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Advisory Group on Advanced Technologies

Overview of Activities Related to the Advisory Group on Advanced Technologies in 2020

Summary

This report provides a summary of the major activities conducted by the Advisory Group on Advanced Technologies in Trade and Logistics, namely the first and the second sessions of the advisory group, the publication of a report on the impact of the COVID-19 outbreak on international trade and logistics, virtual conferences on the role of advanced technologies in overcoming COVID-19 disruptions in international trade, and progress in the working areas of the advisory group.

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I. Introduction

1. Technology is evolving faster than ever before in human history. Several cutting-edge technologies reached their breakout points that are redefining interactions between the physical and virtual world, driving disruption and enabling new business modes. The importance of technological innovation is recognized by the international community in Sustainable Development Goal (SDG) 8: Promoting economic growth; SDG 9: Fostering innovation; and SDG 17: Revitalizing global partnership for sustainable development.

2. Advanced technologies such as blockchain and distributed ledger technology (DLT), artificial intelligence (AI), the internet of things (IoT), quantum computing, edge and fog computing, the fifth generation of mobile networks (5G) and other connectivity-related technologies, hold significant promise for trade facilitation. Given these cutting-edge developments in technology, it becomes important to keep up to date with the latest trends to evaluate which trends and approaches may be viable for future development, investment, and practical implementation.

3. With the significant advantages that technology developments can deliver, there also come possible risk and challenges. Importantly, there is the need to address the existing, and avoid further intensification of, the digital divide, which the world is facing in multiple dimensions – technological, economic, social and educational. During the high-level meeting on Generation Unlimited — Connecting Half the World to Opportunities, United Nations Secretary-General Antonio Guterres stated *“I firmly believe that education and digital technology are two of the most important investments we can make, as we respond to COVID-19 and lay the foundations for a strong recovery and the achievement of the Sustainable Development Goals. This could be the greatest equalizer and enabler of our times. We have a generational opportunity to reimagine education for the fourth industrial revolution, through the development of modern, relevant curricula and skills.”*¹ As policy makers and stakeholders strive to reap the benefits of advanced technologies, it remains important to close the digital divide between and within countries and stakeholders.

4. Advanced technologies also bring new challenges, among others in the fields of competition, interoperability, ethics, data privacy and security. International cooperation is essential for meeting such novel challenges. Regional or international platforms, such as the United Nations Economic Commission for Europe (UNECE) can offer important contributions, e.g. by providing a platform for policy dialogue, information and knowledge sharing and capacity building. Key areas to be addressed include: promoting interoperability, addressing ethical, technical and security challenges, ensuring continuity and uniformity, fostering accessibility of information. Multi-stakeholder engagement can support efforts to build consensus, confidence and trust, all of which are essential for reaping the full potential of technology developments for sustainable economic growth, while avoiding inequality within and between nations.

II. First session of the Advisory Group on Advanced Technologies in Trade and Logistics

5. The Advisory Group on Advanced Technologies in Trade and Logistics (AGAT) held the group’s first session on January 30, 2020, in Geneva, Switzerland. The secretariat presented the “Annotated provisional agenda”² for the meeting, that was approved as proposed. The secretariat announced that it had received a candidature for the chairmanship

¹ <https://www.un.org/press/en/2020/sgsm20225.doc.htm>

² AGAT/2020/INF.1

of the group from the Italian delegation and a candidature for vice chair from the Slovenian delegation. The advisory group appointed by acclamation Mr. Quintarelli as chair and Ms. Dokuzov as vice chair. The newly appointed chair presided over the rest of the meeting.

6. The event was divided into three sessions to assess and discuss the role of advanced technologies in international trade: Session 1: The role of technology in reimagining future supply chains; Session 2: How to handle digital information and technologies for value chains; and Session 3: Obstacles, challenges and lessons learned.

7. The 2020-2021 “Programme of Work of the Advisory Group on Advanced Technologies in Trade and Logistics”³, detailing the scope, objectives, activities, work areas, guiding principles, governance, and funding of the advisory group was discussed, amended, and approved. The draft Vision and Mission Statements of the Advisory Group on Advanced Technologies in Trade and Logistics⁴, summarizing the overall goals and the methods by which to achieve them were discussed, amended, and approved.

8. It was suggested that the themes of identity, interoperability, security, and trustworthiness be identified as key areas of work for future reflection. There was also a suggestion to put out a call for ideas to be circulated to determine future technology trends.

9. The Report of Advisory Group on Advanced Technologies in Trade and Logistics on its First Annual Meeting⁵ was prepared by the secretariat.

II. The impact of the COVID-19 outbreak on international trade and logistics and the ways advanced technologies can help overcome such disruptions

10. At the beginning of the pandemic, the AGAT created a questionnaire which was circulated among the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) expert community. This questionnaire focused on ways advanced technologies can help overcome trade disruptions caused by COVID-19. Based on an analysis of the submitted answers, AGAT prepared the “Report on the impact of the COVID-19 outbreak on international trade and logistics and the ways advanced technologies can help overcome such disruptions”⁶.

11. This report highlights key areas of focus to mitigate impacts in similar situations of global pandemic and the disruptions that can result from country-wide lockdowns. Papers published by other international organizations and scientific communities on the economic impact of COVID-19 were also considered.

12. The report provides an analysis of the feedback AGAT received while conducting the survey and is focused on the impact of the COVID-19 outbreak on international trade and logistics and how advanced technologies can help in these scenarios.

13. Results indicated the following areas of focus:

- Digital platforms: Better implementation and utilization of digital platforms can enhance supply chain and logistics information exchange and support business continuity and innovation.

³ ECE/TRADE/C/CEFACT/2020/18

⁴ AGAT/2020/INF.3

⁵ ECE/TRADE/C/CEFACT/2020/19

⁶ ECE/TRADE/C/CEFACT/2020/5

- Digital products: The development and implementation of digital products and use cases that are interoperable across borders can facilitate new needs arising due to COVID-19.
- Interoperability: Strong engagement of the cross-border interoperable ecosystem in creating, reviewing, and adopting standards and policy frameworks can enable the revitalization of global social and economic processes.

14. As a follow-up to the publication of this report, AGAT organized a virtual conference on 2 July 2020, divided into three sessions aligned with the main findings from the AGAT report: Session 1: Digital platforms; Session 2: Digital products; and Session 3: Standards and interoperability. This event gathered online more than 100 UN/CEFACT experts from all around the world to discuss how advanced technologies can help overcome trade disruptions caused by the recent COVID-19 pandemic.

15. It is well known that the current pandemic has had a tremendous effect on trade and cross-border trade. The COVID-19 pandemic and its trade disruptions can be addressed, and the impacts mitigated, through application of advanced technologies such as blockchain technology, IoT, AI, quick response (QR) codes, and digital applications because these technologies promote a contactless way of working and protecting involved actors while creating conditions, where trade can continue to flow.

16. A report on the online conference on the "Role of Advanced Technologies in overcoming COVID-19 disruptions in international trade"⁷ was prepared by the secretariat.

III. Second session of the Advisory Group on Advanced Technologies in Trade and Logistics

17. The second session of AGAT was held on the 25 November 2020, as a virtual event, focusing on the main topic of "Technologies supporting the circular economy in achieving the United Nations SDGs". The speakers presented use cases and research that showcased that advanced technologies such as blockchain technology, IoT, AI and others can extend the life expectancy of products and incentivize their recycling back into global value chains. These technologies can also encourage the creation of business cases and solutions that promote the circular economy model.

18. The secretariat presented the "Annotated provisional agenda" for the meeting, which was approved as proposed⁸. The event was divided into five sessions to assess the application of advanced technologies in specific use cases and the promotion of the circular economy. These sessions corresponded with the circular economy models: Session 1: Trade and logistics; Session 2: Traceability of value chains; Session 3: Sustainable procurement; Session 4: Waste management; and Session 5: Standards and regulatory frameworks. The core of the discussion proposed utilization of advanced technologies as a way forward to promote safer, greener, more efficient and sustainable international trade. Advanced technologies can help make trade contactless, paperless, innovative, trustable, automated, and efficient, and help to avoid challenges arising from lack of transparency, lack of personnel, and limited information exchange.

19. The discussions also pointed out that new technologies can enable safe, secure, reliable, and interoperable data exchange, promote innovation, and enable transparency and traceability in value chains. Advanced technologies can help reduce waste and promote the recycling of products to extend their life and create a circular economy. The circular economy

⁷ ECE/AGAT/2020/INF.6

⁸ ECE/AGAT/2020/INF.7

can help to promote international trade that is sustainable and works towards the 2030 Agenda for Sustainable Development. Through advanced technologies, international trade and logistics can become more circular, which means redefining growth and focusing on positive society benefits. This circular economy entails the gradual decoupling of economic activity from the consumption of finite resources and involves designing waste out of the system through three main principles: design out waste and pollution, keep products and materials in use, and regenerate natural systems.

20. An AGAT report on its second annual meeting and the online conference on "Technologies supporting the circular economy in achieving United Nations SDGs" was prepared by the secretariat⁹.

IV. Progress on the Advisory Group on Advanced Technologies in Trade and Logistics work areas

21. The work of AGAT is a continuous effort due to rapid and ever-changing technological, economic, and social developments. The AGAT programme of work is structured around the following work areas.

22. **Work area 1: technical monitoring, assessment, and advice.** The advisory group monitors and analyses developments, mainly in the areas of blockchain and distributed ledger technologies, in the context of national legal frameworks that recognize different cryptographic assets and their potential uses in international trade and e-business. An area of interest is the potential benefit of establishing mutually recognized protocols, running various types of smart contracts (currently executed in paper or electronic forms) that can reflect the many business needs of actors in international trade. When combined with the benefits that DLT provides (mainly data transparency, record immutability, and automatic smart contract¹⁰ executions) these DLT protocols can leverage international trade relations and open markets to new actors. Another area of great interest is e-business supported by AI and machine learning techniques that allow data analytics and process automation for various scenarios in international trade. There is a need to understand data, their structure and meaning in various machine-learning use cases. Existing semantic-based data models of the United Nations Core Component Library (UN/CCL) could be used to model this data, and this solution will be one of the main focuses of AGAT.

23. As part of technical monitoring, a report¹¹ was prepared by the secretariat on the Conference on Latest Technology Trends Impacting eBusiness Internet Trading and Trade Facilitation - Anticipating the Fourth Industrial Revolution. This conference was held on 3 April 2019 at the Palais des Nations, Geneva, Switzerland in conjunction with the UN/CEFACT Forum and the United Nations Conference on Trade and Development (UNCTAD) eCommerce Week.

24. **Work area 2: implementation challenges and good practices.** The advisory group is monitoring current implementation challenges among private and public sector actors in international trade. The key challenges to the widespread adoption of advanced technology systems are insufficient knowledge sharing (including education and legal recognition uncertainty) and, in some locations, insufficient technical infrastructure.

25. **Work area 3: support strategic dialogue with key external stakeholders.** The secretariat has established a website dedicated to AGAT activities that aims to gather all

⁹ ECE/TRADE/C/CEFACT/2021/18

¹⁰ A smart contracts is a computer program or a transaction protocol, that automatically execute once a set of agreed conditions are met

¹¹ ECE/TRADE/C/CEFACT/2020/INF.7

materials from the group's events, documents, and any other relevant materials such as background documents related to the topic of advanced technologies in trade and logistics. The website is available at <https://unece.org/trade/uncefact/AGAT> and the secretariat plans to regularly update and enhance its content to serve as the AGAT presentation and knowledge hub on the topic of advanced technologies. The advisory group has also established an open dialog with the United Nations Commission on International Trade Law (UNCITRAL), the International Telecommunication Union (ITU), and the World Food Programme (WFP) on the topic of analysing and implementing advanced technologies to support the United Nation's SDGs, as well as the Liechtenstein Unit for Financial Center Innovation and numerous private entities developing, implementing and offering services and solutions based on advanced technologies, which AGAT invites to provide testimony and knowledge to the UN/CEFACT experts community.

26. **Working area 4: proposals for new development.** The advisory group is monitoring relevant ongoing project developments within UN/CEFACT to identify and assist with new project proposals and to provide expert knowledge and consultations for ongoing project activities.
