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Recovering from COVID-19 in an increasingly digital economy: Implications for sustainable development

Note by the UNCTAD secretariat

Summary

In the present note, the role that digitalization has played during the (coronavirus disease) COVID-19 pandemic is addressed. Indeed, digital technologies have been critical in addressing the health and economic crisis and enabling resilience. The challenges faced in harnessing digital solutions to cope with the pandemic are discussed, and lessons to be learned from policy responses are highlighted. Ways in which digitalization can function in recovery, for inclusive and sustainable development and development of resilience against potential future shocks, are also explored. It is critical to strengthen international cooperation for digitalization that works for a better future.

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Introduction

1. Members of the Trade and Development Board decided, through a silence procedure that ended on 13 October 2021, that the focus of the fifth session of the Intergovernmental Group of Experts on E-commerce and the Digital Economy should be on the topic, "Recovering from COVID-19 in an increasingly digital economy: Implications for sustainable development".

2. Since the outbreak of the coronavirus disease (COVID-19) pandemic, millions of people have lost their lives due to the pandemic, causing immense human suffering. The global health emergency led to the deepest global economic crisis since the Great Depression of the 1930s. The pandemic has exposed how unprepared countries, including the wealthiest, are for unexpected shocks. It has also highlighted significant differences among developed and developing countries in the macroeconomic policy space available to react, as well as in their levels of digitalization.

3. Although the global economy recovered in 2021, the pandemic resulted in millions of jobs lost, put millions of livelihoods at risk and significantly increased poverty.[1] Moreover, the recovery has been uneven across regions, sectors and individuals at different levels of income and plagued by uncertainty.

4. As of January 2022, the end of the pandemic was not yet in sight. In many countries, the number of new cases was rising at an alarming rate. While much uncertainty remains about how and when the pandemic will run its course, the unprecedented economic shock has already sharply exposed the global economy's pre-existing weaknesses, severely affecting development prospects around the world. This represents an enormous setback for development aspirations and for the Sustainable Development Goals, which had already been challenging to achieve.

5. Some changes that had begun to take shape in the world before 2020 now stand out starkly in light of the pandemic. For instance, trust in multilateralism had already been fading, climate change had become a more present and pervasive concern, and rapid digital transformation was already well under way. These interconnected global transformations have been underpinned by the challenge of rampant inequality. Indeed, increased inequality was already a factor behind the 2008 financial and economic crisis, and inequality continued rising in the crisis' aftermath. The pandemic has further contributed to exacerbating global inequalities,[2] a trend that is increasingly unsustainable.

6. The spread of the pandemic continues to disrupt economic and social life around the world. Its impact is asymmetric and tilted towards the most vulnerable, both within and across countries. The crisis has highlighted how people who can participate in the digital economy continue to work, trade and access basic services. Businesses, consumers and Governments that were able to "go digital" have been better positioned to mitigate the economic downturn. This allowed for some resilience and sped up a digital transition, which will have lasting impacts on societies and the daily lives of people, for which not everyone is prepared. Digital technologies have also deeply impacted social and economic behaviours during the crisis and created new opportunities as well as challenges. It has also become even more evident how people who are excluded digitally can be left behind. The pandemic has accelerated the process of digital transformation and added urgency for Governments to respond, including through international cooperation.

7. Against this backdrop, in chapter I of this note, the role of digitalization during the pandemic is examined; in chapter II, the challenges faced in harnessing digital solutions to cope with the pandemic are discussed; in chapter III, lessons to be learned from policy

[1] For a detailed account of the economic impacts of the pandemic, see UNCTAD, 2020a, *Impact of the COVID-19 Pandemic on Trade and Development: Transitioning to a New Normal* (United Nations publications, Sales No. E.20.II.D.35, Geneva).

[2] See, for instance, Chancel L, Piketty T, Saez E and Zucman G, coordinators, *World Inequality Report 2022*, World Inequality Lab.

responses to the pandemic are presented; in chapter IV, post-pandemic recovery and digitalization are addressed; and the role of international cooperation on the way forward and towards digitalization for sustainable development is highlighted in chapter V.[3]

8. This note is based on the following guiding questions, as decided by member States:

- What is the role of digitalization during the coronavirus disease pandemic and during recovery in countries at different levels of development?
- What have been the challenges faced in harnessing digital solutions to cope with the pandemic?
- What are the lessons to be learned from policy responses?
- Moving forward, what is the role of international cooperation?

I. The role of digitalization during the pandemic

9. Developed and developing countries alike have been negatively affected by the health and economic crisis triggered by the pandemic, though with considerable differences, both between and within countries. The economic and social impact is particularly severe in structurally weak developing countries, such as those in Africa, the least developed countries and small island developing States, because of both their higher susceptibility to shocks and lower capacity to respond and adjust. Within countries, the crisis has had disproportionate consequences on the most vulnerable and disadvantaged groups – such as low-income households, migrants, informal workers and often women – and economic sectors, such as microenterprises and small and medium-sized enterprises and tourism. The most affected countries, groups and sectors are also characterized by low levels of readiness to engage in and benefit from electronic commerce (e-commerce) and the digital economy.

10. Digitalization has allowed for some mitigation of the effects of the pandemic, helping to combat the virus and ensuring continuity of many economic activities. Lockdowns and other preventive measures that Governments have put in place to curb the spread of the virus have disrupted economic activity in ways for which societies were largely unprepared. Following social distancing and restrictions on movement, individuals, businesses and Governments increasingly "went digital". Amid slowing economic activity, the pandemic led to a surge in e-commerce and accelerated digital transformation. While this transformation was already taking place rapidly prior the pandemic, the situation served as a catalyser of digitalization.

11. Digital technologies have been critical in both health- and non-health-related responses to the crisis. Digital and data science tools have been essential for epidemiological monitoring and contact tracing, the maintenance of physical distancing and telehealth. Epidemiological modelling for pandemic preparedness, response and prevention requires innovative data collection, sharing and analysis to create predictive models that forecast the spread of the virus.

12. Many people have been able to continue, to the extent possible, with their activities through online channels – for example, for working, schooling, communicating, buying or entertainment. In many places, people are relying on teleworking and teleconferencing tools. More consumers are shopping online, and more people rely on use of the Internet for news, information and entertainment.

[3] This note draws heavily on UNCTAD, *Digital Economy Report 2021: Cross-Border Data Flows and Development: For Whom the Data Flow* (United Nations publication, Sales No. E.21.II.D.18, Geneva), which includes the corresponding sources of data and references, unless otherwise indicated.

One notable shift in consumer behaviour is evidenced by a rapid expansion of e-commerce. Lockdown measures have triggered an exponential increase in online transactions. People have turned to digital platforms to shop online, with the global share of online retail sales of total retail sales rising from 16 to 19 per cent in 2020.[4] Strong uptake of e-commerce was generalized across regions, with consumers in emerging economies making the greatest shift to online shopping. Latin America's online marketplace, Mercado Libre, for example, sold twice as many items per day in the second quarter of 2020 compared with the same period the previous year. The African e-commerce platform Jumia reported a 50 per cent jump in transactions during the first six months of 2020.[5] 14.

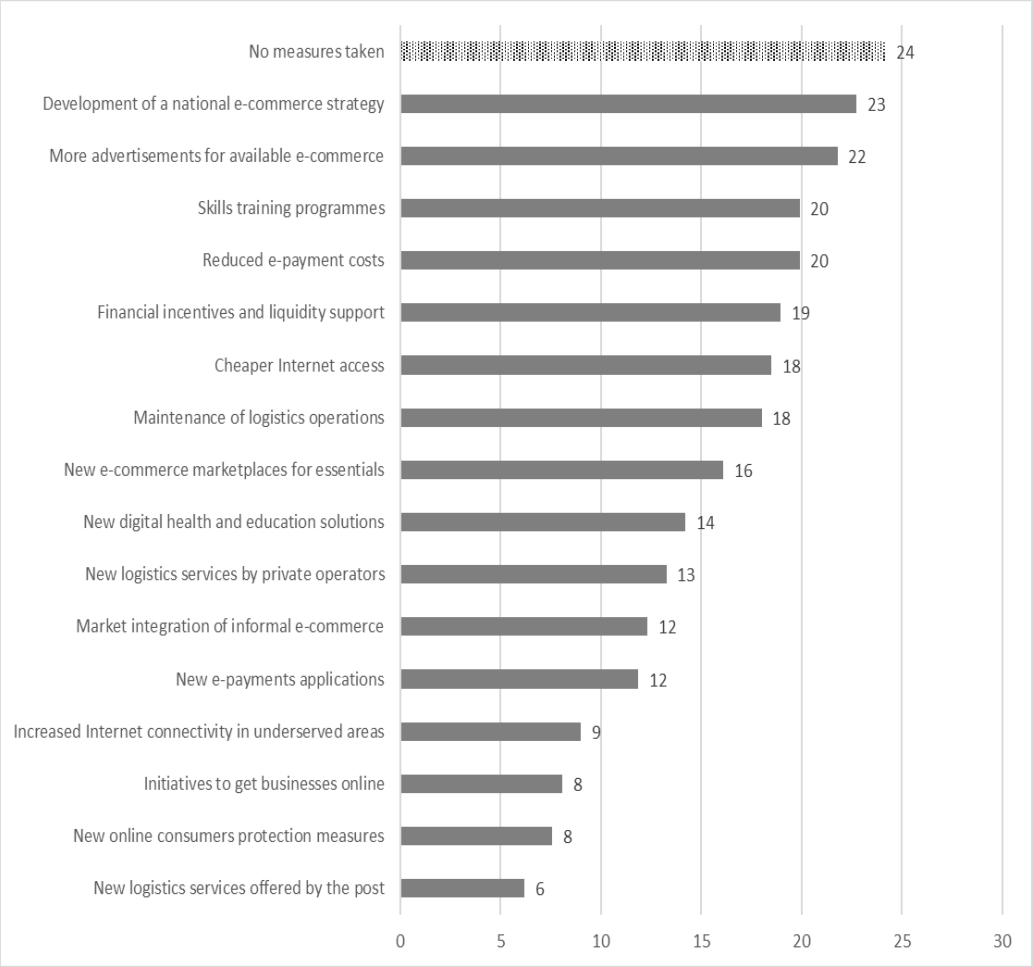
14. Governments have also gone increasingly digital in implementing measures to fight the virus and to cope with its disruptions and economic impacts. These range from emergency measures to provide relief, such as social protection, safety nets or support for businesses activity continuation, to medium- and long-term stimulus and digitalization measures for recovery and structural digital transformation that works for development and builds resilience for future shocks, as will be developed further below.[6] Examples of digital tools used by Governments include the UNCTAD Automated System for Customs Data programme for customs management and the UNCTAD digital government platform, eRegistrations, to continue providing essential services to small and medium-sized enterprises through online single windows. In the figure in this note, results are presented from an UNCTAD survey on measures taken by Governments or businesses in selected developing countries that have benefited from eTrade readiness assessments and other forms of technical assistance.

[4] See UNCTAD, 2021a, Global e-commerce jumps to $26.7 trillion, COVID-19 boosts online sales, 3 May.

[5] See UNCTAD, 2021b, *COVID-19 and E-commerce: A Global Review* (United Nations publication, Sales No. E.21.II.D.9, Geneva).

[6] On health-related measures, see, for instance, the Centers for Disease Control and Prevention, Guide to global digital tools for COVID-19 response, available at https://www.cdc.gov/coronavirus/2019-ncov/global-covid-19/compare-digital-tools.html (accessed 16 February 2022). Measures to contain the virus can also be found as reported by Privacy International on its platform, Tracking the global response to COVID-19, available at https://privacyinternational.org/examples/tracking-global-response-covid-19 (accessed 16 February 2022). The global digital development policy response database of the World Bank is also available at https://dataviz.worldbank.org/views/DD-COVID19/Overview?:embed=y&:isGuestRedirectFromVizportal=y&:display_count=n&:showAppBanner=false&:origin=viz_share_link&:showVizHome=n. (See also, World Bank, 2020, COVID-19: We're tracking digital responses worldwide. Here's what we see, available at https://blogs.worldbank.org/digital-development/covid-19-were-tracking-digital-responses-worldwide-heres-what-we-see). The Department of Economic and Social Affairs of the United Nations also published, in 2020, *Compendium of Digital Government Initiatives in Response to the COVID-19 Pandemic* (Sales No. E.20.II.A.5, New York). See also, International Telecommunication Union, COVID-19 response and recovery, available at https://www.itu.int/en/Pages/covid-19.aspx (accessed 7 February 2022).

E-commerce and digital economy related measures in selected developing countries
(Percentage)



Source: UNCTAD, 2020b, COVID-19 and e-commerce: impact on businesses and policy responses, available at https://unctad.org/system/files/official-document/dtlstictinf2020d2_en.pdf.

Notes: Reflects the most important measures taken during the COVID-19 crisis. Based on 211 responses to the survey question, "Since the outbreak of the COVID-19 crisis, which governmental or private-sector measures, if any, have been most important to facilitate your e-commerce business?" Respondents were able to select a maximum of five measures.

15. As most activities increasingly took place online, the pandemic had a dramatic impact on Internet traffic. Global Internet bandwidth use rose by 35 per cent in 2020, a substantial increase over the 26 per cent growth of the previous year. Driven largely by the response to the pandemic, this represented the largest one-year increase since 2013. The resilience of the Internet has proven remarkable in the face of the sudden changes associated with the pandemic. Many network operators have been accelerating plans to add capacity to stay ahead of demand. By other accounts, in 2020, 64.2 zettabytes of data were created or replicated, defying the systemic downward pressure asserted by the pandemic on many industries; the pandemic's impact will be felt for several years.

16. The available information also suggests that international bandwidth use accelerated during the pandemic, and that such traffic is geographically concentrated in two main routes: between North America and Europe, and between North America and Asia.

17. Moreover, the pandemic has highlighted the increasingly key role of the "Internet of things". Some "Internet of things" applications that aided in fighting the pandemic, by providing critical data, include connected thermal cameras, contact-tracing devices and health-monitoring wearables. Temperature sensors and parcel tracking have helped ensure that sensitive vaccines are delivered safely.

18. Digital technologies also appear to have played an important role in supporting broader international trade in 2020. The strong impetus for adopting digital tools helped drive a 6 per cent increase in worldwide exports of information and communications technology (ICT) services. Digitally deliverable services reached nearly 64 per cent of total services exports. While total services exports declined by 20 per cent (an unprecedented drop since records began in 1990), exports of digitally deliverable services fell by only 1.8 per cent. This reflects an increasing reliance on digital delivery to continue services' trade despite the restrictions on movement implemented due to the pandemic. While the export share of digitally deliverable services increased in all regions, and there was a 14-percentage point increase across developing regions, the increase was only 10 percentage points in Africa and 6 percentage points in the least developed countries.[7]

19. Trade in ICT goods, which had declined before the pandemic, also appears to have been boosted. Against a backdrop of sharply declining merchandise trade, the share of ICT goods in merchandise imports increased from around 13 per cent in 2019 to nearly 16 per cent 2020 – the greatest annual increase since records began in 2000.[8] The pandemic is likely to have helped to drive this by incentivizing purchases of desktop computers and laptops, more suited to teleworking than communications devices such as smartphones, as well as peripherals such as screens, speakers, keyboards and mice that can aid in working from home.

20. The boom in the use of digital solutions also boosted demand for semiconductors, at a time when the global value chain was experiencing difficulties, resulting in a shortage of supply. The semiconductors market has been negatively affected by the disruption of global value chains, due to the pandemic. Semiconductors are also a major factor in the geopolitical dynamics connected to digital technology developments. In 2021, the semiconductors scarcity situation deeply affected production of and trade in other goods.

21. Overall, consumers, businesses and Governments that have been able to "go digital" could help mitigate the economic downturn caused by the pandemic. "Going digital" has sped up a digital transition that will have lasting impacts on societies and the daily lives of people, for which not everyone is equally prepared.

II. Challenges faced in harnessing digital solutions to cope with the pandemic

22. While digitalization has allowed mitigation of the health and economic impacts of the pandemic, many challenges have been encountered in harnessing digital solutions. The first and most notable is that individuals, businesses and countries are unequally equipped to cope with the pandemic. The most vulnerable are confronted with more limited capacities to benefit from the digital economy. Digitalization is uneven both across and within countries. The data-driven digital economy is characterized by major power imbalances and inequalities, which have been reinforced during the pandemic, thereby accentuating overall trends in inequality.

23. The pandemic put a spotlight on connectivity and usage divides. As people reacted to lockdown measures by increasingly connecting to the Internet, those countries and sectors within countries lagging behind in terms of connectivity found higher difficulties in coping with the pandemic. Although there was an upsurge in e-commerce around the world, many smaller businesses in developing countries struggled to go digital and meet the growing demand for online sales. Similarly, women have not been able to capitalize on digitalization, as the pandemic has exposed significant existing gender digital divides,

[7] See UNCTAD, 2021c, Trade data for 2020 confirm growing importance of digital technologies during COVID-19, 27 October, available at https://unctad.org/news/trade-data-2020-confirm-growing-importance-digital-technologies-during-covid-19; UNCTAD, 2021d, Technical note on ICT for development no. 19, Impacts of the COVID-19 pandemic on trade and the digital economy.

[8] See UNCTAD, 2021e, Pandemic drives ICT goods trade rebound but steep declines occur in least developed countries and Africa, 2 November, available at https://unctad.org/news/pandemic-drives-ict-goods-trade-rebound-steep-declines-occur-least-developed-countries-and.

particularly in the least developed countries.[9] Policy dialogues in the context of eTrade for Women masterclasses during the pandemic have highlighted that women entrepreneurs have been especially hard hit.[10]

24. Digital infrastructure is in many parts of the world still insufficient, leading to limited or unaffordable connectivity to undertake effective e-commerce and other online activities. According to the most recent data from the International Telecommunication Union, 96 per cent of the 2.9 billion people still offline live in the developing world.[11] The most vulnerable populations are usually the ones left offline. As a result, countries differ strongly in levels of e-commerce and digitalization uptake, affecting opportunities to benefit from the increasing demand for e-commerce and other digital services.

25. Moreover, with school closures, uneven access to online home schooling and economic pressure on families, progress in education, especially for girls, may experience an enormous setback. This will have strong negative impacts on the productive capacity of countries well into the future.

26. Differences in the levels of readiness to engage in and benefit from the data-driven digital economy are seen in connectivity and data infrastructure, digital entrepreneurship and skills, as well as in availability of financial resources and institutional capacities for digital transformation. The shortage of appropriate skill sets in Governments can result in insufficient representation of technical and analytical expertise in legislative and regulatory framework development processes. This hampers the ability of Governments to identify opportunities that could be afforded by digital technologies and potential risks and threats that could emerge, as well as ways to regulate them. Moreover, limited market size reduces the possibility of economies of scale and scope. In most cases, Governments do not have large numbers of constituents demanding that policymakers develop rules to govern the data-driven digital economy.

27. As a result, most developing countries have limited capacities to digitalize and process their data into digital intelligence; the least developed countries are particularly challenged. This affects their capacity to use digital tools to cope with the pandemic. Countries with lower levels of development also suffer from losing their top talent to developed countries and have smaller representation in setting up the global policy debate, contributing further to the growing global inequality.

28. Value creation and capture from data require availability and affordability of connectivity and data-related infrastructure for data to flow, as well as skills, resources and linkages with the rest of the economy, and support through appropriate regulation and policies. As data sharing is critical for the implementation of measures to cope with the pandemic, countries with limited capacities to turn data into digital intelligence and business opportunities, and to use them for economic and social development, are at a clear disadvantage. There are therefore significant capacity challenges at an individual, firm and policy level to ensure that developing countries are not just sites of data collection, but also equipped to capture developmental value from data.

29. In the case of e-commerce in particular, in many of the world's poorest economies, consumers and businesses are not able to capitalize on new digital opportunities due to persistent bottlenecks and barriers, such as costly broadband services, overreliance on cash, a lack of digital skills among the population and government inattention. An UNCTAD

[9] See also United Nations Entity for Gender Equality and the Empowerment of Women, 2020, We cannot allow COVID-19 to reinforce the digital gender divide, 6 May, available at https://www.unwomen.org/en/news/stories/2020/5/op-ed-ed-phumzile-covid-19-and-the-digital-gender-divide; G20 Insights, 2020, COVID-19 response strategies, addressing digital gender divides, 2 October, available at https://www.g20-insights.org/policy_briefs/covid-19-response-strategies-addressing-digital-gender-divides/.

[10] See, for example, the UNCTAD eTrade for all initiative, available at https://etradeforall.org/news/etrade-for-women-emasterclass-for-south-east-asia-summary-report/.

[11] See International Telecommunication Union, 2021a, *Measuring Digital Development: Facts and Figures 2021* and International Telecommunication Union, 2021b, *Pandemic in the Internet Age: From Second Wave to New Normal, Recovery, Adaptation and Resilience*, for a detailed analysis on the digital divide and the pandemic.

(2020b) survey of digital entrepreneurs and e-commerce platforms in developing countries highlighted several key obstacles they have been facing during the COVID-19 crisis, though many of the bottlenecks in e-commerce ecosystems in developing countries were already present before the pandemic. Respondents stressed, however, the heightened impact of the crisis on their capacity to invest due to constrained financing for liquidity shortages, on the further exacerbation of limited connectivity and ICT adoption and on consumer protection and fair competition, as well as challenges related to a persistent cash-based and payment-on-delivery culture.

30. Other relevant obstacles and concerns include supply chain and logistics disruptions, Internet affordability and transportation costs, costly broadband services, lack of consumers' trust, poor digital skills among populations and Governments' limited attention to e-commerce disruptions to supply chains and trade logistics, and movement restrictions. Moreover, respondents highlighted the need for improved e-commerce strategies in response to the pandemic. These findings are in line with UNCTAD eTrade readiness assessments carried out since 2017, which emphasize that most of the countries reviewed (mainly the least developed countries) lack comprehensive and inclusive national e-commerce strategies.

31. Risks, arising from pandemic-related acceleration in digitalization, of further exacerbating digital divides, with the least developed countries being left even further behind, have also become evident from the evolution of trade in ICT goods and services. Low levels of digitalization and eTrade readiness are hampering the ability of the least developed countries to engage in digital trade when it has become even more important.

32. Another challenging manifestation of inequality and asymmetries in power imbalances in the digital economy is that, while many developing countries struggle to harness various digital opportunities, the digital shift under the pandemic has further boosted the performance of the leading digital platforms, based mainly in the United States of America and China. Most digital solutions used to cope with various lockdown and travel restrictions, such as e-commerce, teleworking and cloud computing, are provided by a relatively small number of large companies from these countries. These global digital platforms have been able to strengthen their dominant positions while the rest of the economy fell into an economic crisis. They are benefiting from increased demand and have seen their profits and market valuations grow significantly even during the pandemic. Their increased market dominance is intensifying concerns about the distribution of the value created and about consumer protection and fair competition. Some domestic and regional e-commerce players have emerged in parts of the world where the global leaders have hitherto been less active. However, many face challenges when trying to attain economies of scale, and those that manage to grow (e.g. Souq, Lazada and Flipkart in e-commerce) often become takeover targets of global platforms.

33. Indeed, the pandemic has accentuated data-related market power imbalances, as global digital corporations have strongly benefited from accelerated digitalization needs. Overall, the recovery of the NYSE Composite Index in the context of a deep economic crisis points to some disconnection between financial markets and the "real" economy. Most significantly, the remarkable increases in stock prices of leading digital platforms show an even greater disconnection between the digital economy and the real economy. These companies have not only been resilient to the crisis, but their business models and dominance, combined with a strong demand for digital services, have also propelled them to a higher income growth path amid the worldwide economic crisis.[12]

[12] As an illustration, Apple was the first company to reach the $3 trillion market capitalization mark in January 2022, after passing the $2 trillion landmark in July 2020 (see The Verge, 2022, Apple briefly crossed a $3 trillion market cap, 3 January, available at https://www.theverge.com/2022/1/3/22828277/apple-3-trillion-market-cap-company-earnings).

34. The major challenge resulting from all of these digital inequalities, asymmetries and power imbalances, between and within countries, is that huge digital divides that had already existed for many years are only worsening with the pandemic. This is translating into even deeper inequalities that threaten to derail progress on the Sustainable Development Goals.

35. An additional challenge in coping with the pandemic are the significant cases of misinformation and disinformation. The digital world is filled with "fake news", which allow for the manipulation of society and affect democracies. This phenomenon has become highly evident with the pandemic, giving rise to what the World Health Organization has qualified as an "infodemic".

36. Challenges have also emerged from the development and use of digital contact tracing applications. These applications enabled tracing of the contagion and prevention of social contact with people that have the virus. However, they have raised concerns regarding privacy issues and data protection and other human rights.[13] The fact that data can be abused and misused for surveillance and manipulation purposes by the organizations (whether the private sector or Governments) that control them and affect human rights has an effect on the trust of users and limits the potential benefits that may be derived from the data-driven digital economy. Questions regarding respect for human rights have been a factor limiting the use of digital contact-tracing applications to help in fighting COVID-19 contagion. It appears that these applications have been more successful in Asia than in Europe or the United States.

37. Cybersecurity concerns have also been aggravated as more activities moved online. Data breaches have become more prevalent due to cloud computing and increased digital storage. As a result of the pandemic, 2020 was an exceptional year, with industries being severely impacted in every corner of the globe. This eased the way for cybercriminals targeting vulnerable victims in the health care industry, as well as those who were unemployed or working remotely. For example, scams increased by 400 per cent in March 2020, making the pandemic the largest-ever security threat. In 2020, the United States saw the highest average cost of a data breach, at $8.64 million.[14]

38. While all the challenges discussed above were already present in the process of rapid digitalization, they have been further accentuated since 2020 and have affected the potential to harness digital solutions to cope with the pandemic. Policymakers were already struggling to keep pace with the speed of technological advances in an uncertain and fast-evolving context, plagued by numerous unknowns. Thus, an additional overarching challenge is that pre-existing difficulties for policymakers to regulate the data-driven digital economy for development have been compounded by the pandemic as more and more people have relied on the Internet to cope with its effects. Moreover, the task for policymakers is complicated by a deepening interconnection among different global development challenges, including health, inequality, digital transformation and climate change.

III. Lessons to be learned from policy responses to the pandemic

39. The experience to date in accelerated digitalization resulting from policy responses to face the health, social and economic impacts of the pandemic allows the drawing of some tentative lessons on the way forward to recovery and for a long-term digital transformation that works for inclusive and sustainable development. First and foremost, it has made evident the importance of digitalization. The impact of these crises would have

[13] The 2021 report of the Special Rapporteur on the right to privacy (A/76/220) focuses on how pandemics can be managed with respect to the right to privacy. See also the United Nations Global Pulse, 2021, COVID-19 data protection and privacy resources, available at https://www.unglobalpulse.org/policy/covid-19-data-protection-and-privacy-resources/ (accessed 8 February 2022).

[14] See Varonis, 2021, 98 must-know data breach statistics for 2021, 16 April, available at https://www.varonis.com/blog/data-breach-statistics.

been much worse without previous progress in digitalization. Experience has demonstrated that the data-driven digital economy brings significant benefits, but also that it can pose major challenges.

40. Second, the pandemic has taught the world important lessons in relation to policy–data interactions and the potential role that data can play in fighting global crises. Data have become an increasingly important economic and strategic resource, a trend reinforced by the pandemic. Never have people's lives been so dependent on real-time data and technology assistance – from monitoring and controlling the spread of the pandemic, to the manner in which daily activities are carried out (working, shopping, socializing, education, etc.), and the way scientists developed new vaccines in record time.

41. The pandemic has clearly shown the importance of sharing health data globally for coping with its consequences, and for research purposes in finding new vaccines. International sharing of data can also be useful for tackling development challenges that are of a global nature, such as climate change. Using data for addressing these kinds of global challenges would call for enabling data flows across countries. In terms of cross-border data flows, what matters is whether the nature of data as a public good has implications beyond national borders. This implies that data generated in one country can also provide social value in other countries.

42. Third, the pandemic made even more evident the development lags related to the remaining enormous digital divides within and among countries. As the importance of data grows, a data divide is compounding the conventional connectivity divide. In parallel with overall increasing inequality trends worldwide, the pandemic has reinforced concerns that the lack of digital equality may increase inequalities in relation to social and economic opportunities and outcomes.

43. In order to participate in and benefit from the digital economy, countries need to be able to access relevant and affordable communication technologies, which are the basis for the transmission of data, as well as have the capabilities to make productive use of such access. The pandemic has underscored the pressing need to bridge existing divides and boost the capabilities of individuals, businesses and countries trailing in digital readiness. Countries that can harness the potential of e-commerce and digitalization will be better placed to benefit from increasingly digital global markets for their goods and services, while those failing to do so risk falling even further behind.

44. Fourth, the pandemic has highlighted the important role of public policies to maximize opportunities and address challenges and concerns emerging from the data driven digital economy. Development outcomes do not result automatically from digital technological progress. It is up to policymakers to shape the digital economy in ways that lead to inclusive and sustainable outcomes.

45. The rapid pace of digitalization before 2020 had already sounded the alarm about the need to regulate the digital economy so that it works for the benefit of people and the planet. The pandemic has made the imperative to regulate – at the national, regional and international levels – even more urgent. Data governance, in particular, is critical in this context, including with regard to cross-border data flows. Policymakers should aim at maximizing the gains from data and cross-border data flows and minimizing the risks involved, while ensuring equitable distribution of the gains from data.

46. Governments may need to prioritize national digital readiness so that more local businesses – including those led by women – can become producers in the digital economy, not only consumers. In order to be able to add domestic value to data and develop their economies, policymakers in developing countries need to address various policy challenges, including reduction of global inequalities, digital and data divides, development of connectivity and data infrastructure, as well as concentration of market power and competition policy and taxation policy. Additional policy priorities include building capacities in digitalization for development through education policies for the enhancement of data literacy, digital skills and data talent, together with entrepreneurship, innovation and industrial policies to develop the digital economy. Institutional capacity to regulate also needs to be built, including the skills of policymakers. Adopting trade facilitation and customs automation measures to smooth trade processes will also be important to improve

access to the equipment needed in the digital economy. All this will require significant increases in investment. The multitude of policy areas involved implies that the approach needs to be holistic and whole-of-government, with cooperation among ministries. Digital economy policies implemented in a silo approach are likely to lead to suboptimal outcomes. Moreover, for many small developing countries, in order to reach the necessary scale and critical mass for digitalization, capacity-building efforts may be better addressed through a regional approach.

47. Fifth, global digital and data governance and international cooperation have become even more relevant. In light of the implementation of the fifth generation of mobile technologies and the "Internet of things", as well as the acceleration in digitization and the surge in cross-border data flows triggered by the pandemic, the scope for vast data collection and monetization globally has been broadened. The needs for and benefits of global data and information-sharing have been made highly evident as a result of the pandemic; without global cooperation on data and information, research to develop the vaccines and actions to tackle the impact of the pandemic would have been much more difficult tasks.

48. For the benefits of the digital economy to be realized, data need to be shared and used, which most often involves data flowing across borders. However, without a coherent underlying global digital and data governance framework to create trust, this could lead to a retreat from data-sharing and amplify already existing concerns over the lack of transparency in the data value chain, including the privacy of personal data, ethical use of artificial intelligence technologies and monetization of data by social media platforms. At the international level, there is a need for public policies to address imbalances among countries that result from digitalization and cross-border data flows. Moreover, in the same way that some data can be public goods, as data can lead not only to significant private gains but also to social value and developmental benefits, there is a case for some data to be considered as global public goods, which need to be addressed and provided through global governance. However, it should be taken into account that, at the international level, tackling the risks associated with data-sharing may become even more complicated.

49. The international community – including development partners, United Nations agencies, regional economic communities and organizations concerned with digital development – therefore needs to strengthen collaboration with Governments and the private sector to leverage opportunities and minimize the risks of countries falling behind in the digital economy.

50. While the COVID-19 pandemic and its impact on government revenues have further reduced the availability of public funds, they have also made Governments and other stakeholders more aware of the need to improve their readiness to engage in and benefit from the evolving data-driven digital economy. This underscores the need for international support.

51. Finally, the pandemic has further confirmed that economies and societies remain deeply interlinked worldwide, and that the interconnection of critical global challenges, such as those related to health, inequality, climate change and digital transformation, makes the case for international policy cooperation even stronger. Addressing global development challenges requires global policy approaches, as discussed further below.

IV. Post-pandemic recovery and digitalization

52. After the severe economic downturn triggered by the pandemic in 2020, the world economy bounced back in 2021 thanks to the advancement of vaccination and the emergency relief and stimulus measures applied by different Governments. However, the recovery is highly uneven and plagued by uncertainties. It depends highly on the evolution of the pandemic, the availability of vaccines as well as the speed of vaccination worldwide. The macroeconomic policies applied, and the policy space available for them, also play a key role in the recovery, for example, in terms of economic stimulus packages, including for digitalization purposes.

53. A sustainable course for recovery from the pandemic requires transformation of the global economy. In the same way that digitalization played a significant (but uneven) role in mitigating the negative economic impacts of the pandemic, by allowing to a certain extent the continuation of economic activities and facilitating the implementation of measures to cope with the pandemic, moving forward, digitalization can be an important element in supporting economic recovery and contributing to long-term inclusive and sustainable development. Digital technologies were already evolving rapidly before the pandemic, and the trends resulting from acceleration of digitalization during the pandemic are not likely to be reversed.

54. The narrative for post-pandemic recovery seems to be focusing on building back better. However, the decades prior to the pandemic were characterized by increasingly unsustainable trends. In the first decade of the 2000s the world suffered a deep financial and economic crisis in 2008 from which it has not really recovered (as witnessed by the slow economic growth rates in the second decade of the century). A major factor behind this crisis was the ongoing and increasing inequality of the last decades of the twentieth century. This, together with climate change, calls for moves towards a different development path. Moreover, the trends in digital transformation can be built on to chart new ways forward, towards a reorientation of policies and structural transformation.

55. Moving forward, it is important to look ahead in a way that differs from pre-pandemic times; the focus should be on building a better future. Recovery from the pandemic can help reshape the global economy in order to accelerate achievement of the Sustainable Development Goals. The pandemic has posed an enormous challenge to development aspirations. It is a stark reminder of shared vulnerabilities and demonstrates the need for real change. Nonetheless, it can also be an inflection point to alter course and build more resilience into the future.

56. Most Governments prioritized short-term responses to the pandemic, but some have also begun to address longer-term strategic requirements for recovery. Several Governments in developing countries have intervened to protect businesses and individual incomes. UNCTAD research and technical assistance have highlighted several successful initiatives in developing countries in the context of e-commerce and the digital economy.[15] In Latin America and the Caribbean, for example, Costa Rica launched a platform for businesses without an online presence and a smartphone application and texting service to facilitate trade among producers of agricultural, meat and fish products. In Africa, Senegal ran an information, education and awareness campaign on the benefits of e-commerce across all segments of the population, and there was successful collaboration aimed at onboarding new businesses and supporting local produce providers. In Rwanda, the Central Bank suspended mobile money fees for three months and waived charges on “push and pull” services between bank accounts and mobile wallets. In Tunisia, an initiative has helped build trust across the e-commerce ecosystem.[16] In Asia and the Pacific, Indonesia launched a capacity-building programme to expedite digitization and digitalization among microenterprise and small and medium-sized enterprises. In Cambodia, the Government has passed an e-commerce law to ease the registration of e-commerce businesses. In Kiribati, digital solutions implemented to combat the spread of the pandemic have given fresh impetus to efforts to harness the development gains of ICTs and e-commerce.

57. The recovery will depend on the extent to which policy efforts stimulate economies. Digitalization strategies can play a significant role in the recovery, as they have in mitigating the effects of the pandemic. Digitalization strategies should include public policies, as mentioned in chapter II, to bridge digital divides and build capacity to digitalize for development. Countries may need to redouble their efforts in these policy areas to turn the digital opportunities brought by the pandemic into development gains.

[15] See UNCTAD, 2020b and 2021b.

[16] See https://www.labeldeconfiance.tn/.

58. The role of digitalization in the recovery will depend on the capacity to sustain reform and the necessary investment needs. Investment should be geared towards building the capacity to digitalize, in order to emerge from this extraordinary situation and to spur sustainable growth in the long term. Stimulus packages can be an opportunity to progress in the direction of digital transformation for inclusive and sustainable development that works for people and planet. Investment in digital infrastructure and digital capacities could be boosted in the immediate future and in the medium term.[17] Investment should also result in developing countries not only being consumers but also active players and thus producers in the digital economy.

59. Stimulus packages are already covering digital innovation and connectivity, strengthening core data infrastructure and accelerated digitalization of the economy.[18] Rich countries have reacted to the pandemic with enormous rescue and stimulus packages, including for digitalization purposes. For example, in the United States, billions of dollars will be available for broadband affordability and infrastructure[19] and, in the European Union, a total of €2.018 trillion in current prices is expected to rebuild a post-pandemic Europe, in a way that makes it greener, more digital and more resilient.[20]

60. However, for poorer nations, the possibilities for resource mobilization to stimulate the economy are severely constrained, and the pandemic is putting additional strains on their external financial positions. For developing countries, especially for the poorest and most vulnerable among them, more international support will be needed so that they can have the policy space and liquidity required to meet the extraordinary outlay of resources to tackle the health and economic crisis, including through digital transformation. This is discussed further in the following chapter.

61. Much will therefore depend on the policies adopted and ability to coordinate them, both at the national and international levels. Despite the grim outlook, it is still possible to turn the pandemic into an opportunity to build a more inclusive, resilient and sustainable future. For recovering better, concerted policy attention and closer international collaboration will be needed to ensure that digitalization plays a powerful and positive role in efforts to build a better future.

V. The role of international cooperation on the way forward: Towards digitalization for sustainable development

62. The world is experiencing the combined and intertwined effects of several global challenges such as the health crisis, inequality, climate change and digital transformation, which affect sustainable development prospects. These do not obey established national boundaries and borders. Globally coordinated responses are needed. Global challenges require global solutions, as no country acting in isolation has either the resources or the capacity to deal effectively with them. Risks and threats are beyond the power of any single nation to address.

[17] For instance, the International Telecommunication Union estimates that nearly US$428 billion is required to connect the remaining 3 billion people aged 10 years and above to broadband Internet by 2030. See International Telecommunication Union, 2020, *Connecting Humanity*, available at https://www.itu.int/en/publications/ITU-D/pages/publications.aspx?parent=D-GEN-INVEST.CON-2020&media=paper.

[18] See World Bank, 2020, Digital stimulus packages: Lessons learned and what's next, available at https://blogs.worldbank.org/digital-development/digital-stimulus-packages-lessons-learned-and-whats-next (accessed 10 February 2022).

[19] See, for instance, The Council of State Governments, 2021, Infrastructure investment and jobs act: Broadband affordability and infrastructure, available at https://www.csg.org/2021/11/15/infrastructure-investment-and-jobs-act-broadband-affordability-and-infrastructure/.

[20] See European Commission, n/d, Recovery plan for Europe, available at https://ec.europa.eu/info/strategy/recovery-plan-europe_en (accessed 10 February 2022).

63. International cooperation and solidarity are and will remain critical, in order to avoid a lost decade for development and maintain the hopes of the 2030 Agenda for Sustainable Development of leaving no one behind. The Sustainable Development Goals are now more important than ever. The 2030 Agenda remains the target for a more prosperous future for people and planet. It is only through cooperation that a better future can be built that is more resilient, inclusive and sustainable. The pandemic has underscored the need for new and strengthened global governance, as discussed above.

64. From the perspective of harnessing digital transformations in the recovery from the pandemic, global solutions concerning cross-border data flows and science and technology collaboration will be critical. The increased interconnection and interdependence challenges in the global data-driven digital economy call for a move away from the fragmented silo approach towards a holistic, coordinated global approach. A global cooperative approach to find common ground for global progress in the data-driven digital economy would be preferable to foster inclusive and sustainable development. Rather than focusing on differences, efforts should be put into finding common principles and objectives.

65. This may need to involve innovative ways of global governance, as the old ones were developed for a different era. Multilateral cooperation should continue to support data-sharing and research to work for more resilient, inclusive and sustainable development. Data-driven digitalization creates global opportunities as well as global challenges that require global solutions to harness the positive and mitigate the negative impacts. Effective global governance of data is a prerequisite for data to fully support the attainment of the economic, social and environmental objectives of the 2030 Agenda, with people at the centre.

66. The challenges are extremely complex and multidimensional, thus requiring new engagement models between multiple disciplinary traditions and different stakeholders across public and private sectors, as well as individual citizens. Potential policy solutions should both respect basic universal human rights and be flexible enough to reflect local interests and cultures. They should account for the variety of conditions and highly different levels of digital readiness, as well as the development objectives, of countries, to enable all countries to participate in a beneficial manner. Governance will also need to be flexible in time and agile, considering rapid digital developments; challenges that need to be addressed today may be different from those emerging in a few years. Governance should take account of the necessary policy space for capacity-building and development.

67. Better global dialogue and collaboration are needed on setting the rules for a more inclusive outcome from digitalization and to identify new pathways for the digital economy. A key challenge is how to govern and harness the surge in digital data for the global good. Indeed, international regulation of cross-border data flows has become one of the major global challenges in the context of the digital economy.

68. It is more important than ever to embark on a new path for digital and data governance. The current fragmented data landscape is at risk of failing to capture value that could accrue from digital technologies, and it may create more space for substantial harm related to privacy breaches, cyberattacks and other risks. A holistic global policy approach should reflect the multiple and interlinked dimensions of data and balance different interests and needs in a way that supports inclusive and sustainable development, with the full involvement of countries that are trailing in digital readiness.

69. Global digital and data governance is important, among other things, to reduce inequalities, avoid further fragmentation of the digital space, enable global data sharing, develop global digital public goods, enhance trust in the digital economy and reduce uncertainty, and deal with giant global digital platforms. It may be necessary to consider the creation of a new international body that focuses on data-related governance, with the full involvement of developing countries and effective dialogue with all stakeholders. Ultimately, the goal should be to enable data to flow as freely as necessary and possible, while addressing various development objectives. This should allow development gains from data sharing to be maximized, ensuring that those gains are equitably distributed and minimizing risks and harms.

70. For global debates on the governance of data and cross-border data flows to be fully inclusive, they should ideally take place under the auspices of the United Nations, the most inclusive international forum in terms of country representation. This could take the form of a new United Nations coordinating body, with a clear mandate to work on data and with the right skills set-up for the purpose of assessing and developing comprehensive global digital and data governance. Its work should be multilateral, multi-stakeholder based and multidisciplinary.

71. Some initial steps in the direction of increased international cooperation in connection to digitalization are already taking place. A new approach to digital cooperation was set out in the report of the Secretary-General of the United Nations, road map for digital cooperation, which built on work by the High-level Panel on Digital Cooperation (A/74/821). Moreover, recognizing that the world challenges are interconnected and can only be addressed through reinvigorated multilateralism with the United Nations at the centre of these efforts, the Secretary-General presented the reports, "The highest aspiration. A call for action on human rights" and *Our Common Agenda*.[21] *Our Common Agenda* contains recommendations for renewed solidarity between peoples and future generations, a new social contract anchored in human rights, better management of critical global commons and global public goods that deliver equitably and sustainably for all. It pays significant attention to digital cooperation, including a Global Digital Compact.

72. Achieving common ground and global solutions will not be easy. Indeed, in this age of populism, anti-globalization and competing vested interests associated with the capture of rents from the use of digital technologies and data, it may seem self-defeating to propose a new international coordinating body. Yet all of these factors make it more essential than ever to embark on a new path for global digital and data governance. A reinforcement of the data realms or a splintering into multiple spheres would make a chaotic situation even more confusing. It would substantially diminish the value that can accrue from these technologies and the associated data, in addition to creating the space for substantial harms related to privacy and other human rights, cybersecurity and other risks.

73. International cooperation should also take the form of increased international support for digitalization that works for development. Governments in all developing countries need to pay more attention to dealing with data and data flows, including by allocating resources to the development of their capacities to create and capture the value of data domestically. Development partners also have a key role to play. Many developing countries will need international support due to their limited financial, technical and other resources. Indeed, the pandemic has come at a time when developing countries are already struggling to mobilize resources to meet development goals. And, while developing countries require more resources to deal with the pandemic, this situation may reduce their access to additional external finance for development, including for digitalization. There has been some international emergency response to alleviate most urgent needs emerging from the pandemic situation, but much more is required.

[21] See also https://www.un.org/en/sg-digital-cooperation-panel; https://www.un.org/en/content/digital-cooperation-roadmap/; https://www.un.org/peacebuilding/sites/www.un.org.peacebuilding/files/documents/2020_sg_call_to_action_for_hr_the_highest_aspiration.pdf; and United Nations, 2021, *Our Common Agenda: Report of the Secretary-General* (Sales No. E.21.I.8, New York), available at https://www.un.org/en/un75/common-agenda.

74. Resources will need to be scaled up to help countries meet mounting financing needs at a time when fiscal space is shrinking and debt burdens are growing in low- and middle-income countries, making mobilization of domestic resources even more difficult. This has also been recognized by the Organisation for Economic Co-operation and Development in its *Development Co-operation Report 2021*, although acknowledging that development finance for digitalization from bilateral and multilateral development finance and from philanthropic institutions increased from $2 billion in 2015 to $6.8 billion in 2019.[22] But much more is needed.

75. Technical assistance and capacity-building are critical, for instance, to raise awareness of data and the development implications, develop national data strategies, strengthen legal and regulatory frameworks and help ensure participation of developing countries in regulatory processes and developments at the international level. UNCTAD support in the areas of e-commerce and law reform, measuring e-commerce and the digital economy, eTrade readiness assessments, e-commerce strategy development and the eTrade for Women initiative can all strengthen the capacity of developing countries to leverage the digital economy for development.[23]

76. There is scope for more and better coordination and collaboration in the area of digital for development. A useful initiative in this context is the UNCTAD-led eTrade for all initiative. It seeks to bring together the donor community, development agencies, international and non-governmental organizations and the private sector, to share digital solutions, support e-commerce and bring more coherence into policymaking on digital trade. Over the past four years the initiative has acted as a single gateway for developing countries to organizations offering technical assistance and capacity-building related to e-commerce. Its COVID-19 repository, launched in 2020, is one example of collective efforts to collect evidence that can be harnessed to build a sustainable digital future.[24]

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[22] Organisation for Economic Co-operation and Development (2021), *Development Co-operation Report 2021: Shaping a Just Digital Transformation*, OECD Publishing, Paris, https://doi.org/10.1787/ce08832f-en.

[23] See UNCTAD, 2021, Fast-tracking eTrade readiness assessment implementation: A snapshot of UNCTAD support, available at https://unctad.org/system/files/official-document/dtlstictinf2021d3_en.pdf.

[24] See https://etradeforall.org/covid-19/.