST TWICE AS MUCH AS THE U.S. GRID, SUGGESTING THAT LOOKING AT ENERGY CONSUMPTION ALONE IS HARDLY A RELIABLE METHOD FOR DETERMINING BITCOIN'S CARBON EMISSIONS. "*
>
> *"HOW MUCH ENERGY DOES BITCOIN ACTUALLY CONSUME?" BY NIC CARTER, HARVARD BUSINESS REVIEW HTTPS://HBSP.HARVARD.EDU/PRODUCT/H06C5X-PDF-ENG*

26 The term "node" is being used mostly in relation to blockchain, a decentralised digital ledger that records all transactions in the network and makes the information available to everyone via a connected device. What this means is every transaction has to be chronologically recorded and distributed to a series of connected devices. These devices are called nodes. The nodes communicate with each other within the network and transfer information about transactions and new blocks. These devices download a blockchain's entire history to observe and enforce its rules. https://gadgets.ndtv.com/cryptocurrency/features/what-is-a-blockchain-node-how-does-cryptocurrency-work-2515427

27 European Commission, Blockchain Now and Tomorrow - assessing multidimensional impacts of distributed ledger technologies (Europen Commission, Joint Research Center, July 2019) p. 102

28 European Commission, Blockchain Now and Tomorrow - assessing multidimensional impacts of distributed ledger technologies (Europen Commission, Joint Research Center, July 2019) p. 102

29 University of Cambridge Judge Bussiness School https://ccaf.io/cbeci/index

30 Harvard Business Review, "How Much Energy Does Bitcoin Actually Consume?" by Nic Carter https://hbr.org/2021/05/how-much-energy-does-bitcoin-actually-consume

31 ADAN, "Blockchain protocols and their energy footprint" https://adan.eu/en/article/blockchain-protocol-energy-footprint last time assessed on 24 November 2021

CURRENT AND POTENTIAL USE CASES OF BLOCKCHAIN TECHNOLOGIES IN THE PUBLIC SPHERE AND INTERNATIONAL TRADE

Blockchain technology is often confused with crypto-currencies, which is only one type of application with its own set of considerations. Instead, blockchain and DLT have potential applications in many other sectors, from advanced manufacturing or health to education and public and third-sector engagements with citizens.[32]

Indeed, Governments have started to use distributed ledger technologies to conduct their business.

Estonia is first economy to use blockchain on national level.[33] The Estonian government has been implementing distributed ledger technology since 2007 using a form of distributed ledger technology known as Keyless Signature Infrastructure (KSI), developed by an Estonian company, Guardtime. KSI allows citizens to verify the integrity of their records on government databases. It also makes it almost impossible for privileged insiders to perform illegal acts inside the government networks. This ability to assure citizens that their data are held securely and accurately has helped Estonia to launch digital services such as e-Business Register and e-Tax.

A number of the European Commission services are conducting, starting or reflecting on exploratory activities using blockchain as possible ways to improve and support the execution of core EC processes and policies. The flagship European initiative, European Blockchain Service Infrastructure (EBSI), is a joint initiative of the European Commission and the member states (operating collectively as the European Blockchain Partnership).

EBSI consists of a peer-to-peer network of interconnected *nodes* running a blockchain-based services infrastructure. Each member of the European Blockchain Partnership (EBP) – the 27 EU, Norway, Liechtenstein and the European Commission – will run at least one node. As a result, EBSI is organised into a network of distributed nodes with applications focused on specific use cases.[34]

Four use cases were selected initially in 2019 and different prototypes were built to address each case:

notarisation: leveraging the power of blockchain to create trusted digital audit trails, automate compliance checks in time-sensitive processes and prove data integrity;

diplomas: giving control back to citizens when managing their education credentials, significantly reducing verification costs and improving authenticity trust;

European digital identity: Implementing a generic digital identity capability, allowing users to create and control their own identity across borders without relying on centralised authorities, and enabling for compliance with the eIDAS regulatory framework[35];

trusted data sharing: leveraging blockchain technology to securely share data amongst authorities in the EU, starting with the import one-stop-shops (IOSS) VAT identification numbers and import one-stop-shops amongst customs and tax authorities.[36]

According to the OECD Global Blockchain Policy Forum Summary Report "**the technology could have a truly transformative impact on border procedures** by assisting with interagency coordination, certification and licensing, document and cargo integrity, and customs procedures (emphasis added)."[37]

> *"EU PLANS TO APPLY BLOCKCHAIN TECH TO IMPLEMENT IMPORT ONE-STOP-SHOPS (IOSS) SCHEMES SHARED BY CUSTOMS AND TAX AUTHORITIES*

32 European Commission, Blockchain Now and Tomorrow - assessing multidimensional impacts of distributed ledger technologies (Europen Commission, Joint Research Center, July 2019) p. 6.

33 After Estonia's experience with the 2007 cyber attacks, scalable blockchain technology was developed to ensure integrity of data stored in government repositories and to protect its data against insider threats. Estonia became host to the NATO Cooperative Cyber Defence Centre of Excellence and the European IT agency (see https://e-estonia.com/solutions/security-and-safety/ksi-blockchain/)

34https://digital-strategy.ec.europa.eu/en/policies/european-blockchain-services-infrastructure

35 Regulation (EU) No 910/2014 of the European Parliament and of the Council of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC (eIDAS Regulation)

36 Ibid.

37 Ibid.

Blockchain can be used to **register digital credentials**, thereby enabling the immediate verification and validation of these credentials and, at the same time, reducing bureaucratic procedures for education institutions, employers, graduates and jobseekers.[38] Indeed, further cross-border use cases for blockchain supported procedures complementing mutual recognition programmes regarding product compliance, services or professional qualifications could be on the table **removing unnecessary obstructions to the free movement of goods and services**.

Therefore, blockchain technology presents opportunity to transform trade within CEFTA to become more efficient and transparent. These include border procedures, transportation and logistics, the tracking of goods[39], or certifying professional credentials.

Some of the key issues which need to be addressed, however, in order to successfully implement blockchain into international trade are interoperability, regulatory issues, governance, data protection, and lack of knowledge outside the blockchain space.

That being said, interoperability, governance or regulatory challenge can be lesser the issue in initiatives involving fewer mutually comparable trading partners given that distributed ledger can be shared (and underlying blockchain consensus reached) between few compatible peers/administrations as the case may be with CEFTA.

> *AGREED AND SHARED BLOCKCHAIN SOLUTIONS BY THE NATIONAL CEFTA AUTHORITIES COULD CREATE A SINGLE POINT OF VALIDATION OF TESTS, CERTIFICATION, OF CEFTA ORIGIN, ETC. WITHOUT NEED OF THE PHYSICAL VERIFICATION BY EACH OF THEM (PAPERLESS TRADE).*

POTENTIAL USE CASES FOR BLOCKCHAIN-SUPPORTED POLICIES IN CEFTA

Trust can be very hard to engineer and to guarantee between sovereign foreign entities. As explained, the distributed/shared ledgers and underlying blockchain tech is capable of building trust between entities over their records/entries with disintermediation on the basis of the agreed consensus. In other words, the distributed ledger is a consensus of replicated, shared, and synchronized digital records that can be geographically spread across multiple sites, economies, or institutions as immutable and time-stamped data.

That said, CEFTA partners are uniquely placed to build the mutual trust in data generated by their authorities/institutions/undertakings/citizens comparably faster due to the simple fact that they share common economic and political agendas, borders, institutional traditions, problems and, not least, the free trade agreement.

Indeed, CEFTA, Regional Economic Area and CRM initiatives can be seen as shared platform for building trust in records produced by CEFTA parties.

Translated into the CEFTA's inter-agency context the agreed blockchain solutions may provide for **disintermediated cross-border authentication of trade-related documents** that eliminates (some of) the NBTs and associated costs of doing business generated by their physical verification by competent authorities.

Certainly, a distributed ledgers shared by the national CEFTA authorities could facilitate validation that certain procedures have been done (for example testing, certification, proof of CEFTA origin, etc.) without need of the physical verification of the fact by each of the authority involved.

38 European Commission, Blockchain Now and Tomorrow - assessing multidimensional impacts of distributed ledger technologies – Excecutive Summary (Europen Commission, Joint Research Center, July 2019) p. 11.

39 The Policy Environment for Blockchain Innovation and Adoption 2019 OECD Global Blockchain Policy Forum Summary Report (OECD, 2019) p. 26.

In particular, the blockchain could be used to build digital infrastructure facilitating technological enforcement of the CEFTA/CRM initiatives such as:

- paperless trade and *one stop shops* for CEFTA clearance of goods,
- mutual recognition of national conformity assessment procedures,
- automated acceptance of certificates and testing results, licenses, diplomas, etc.

In other words, CEFTA could explore potentials for creation of inter-agency **common authorization schemes** that run on the blockchain protocols agreed by national authorities, economic operators and other actors.

EXAMPLES OF CEFTA/ CRM POLICY AREAS FOR INITIAL PILOTING OF BLOCKCHAIN TECHNOLOGY

In many cases, there are legitimate alternatives to blockchain and weighing the benefits of the technology to the specific use case is very important. That said, it is important in every use case to consider whether the benefits are uniquely linked to blockchain, or whether they could be accomplished by simpler digitalisation strategies for existing processes.

Therefore, the Innovative Policy Proposal does not argue that DLTs and the underlying blockhain tech is a substitute or solution to each and every problem identified by MAP REA objectives and CRM 2021-2024 Action Plan.

However, the CEFTA parties are advised to explore the potential of the blockchain technology to aid to CEFTA/CRM facilitation initiatives involving inter-agency processing of shared data such as permits, certificates, proof product origin, etc.

By way of an example, following CEFTA/CRM areas could be probed as candidates for initial small-scale implementation:

- consolidating good practices set up within Western Balkans and capitalizing it in view to ensure an (almost) free flow of goods within the WB in line with the CRM objectives (the **"Green Corridor" initiative"**). For example, obstacles identified by parties to the growth of the "green lane" concept[40] from current sanitary emergency to permanent practice could be tackled through employment of blockchain *zero-proof protocols*;[41]
- expand and improve CEFTA Risk Management and systematic exchange of electronic data (SEED) to all agencies involved in clearance of goods. Investigating blockchain solutions for ***paperless trade* of goods with CEFTA origin**. Exploring potential of DLTs to tackle redundancy in the proceedings at the borders by developing shared programmable collaboration platforms for clearance of goods with CEFTA origin prior to arrival to CEFTA internal borders, thus, extending CEFTA pre-information systems (CEFTA SEED - Systematic Exchange of Electronic Data) to all products;
- substituting analogous with digital and programmable interagency collaboration based on DLTs tech in the context of **Integrated Border Management pillars**, **setting up of one stop shop**, mutual recognition of risk controls, mutual recognition of border documents, leading to more efficient workflows and shortened processing (certification and licensing, document and cargo integrity, and customs procedures, etc.);
- facilitating the application of **rules on cumulation of CEFTA origin**, implementation of duty drawback or any other initiative to simplify and facilitate customs procedures and reduce, as far as possible, the formalities imposed on trade by employment of the blockchain technology;
- employment of blockchain to facilitate traceability of goods in relation to **risk management strategies** in particular supply chains (moving checks and controls from borders – risk management approach);
- creating digital space of trust for **mutual recognition of industrial products** (in areas both within and outside MRPs) and employment of blockchan solutions in **SPS**[42] matters;
- improving **mutual trust in authenticity of trade-related documents** issued by CEFTA parties, their institutions (education) or accredited private entities (certificates and testing results for industrial and agricultural products, professional qualifications; licenses in tourism, selected financial services and other key services sectors);
- creating **digital trust in authenticity of scientific credentials** to enable free mobitility of researchers throughout CEFTA area;
- **fighting financial exclusion of the CEFTA SMEs** (explore potential of decentralized finance (DeFi)[43], eliminate regulatory prejudice and distrust in DeFi, encourage employment of yields from DeFi into real economy – capital cross-border investments, capital movement)[44], etc.

40 The Green Corridors/Lanes within Western Balkans were established at the beginning of the COVID-19 outbreak to prevent shortages of essential goods and medical equipment. https://cefta.int/news/traders-carrying-essential-goods-to-benefit-of-prioritized-passage-throughout-the-western-balkans/

41 In cryptography, a zero-knowledge proof or zero-knowledge protocol is a method by which one party (the prover) can prove to another party (the verifier) that a given statement is true, without conveying any information apart from the fact that the statement is indeed true.

42 Sanitary and Phytosanitary (SPS) measures.

43 Decentralized Finance is a blockchain-based form of finance that does not rely on central financial intermediaries such as brokerages, exchanges, or banks to offer traditional financial instruments, and instead utilizes smart contracts on blockchains (source: https://en.wikipedia.org/wiki/Decentralized_finance).

44 "There is currently a $1.5 trillion gap between the market demand and supply of trade finance, with a particular impact on Small and Medium Businesses, which are the prime catalyst of financial inclusion in wider society. This gap may rise to $2.4 trillion by 2025 – unless supply chains can find a different way of channelling funds to meet demand. New digital technologies offer that alternative, especially blockchain. Bain predicts that blockchain could help reduce as much as $1.1 trillion of this trade finance gap over the next decade." (source OECD: https://oecdonthelevel.com/2020/01/22/how-the-oecd-can-release-the-power-of-blockchain/)

INNOVATIVE POLICY PROPOSAL

The potential opportunities and challenges of deploying blockchain technology are strongly related to context, application or sectorial issues. That is why CEFTA is advised not to develop solutions looking for problems, but instead to look carefully for existing or foreseeable problems and possible blockchain solutions.

While it may appear that, blockchain technology lacks a sufficiently proven and robust use cases in the public sphere, *to sleep on* the DLTs potential, in a world with geo-political turbulence and trade headwinds, can generate lofty opportunity costs for CEFTA economies.

Certainly, as an emerging technology, blockchain requires the multiplication of use cases to test its added value in specific applications and sectors. Piloting and experimentation spaces are needed and it must bring together a diversity of stakeholders from competent authorities, universities, research centers, industry, SMEs and start-ups. That being said, in every use case explored it is vital to consider whether the benefits sought are uniquely linked to blockchain, or whether they could be accomplished by simpler digitalisation strategies.

The implementation of CRM 2021-2024 Action Plan remains within the realm of responsibility of public institutions in each of the CEFTA parties, however, CEFTA Secretariats together with Regional Cooperation Councils are leading regional organisations facilitating the implementation of the Action Plan

Indeed, if blockchain is to be one of the transformative technologies of our time CEFTA role is to make sure that governments and other stakeholders are ready to explore opportunities and to help them to avoid pitfalls of innovation.

For a start, CEFTA can make a difference by providing the big picture.

That said CEFTA should consider following steps:

launch an ongoing **CEFTA dialogue on blockchain tech use cases** in CEFTA/CRM engaging governments, experts, blockchain industry, business community, think tanks, civil society, etc

to propose to the CEFTA parties devising of a **Blockchain Task Force** in charge of investigating viable, valuable, and vital cases for employment of blockchain supported solutions in the CEFTA/CRM context and identifying regulatory/ administrative obstacles for their use

develop **CEFTA Blockchain road map** with clear value proposals developed on the basis of results of the CEFTA dialogue and Blockchain Task Force reports

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