



Federal Ministry
for Economic Affairs
and Energy



G20 GERMANY 2017

G20 Digital Economy Ministerial Conference

Düsseldorf 6 – 7 April 2017

G20 DIGITAL ECONOMY MINISTERIAL DECLARATION

Shaping Digitalisation for an Interconnected World

DÜSSELDORF, 6 – 7 APRIL 2017

1. We, the G20 Ministers responsible for the digital economy, met in Düsseldorf on 6–7 April 2017 to discuss how to maximize the contributions that digitalisation can provide to the economy.
2. Recalling the 2016 G20 Digital Economy Development and Cooperation Initiative, we recognise that the digital economy is an increasingly important driver of global inclusive economic growth and plays a significant role in accelerating economic development, enhancing productivity of existing industries, cultivating new markets and industries and achieving inclusive sustainable growth and development. We recognize that freedom of expression and the free flow of information, ideas and knowledge, are essential for the digital economy and beneficial to development, as reaffirmed in paragraph 4 of the Tunis Commitment of WSIS.¹
3. Reaffirming the principle in the G20 Digital Economy Development and Cooperation Initiative commitment to a multistakeholder approach to Internet governance, which includes full and active participation by governments, private sector, civil society, the technical community, and international organizations, in their respective roles and responsibilities. We support multistakeholder processes and initiatives which are inclusive, transparent and accountable to all stakeholders in achieving the digitally connected world.
4. In this respect the G20 countries recognise the importance of the High Level Meeting of the UN General Assembly on the overall review of the implementation of the outcomes of the World Summit on the Information Society by the UN General Assembly, where the international community reaffirmed its commitment to build a people-centred, inclusive and development oriented Information Society, where everyone can create, access, utilize and share information and knowledge, enabling individuals, communities and peoples to achieve their full potential in promoting their sustainable development and improving their quality of life premised on the purposes and principles of the Charter of the United Nations and respecting fully and upholding the Universal Declaration of Human Rights.
5. The impact of digital transformation on our economies and lives is already vast and continues to grow, however, in many respects remains unknown. As digitalisation can transform organisations and markets it can create challenges for inclusiveness, labour markets and structural adjustments that may need to be managed through appropriate domestic policy settings and international cooperation, for example sharing of best practices. We take note of the debate on taxation taking place in the Finance Ministers' track. Digitalisation and an open, secure, reliable, interoperable and truly global Internet are enablers for inclusive economic growth and provide us the tools to address societal and global challenges, including disparities arising from the widening wealth gap, for a more sustainable future.
6. Today, with only one in two people in the world connected to the Internet and underrepresented or disadvantaged groups² facing particular challenges, we need to intensify our efforts towards bridging all aspects of the digital divide so that everyone has the opportunity to reap the benefits of the digital economy.

1 The G20 countries reaffirm the *2016 G20 Digital Economy Development and Cooperation Initiative*, Section II: Guiding Principles: A Compass for Navigation, principle "Flow of information for Economic Growth, Trust and Security" page 3, last paragraph.

2 These groups may include for example poorest citizens, citizens from low-density and remote areas, women and girls, persons with disabilities, seniors, indigenous peoples and other vulnerable groups.

7. G20 countries take note of work by international organisations such as the IMF, ITU, UNCTAD, the WTO, the World Bank and the OECD on the digital economy including the OECD Ministerial Declaration on the Digital Economy adopted in June 2016.
8. In 2016, in Hangzhou, G20 leaders proposed to collectively leverage the opportunities as well as address challenges of an increasingly digital world, in order to enable a thriving and dynamic digital economy that drives inclusive global growth and benefits all. The G20 Task Force on the digital economy, first adopted in Hangzhou, has taken forward the G20 Blueprint on Innovative Growth, ensuring continuity and consistency with the G20 Digital Economy Development and Cooperation Initiative and the G20 New Industrial Revolution Action Plan, and mindful of potential synergies with other G20 work-streams. Under the current German G20 Presidency the first digital ministerial process has been set up, signifying the importance of digitalisation in the global agenda.
9. We recognize the critical importance of private sector and enterprises in the digital economy as well as of enabling and transparent legal, regulatory and policy environments, and fostering open, competitive markets. Recognizing the importance of enforcing competition and consumer protection laws in the digital economy, which are conducive to market access, technological innovation in ICTs and the growth of the digital economy. Fostering favourable conditions, mitigating potential risks, open labour markets for digital experts and policy environments, mindful of national regulations hereof, and removing unjustified barriers for inclusive digital economic growth are at the heart of the G20's objectives, including through measures to promote universal and affordable access, expanding infrastructure, improving digital skills, furthering the development of content that meets local needs on a non-discriminatory basis, and creating incentives to continue to innovate, compete and invest in digital business models, encouraging the use of interoperable approaches and relevant international standards taking into account national interests and priorities.
10. G20 countries recognise the potential for the digital economy to contribute to achieving the goals of the United Nations 2030 Agenda for Sustainable Development. This may be possible with a greater availability of affordable broadband connectivity, improved digital skills, and literacy, greater digital entrepreneurship and broader adoption of digital technologies and services as an enabler in other sectors of the economy. We call for cooperation and coordination to maximize the benefits and mitigate potential risks for these global challenges.
11. The G20 countries recognise the vital importance of the principle of multilingualism in the digital economy to encourage corresponding linguistic, cultural and historical diversity underscoring the need for further development of local content on a non-discriminatory basis and services in a variety of languages and formats as adopted by the 2005 WSIS and reaffirmed at the 2015 WSIS +10 in New York. Work on language and translation technologies will help to achieve this principle.
12. We, the Ministers responsible for the digital economy, also recognise that digitalisation touches upon areas outside of our responsibility and welcome the work of our colleagues including the implementation of the G20 High Level Principles for Digital Financial Inclusion by the G20 Global Partnership for Financial Inclusion the G20 Finance track and the efforts of the G20 Agriculture Ministers to highlight the importance of ICT for innovative and sustainable agriculture. We welcome the initiative of the future of work of the G20 Employment Track and also call on other Ministers in our countries to explore the benefits that digitalisation could bring to other sectors.

Global digitalisation – Harnessing the potential for inclusive growth and employment

13. G20 countries will continue to work on the key fields of action outlined in the G20 Blueprint on Innovation and Growth and recognise the strategic importance of harnessing digitalisation to generate prosperity, inclusive economic growth, social and cultural progress and development around the globe. We also acknowledge and support the potential that digitalisation has in creating prosperity and progress around the globe, underline the opportunities that exist, understand the need to balance benefits and risks, and provide for more inclusion. Therefore, it is important to identify obstacles to digitalisation, including those that lead to the further marginalisation of developing countries and widen digital divides as well as identify the practices that are working well.

14. We welcome new innovative digital business models, including like online-platforms and the sharing economy and call on Ministers responsible for the digital economy to consider principles that support investment and innovation, while protecting intellectual property rights. These developments should be accompanied by a sound and balanced system of policy approaches that should be based on supportable evidence and developed in an inclusive and transparent manner. We also encourage the exchange of best practices on boosting investment and financing for micro and small and medium-sized enterprises (MSMEs).
15. We recognise that digitalisation is raising new questions surrounding competition. The lines between offline and online business models are becoming increasingly blurred, and there are new competitive dynamics. In many cases digitalisation leads to greater competition, transparency and consumer choice, however, there is also a need to better understand the potential market impact of new business models.
16. The G20 countries recognise that digital infrastructure is fundamental to digitalisation yet not everyone has the same opportunities to connect for access. Digital divides persist across income, age, geography, and gender. Therefore, we reaffirm our commitment made in Hangzhou to the Connect 2020 Agenda's goal of connecting the next 1.5 billion people by 2020 and will encourage the domestic deployment of connectivity to all people by 2025, in accordance with the respective nation's strategic and developmental policy frameworks. With regard to improving connectivity infrastructure, we welcome policy and regulation that promote competitive environment in order to encourage private sector investment.
17. We encourage promoting actions for investment in the deployment and development of advanced communications technologies, including 5G and other technologies, recognizing the different levels of development of G20 countries, and taking into account international efforts for harmonisation.
18. Connectivity and digital access alone are not enough to create an inclusive, sustainable digital future for all. We welcome and support the work of the G20 Employment Track which is examining how employment and social policies could be adapted in order to shape the future of work in the areas of skills development and adjustment, social policies and job quality. We also understand that all forms of education and life-long learning may need to be adjusted to take advantage of new digital technologies and to develop the skills required by the labour market. We welcome the G20 Initiative to Promote Quality Apprenticeships and promote skills for a digital world in several areas including vocational training and on the job training (see Annex 2). As well, G20 countries intend to promote digital literacy, as an essential element in the development of the digital economy.
19. Half the population of the planet are women yet 250 million fewer women than men are online today. Taking this into consideration, we intend to promote action to help bridge the digital gender divide and help support the equitable participation of women and girls in the digital economy. The G20 Ministers responsible for the digital economy welcome the efforts made by the G20 Development Working Group and the initiative #eSkills4girls to help improve digital skills and employment perspectives for girls and women in emerging and developing countries. We also bear in mind the importance of initiatives to digitally include other underrepresented or disadvantaged groups.
20. G20 Members share the objectives of promoting further inclusive growth and creating jobs through Digital Trade. G20 Members also recognise that capabilities and development of Digital Trade across the world are unevenly spread, and that Digital Trade impacts on a range of closely related policy areas. Policy decisions should benefit society as a whole, consumers, and firms of all sizes, particularly MSMEs. G20 Members commit to work towards a common understanding and improved measurement of Digital Trade in order to foster informed and evidence-based policymaking in this area.

G20 Members will engage constructively in WTO discussions relating to E-commerce with the WTO's Eleventh Ministerial Conference (MC 11) in mind, and will remain constructively engaged in other international fora with responsibilities related to various aspects of Digital Trade to foster digital economy development and trade. G20 Members agree that Digital Trade has potential to boost inclusive growth and jobs and may also bring challenges to developed, developing and least developed countries at different levels, and, acknowledging that intensified and concerted action is needed to enhance the ability of developing and least developed countries to more fully engage in Digital Trade, agree on the common goal to strive to address the factors contributing to digital divides. Taking into account the rapid development of technology and its impact on trade patterns, G20 Members agree to continue discussions on Digital Trade under the upcoming Argentinian G20 Presidency.

21. G20 countries recognise the important role that MSMEs and start-ups play in our economies, including women-owned MSMEs and start-ups. We encourage sharing best practices, knowledge and skills in the areas of identifying new business opportunities and new financial resources as well as building new capacities. We welcome implementation efforts of the G20 Entrepreneurship Action Plan, which endeavours to improve the assistance available for entrepreneurs to access opportunities in the digital economy, including to promote inclusive growth in developed, developing and least developed countries.

Digitising production for growth

22. G20 countries share the opinion that the digitalisation of production has an impact on institutions and infrastructure and may act as a driver for global growth, including creating new jobs, but at the same time may potentially lead to other effects, especially on employment, transforming jobs and automating tasks. With respect to the digitalisation of production not all the G20 countries and their industries are at the same level of implementation. Therefore, through exchange of expertise and best practices, G20 countries can encourage digital transformation in production, especially for MSMEs. This includes gaining an in-depth understanding of the impact of digitalisation on economic development and particularly of how it can be harnessed in the service of industrialization and economic development in general. We also take into account the conference "Digitising Manufacturing in the G20 – Initiatives, Best Practices and Policy Approaches" which took place in March 2017.
23. A successful and inclusive co-operation of all interested parties and stakeholders can help address the wide range of economic and social challenges that exist. We intend to exchange best practices among experts in the digitalisation of production, Internet of Things, machine-to-machine (M2M) communication, IT security, smart cities and smart mobility.
24. The G20 countries support the development and their use of international standards for technological products and services that are consistent with the international rules including WTO rules and principles.³ G20 countries recognise the development of standards should be industry- and market-led, based on principles of openness, transparency and consensus and standards should not act as barrier to trade, competition or innovation. Standards can promote security in the use of ICT and interoperability, enabling us to reap the benefits from digitalisation while at the same time ensuring appropriate measures for pursuing legitimate public policy goals.
25. Building on the pre-G20-presidency conference on standardisation that took place in Berlin in October 2016 and on the call made by the G20 Agriculture Ministers, G20 countries are encouraged to exchange best practices on standardisation in areas such as: digitisation of production, security in the use of ICT, smart cities and smart mobility as well as in the field of smart farming. We will also continue to support mobility as well as in the field of smart farming. We will also continue to support international standards for digitised production applications, open to participation from interested parties and stakeholders, where all relevant standards organisations have a role to play. At the international level, standards to improve digitalisation of production and facilitate the conduct of international trade, could be fostered by existing standardisation bodies.

³ Text agreed in *2016 G20 Digital Economy Development and Cooperation Initiative*, Section IV: Policy Support: For an Open and Secure Environment, para 15. Support the development and use of international standards, page 7.

Strengthening trust in the digital world

26. Users can increasingly benefit from the digital world. G20 countries will support the free flow of information while respecting applicable domestic and/or international legal frameworks for privacy and data protection, and strengthening security in the use of ICT as well as transparency and consumer protection. We reaffirm support for ICT policies that preserve the global nature of the Internet, promote the flow of information across borders, and allow Internet users to lawfully access online information, knowledge and services of their choice. At the same time the G20 recognizes that applicable frameworks for privacy and personal data protection, as well as intellectual property rights, have to be respected as they are essential to strengthening confidence and trust in the digital economy.⁴ We further recognize that there is also a need to meet certain legitimate policy objectives to take advantage of the benefits of digitalisation. Furthermore, we encourage international co-operation among the G20 in the above mentioned policy objectives, while also supporting cooperation efforts at the broader international level and including to assist countries to bridge the digital divide.
27. We emphasise the importance of consumer protection in the digital economy. G20 countries continue to address a number of consumer challenges to ensure that online businesses provide consumers with information sufficient to make informed decisions, for example through consumer information that is easy to understand. Consumers also need to be empowered to take control of their online identity. In this context, it is also important to strengthen our efforts to reinforce basic digital literacy of consumers. We also note the G20 Consumer Summit held on 15 March in Berlin and the recommendations presented.
28. Trust and security are vital for harnessing the potential of the digital economy and for the successful digitalisation of production. As part of our efforts to address security risks, threats and vulnerabilities in the use of ICTs, including those to ICT-enabled critical infrastructures, endeavour to strengthen international collaboration, capacity building and public-private-partnerships, including through constructive discussions in relevant inter- national fora. We support and encourage the use of risk-based technical standards, guidelines, and best-practices to identify, assess, and manage security risk by both the public and private sectors.⁵

Going forward

29. We appreciate the role of the Business 20, Women 20, Youth 20 and Labour 20 and other civil society groups in the G20 process, and the importance of exchanging ideas and sharing effective and practical solutions with all interested parties and stakeholders.
30. We are grateful for the expertise provided by the IMF, ITU, OECD, UNCTAD, World Bank and WTO for their participation in our G20 work. We call on all international bodies with expertise to further the digital economy measurement agenda, consistent with their current mandates, in an effort to provide important tools for enhancing the understanding of the contribution of the digital economy to the overall economy.

4 Text agreed in *2016 G20 Digital Economy Development and Cooperation Initiative*, Section II: Guiding Principles: A Compass for Navigation, principle “Flow of information for Economic Growth, Trust and Security”, page 4.

5 Text agreed in *2016 G20 Digital Economy Development and Cooperation Initiative*, Section IV: Policy Support: For an Open and Secure Environment, para 16. Strengthen confidence and trust, sub-bullet 2, page 8.

31. Digital transformation through rapid adoption and application of innovative digital economy business models and frameworks as enablers for the sharing economy, workforce digitalisation and financial inclusion could be one practical, effective and scalable way, along with other policy approaches, of addressing uneven distribution of wealth and income disparity. We welcome future work on fostering strategic initiatives on the digital economy to improve wealth and income distribution in G20 countries.
32. To fully harness the potential of digitalisation for jobs and growth, it is critical that the digital economy is comprehensively included in our national statistics and when feasible, separately identified. There is also a need to continually review our statistical frameworks. This evidence will help us assess the impact that our digital strategies are having on the development of the digital economy. We therefore welcome the work of international organisations and National Statistical Offices to improve measurement of the digital economy.
33. In recognition of the potential for economic growth and social well-being that digital transformation brings, we invite the G20 Task Force on the digital economy to continue its work. The next Presidency of the G20, Argentina, has confirmed to continue the work on the basis of the Roadmap such as supporting, inclusive growth and jobs, sustainable development, and bridging the digital divides.

Annex paper 1 – A ROADMAP for Digitalisation: Policies for a Digital Future

Annex paper 2 – Digital skills in vocational education and training

Annex paper 3 – G20 Priorities on Digital Trade

A ROADMAP for Digitalisation: Policies for a Digital Future

Annex paper 1 to the Declaration of the Ministers responsible for the Digital Economy

Two years ago, in Antalya, G20 Leaders took note that we are living in a digital age and the effective use of digital technologies is an important driver for efficiency-enhancing and economic structural optimisation. In 2016, in Hangzhou, G20 countries agreed to the G20 Digital Economy Development and Cooperation Initiative which proposed some common understanding, principles and key areas of development and cooperation for the digital economy. In Düsseldorf, the G20 Task Force on the digital Economy has furthered the G20 Blueprint on Innovative Growth, Ministers responsible for the digital economy welcome and discussed this work plan for the G20 on digitalisation. A ROADMAP for Digitalisation: Policies for a Digital Future will build on the great work already done and deliver on areas G20 countries have identified as key areas. A study of the OECD “Key Issues for Digital Transformation in the G20” has been presented in the Ministerial Meeting.

1. Improve world-wide access, adoption and effective use of digital technologies for all

The growth of the digital economy has enabled the rapid spread and uptake of digital technologies, however adoption and use varies among G20 countries by demographic categories, level of economic development, industry and firm size.

The G20 Ministers responsible for the digital economy intend to:

- Share information and experiences to support improving access, adoption and effective use of digital technologies, including emerging technologies for new telecommunications services and applications, to boost digital economy development and digitally include underrepresented or disadvantaged groups.
- Share information and experiences with a view to identify good practices for digital strategies and learn from implementation challenges and outcomes.
- Discuss ways on how to use digital technologies to overcome wealth gaps and income disparities.
- Encourage G20 countries to develop digital strategies that support the Connect 2020 Agenda’s goals and strive to connect domestically all people by 2025.
- Encourage G20 countries to foster the incubation, development and adoption of various digital economy business models as enablers for sharing economy, workforce digitalisation and financial inclusion for addressing the need for reducing wealth and income disparity.

2. Expand digital infrastructure

G20 countries encourage continual investment in the development of digital infrastructures to meet existing and future demand, and help bridge digital divides.

The G20 Ministers responsible for the digital economy intend to:

- Promote a competitive environment and pro-investment policies that stimulate investment in digital infrastructure and welcome public private partnerships and commercial equity investment funds as well as social funds to invest in digital infrastructure and ICT applications.
- Work constructively together to extend coverage to underserved communities or individuals.
- Take action on the Global Infrastructure Connectivity Alliance Initiative endorsed last year by G20 Leaders.¹

3. Adapting policies in an increasingly digital and information and knowledge driven global economy

Digitalisation affects many aspects of the economy and society. Policy formulation will require coordination across government ministries and among different levels of government as well as participation of all interested parties and stakeholders.

The G20 Ministers responsible for the digital economy intend to:

- Share best practices and lessons learned regarding the impacts of digitalisation and policy approaches to adapt to a knowledge driven global economy.
- Encourage investment in the digital economy that enables new scalable and replicable business models.
- Further discuss on innovative digital economy business models and frameworks as enablers for the sharing economy, workforce digitalisation and financial inclusion.
- Cooperate to improve global digital economic development to help bridge the digital divides in the fields of infrastructure, data security and digital skills and capacity building.
- Follow the debate on taxation taking place in the Finance Minister's track.

4. Foster competition in the digital economy

Digitalisation creates new opportunities to increase consumer choice and provide innovative new products and services. The lines between offline and online business models are becoming increasingly blurred, and there are new competitive dynamics.

The G20 Ministers responsible for the digital economy intend to:

- Encourage the exchange of best practices to foster competition including to expand innovation, and prevent anti-competitive restrictions.

¹ **G20 Leaders' Communique Hangzhou Summit** – Para 39... “We endorse the Global Infrastructure Connectivity Alliance launched this year to enhance the synergy and cooperation among various infrastructure connectivity programs in a holistic way. We ask the WBG to serve as the Secretariat of the Alliance, working closely with the Global Infrastructure Hub (GIH), OECD, other MDBs, and interested G20 members to support its activities.”...

- Note the ongoing work by the OECD in the area of competition, to consider reviewing the OECD Competition Assessment Toolkit in light of digitalisation.

5. Support MSMEs in reaping the benefits of digitalisation and addressing the challenges

It is important to foster the use of advanced digital technologies among MSMEs, however their ability to swiftly adopt new technologies, to learn by doing, to innovate, and to optimise their production can be constrained by their small scale, and lack of resources limiting their ability to reap the benefits of the digital economy.

The G20 Ministers responsible for the digital economy intend to:

- Promote a more entrepreneurial friendly environment by encouraging programmes such as angel investor networks and matchmaking services to foster existing and innovative new business models and tap into existing and new sources of financing.
- Exchange experiences and good practices on national initiatives with a view to facilitating connections between these programmes across G20 countries, including through the Entrepreneurship Research Centre on G20 Economies.
- Encourage digital start-ups through a more entrepreneurial friendly environment as vehicles for innovation, entrepreneurship, employment opportunities and inclusive economic growth. Availability of technology and capacity building by these MSMEs is a critical element for the development of the start-up ecosystem, alongside the availability of adequate sources of financing, and further cooperation between industry and academia.

6. Encourage continued development of the IoT and the digitalisation of production

G20 countries can share good practices and identify areas of further cooperation on how to encourage the development of IoT and an efficient digitalisation of production.

The G20 Ministers responsible for the digital economy intend to:

- Work together in the areas of digitalisation of production as well as smart cities, smart mobility, IT security and smart farming.
- Share best practices on the digitalisation of production to facilitate digital transformation on a global level and to benefit all G20 countries.
- Encourage centres of excellence, digital hubs (for Start-ups), and clusters to inform and support MSMEs, as well as to explore synergies with various partners, including large companies.
- Encourage learning partnerships e. g. between national initiatives and different interested parties and stakeholders.

7. Enable all people to adapt to and excel in the digital economy and society

Digital skills are increasingly a precondition for participating in modern economic, social, cultural, political and civic life. In order to better prepare our citizens for the opportunities and challenges of globalisation and the digital revolution we need to ensure that everyone can benefit and adapt to new occupations and skills needs.

The G20 Ministers responsible for the digital economy intend to:

- Encourage and promote effective strategies on digital literacy and skills development for the digital economy enabling citizens, especially underrepresented or disadvantaged groups, to successfully adapt to the requirements of the digital economy and society.
- Work with the Employment Working Group to build on Annex 2 recommendations including the G20 Initiative to Promote Quality Apprenticeships and the G20 Skills Strategy, to help address the challenges brought on by digitalisation. This could require targeted actions and capacity building reflecting the different stages of development of G20 countries.
- Work with the Development Working Group to build synergies with the G20 initiative on promoting skills development for the digital economy and employment prospects for women and girls, particularly in developing and emerging countries.
- Foster digitalisation in order to strive towards meeting the goals agreed upon in the 2030 Agenda and the Sustainable Development Goals to end poverty, protect the planet and ensure prosperity for all.²

8. Strengthen trust in the digital economy

Trust and security are fundamental to the functioning of the digital economy; without them, uptake of digital technologies may be limited, undermining an important source of potential growth and social progress.

The G20 Ministers responsible for the digital economy intend to:

- Exchange experiences on how to build trust and encourage the use of risk-based technical standards, guidelines and best practices to identify assess and manage security risks by both the public and private sectors, especially for MSMEs.
- Encourage the development of national privacy strategies while taking into account the different needs in countries. We recognise the importance of promoting interoperability between privacy frameworks of different countries.
- Within the Argentinian Presidency of the G20 we will discuss international public policy issues related to privacy and security in the digital economy.

9. Promote consumer protection online

Despite the steady increase of business-to-consumer e-commerce, there remains considerable untapped potential. Consumer protection is of great importance to promote inclusive growth built on adequate and effective intellectual property rights protection and enforcement are essential to building the trust needed to further develop these markets for the benefit of consumers and businesses alike.

² The end of the sentence was taken from the UN's website on the SDGs

The G20 Ministers responsible for the digital economy intend to:

- Further study new business models in relation to consumer trust.
- Discuss under the Argentinian Presidency how to protect consumers in the digital economy including and inviting international organisations for example UNCTAD, the OECD and Consumers International.

10. Measuring the digital economy

Underpinning our success is the ability to know what progress we have made which also means improving measurement of the digital economy, because robust statistics are the foundation on which good, evidence-based policy advice is based.

The G20 Ministers responsible for the digital economy intend to:

- Welcome the work of the G20 Trade and Investment Working Group on Measuring Digital Trade, which is an important part of the broader issue of measuring the digital economy.
- Note the “OECD-IMF Interim report on the impact of digitalisation on measures of GDP” and look forward to the G20 Action Plan to Improve Measurement of the digital economy in Macroeconomic Statistics, to be delivered by the OECD and IMF working in collaboration with other international organisations and national statistical organisations later this year.
- Encourage international organisations, such as the IMF, ITU, OECD, UNCTAD, World Bank and the WTO, in collaboration with national statistical compilers, to elaborate on frameworks for analysing key issues in digitalisation at the country level taking into account the structure of the local economy and statistical capacity.
- Endeavour to define a set of metrics that all economies can consider collecting with a view to developing a list of core, cross-country comparable ICT indicators to better support the evidence base and policy making by countries.

11. Bridging the Digital Gender Divide

Digitalisation has created new avenues for the economic empowerment of women. However, G20 countries are concerned that the benefits of digitalisation are not being equitably shared by women.

Depending on geographic and social conditions, women experience higher access barriers to technologies and digital financial services. Women also face skills, participation and leadership gaps which prevent them from fully participating in the digital economy.

To support the equitable participation of women in the digital economy, G20 Ministers responsible for the digital economy intend to:

- Share national practices on efforts to bridge the digital gender divide.
- Consider taking action across a range of key policy areas, subject to national circumstances, including developing national action plans to achieve Target 2.5.A of the Connect 2020 Agenda: “Gender equality among Internet users should be reached by 2020”.

- Support initiatives to develop digital financial services that are accessible and appropriate for women.
- Encourage the review of existing digital strategies to ensure they incorporate a gender perspective that addresses women's needs, circumstances, capabilities and preferences; and mainstream gender impact analysis.
- Increase female participation in STEM education and employment.
- Explore opportunities for developing metrics that capture gender disaggregated data where possible on the level of access, use and benefits.

Digital skills in vocational education and training

Annex paper 2 to the Declaration of the Ministers responsible for the Digital Economy

Digital skills and competencies are driving forces of innovation and competitiveness of G20 economies and partner countries. Digitalisation is changing some occupational fields and professions as requirements to employees' qualifications evolve. Thus, digital literacy and digital skills should be elements of all forms of education and professional training over the life cycle. Starting from early education to vocational and university education to life-long learning – the acquisition of digital skills is essential in all these periods, especially in the transition from job to job. In particular, learning digital skills in vocational education and on-the-job training potentially increases employability and reduces the vulnerability to job loss due to changing task requirements. G20 recall the Digital Economy Development and Cooperation Initiative concluded in Hangzhou, China. In this regard, digital inclusion and the use of digital technology to enhance inclusion should remain key elements of promoting the digital economy in which no one is left behind.

As stated in the G20 Initiative to Promote Quality Apprenticeship, vocational education and training are important as they enhance the skills of the workforce. The close link between theory and practice in apprenticeship programs as well as during on-the-job-training can help to promote digitalisation in G20 economies and partner economies. Teaching apprentices digital skills and the use of digital media promotes the dissemination of up-to date knowledge on digitalisation in an enterprise. Apprentices can immediately apply their knowledge and induce spill-over effects to other employees. Vice versa, a skilled worker who is committed to digital on-the-job-training can help apprentices and other staff in their company to adjust to digitalisation. To address the lack of digitally skilled labour on a global level, there is an increasing need to support developing and emerging economies to design quality labour-market oriented vocational education and training.

Promotion of digital literacy, high quality education and acquisition of digital skills will help diminish digital divides between and within countries. Also, it will foster occupational and social participation in an increasingly digitised world and promote inclusive growth. In addition, it can contribute to digital capacity building within governments, as an efficient government needs a capable workforce. Science, technology engineering and mathematics (STEM)-skills are critical enablers of active participation in the digital economy, especially for women whose participation and graduation rates in those fields are below those of men in many countries. Lawful access to and effective use of digital technologies has the potential to benefit disadvantaged or underrepresented groups¹ as well as foster their social and economic empowerment. Improving their digital skills will help increase their employment prospects and their participation as users, employees, entrepreneurs, innovators and leaders of the global digital economy. In addition, digital technologies offer advantages to teach and develop skills among communities that are displaced by natural and/or human driven disasters. Further, participation in work by persons with disabilities could be facilitated by accessible digital technologies and training.

¹ These groups may include for example: poorest citizens, citizens from low-density and remote areas, seniors women and girls, persons with disabilities, indigenous peoples and other vulnerable groups.

Building on the G20 Initiative to Promote Quality Apprenticeship, we intend to undertake the following actions, especially targeting disadvantaged or underrepresented groups, and as appropriate to national circumstances by:

- Encouraging strategies on developing curricula on acquiring digital skills and applying digital learning technologies in vocational education (including rapid skills training programs) and on-the-job-training to upgrade employees' digital skills taking into account enterprises' needs.
- Identifying the skills needed in the future to contribute to inclusive and quality apprenticeship programs and enable enterprises, especially SMEs, to be successful in the digital economy. In line with the G20 Skills Strategy continuously monitor the need for digital skills in the workplace, in administration and in government and adjust education and training programs according to the developments in the changing world of work.
- Promote entrepreneurial skills including the orientation towards opportunity, proactivity and innovation as a complement to digital skills.
- Encouraging public and private sector, academia and social partners in designing and adapting apprenticeship programs which promote the acquisition of digital skills.
- Providing schools with the appropriate infrastructure, administrative framework and necessary resources to successfully teach digital skills and competencies also with regard to the requirements of digitalisation of production.
- Utilizing the potential of digital and e-learning technologies and accessible ICTs to increase learning outcomes of disadvantaged or underrepresented groups and enabling an effective life-long learning. Promoting the exchange of best practices and draw lessons for G20 countries in this field.
- Bridging the gender digital divide by ensuring that programs that foster digital skills in vocational education and training are equally attractive and accessible to both genders. Building synergies with the G20 initiative “#eSkills4Girls” on promoting digital skills and employment prospects for women and girls in emerging and developing countries.
- Improving teachers' and trainers' qualifications through continuous education enabling them to provide high quality teaching of digital content and apply digital education technology.
- Raising the awareness of the importance of digitalisation with regard to competitiveness and the ability of enterprises to innovate among apprentices, skilled workforce, teachers, managers and the general population.
- Strengthening dialogue between enterprises, start-ups, vocational schools, local authorities, training providers, social partners and other relevant actors and promoting exchanges on digital skills needed as well as training opportunities required by companies, e.g. by setting up regional or sector-specific clusters. These clusters also may support MSMEs which may not have adequate resources to develop digital training programs.
- Improving training and education of digital skills globally by strengthening the exchange of best practices among G20 countries, partner economies and other countries leading the digital education field, thereby respecting the particular challenges in developing countries.

G20 Priorities on Digital Trade

Annex paper 3 to the Declaration of the Ministers responsible for the Digital Economy

Digitalisation has a vast impact on our economies. Digital trade and technology have triggered a profound transformation of economic and trade structures. This was recognised by the G20 Leaders, who agreed in Hangzhou in 2016 to welcome the B20's interest to strengthen Digital Trade.

In 2017, with a view to deepening discussions and cooperation in order to identify opportunities and challenges related to Digital Trade, the German G20 Presidency invited G20 Members to continue this exchange, notably in the Trade and Investment Working Group (TIWG). G20 Members thank the International Organisations, in particular OECD, WTO, UNCTAD, World Bank, ITC and IMF, for their valuable input on the topic.

G20 Members agree as follows:

Measuring Digital Trade

G20 Members share the common objective to foster informed and evidence-based policy-making regarding Digital Trade, for which reliable data is critical. In view of the complexity of measuring Digital Trade, and with the aim to improve it, more work is needed.

G20 Members acknowledge challenges in measuring Digital Trade, including such technical and complex issues as the definition and scope of Digital Trade, the collection of basic and new sources of reliable data, appropriate accounting frameworks, and the classification of certain transactions as trade in goods or trade in services or both.

G20 Members therefore support efforts to intensify work already underway in relation to mapping and measuring Digital Trade, as an important part of the broader issue of measuring the digital economy. To this end, G20 Members support further progress on this work by national statistical agencies and International Organizations. We encourage the Inter-Agency Task Force on International Trade Statistics (TFITS, co-chaired by OECD and WTO) to engage more actively with all national statistical agencies, as well as with the business community, to develop proposals for efficient reporting systems.

G20 Members would welcome further work by the International Organizations, within their respective mandates, to:

- for the purpose of measuring Digital Trade, make proposals to responsible authorities for a common understanding of Digital Trade that is broad enough to cover existing approaches, and flexible enough to take into account on-going technological evolution, new ways of providing goods and services, and changes in regulatory classifications;
- identify both biases and gaps in measuring Digital Trade in statistics, including related to transactions not leaving a monetary footprint; and
- suggest ways to address these challenges and propose any areas where early progress could be made.

International Organizations are invited to present the result of their reflections and proposals for possible future work to the TIWG under the upcoming Argentinian G20 Presidency.

International Frameworks on Digital Trade

Recalling G20 Leaders' commitments on the international dimension of the digital economy set out in their communiqués in both Hangzhou and Antalya, and noting the important work of the Task Force on the digital economy, G20 Members have considered how to foster digital economy development and trade and deepen their understanding and discussion, and have agreed as follows:

- G20 Members will follow through on the G20 Digital Economy Development and Cooperation Initiative agreed in Hangzhou as part of their efforts to unleash the potential of the digitaleconomy, by fostering digital economy development and trade;
- G20 Members will engage constructively in WTO discussions relating to E-commerce with the WTO's Eleventh Ministerial Conference (MC 11) in mind;
- G20 Members recognize that full implementation of the WTO Trade Facilitation Agreement holds the prospect of enhancing the contribution E-commerce makes to lowering costs and increasing efficiency in international trade;
- G20 Members support the results of the 6th Appraisal of the WTO Trade Policy Review Mechanism, by which elements related to E-commerce may be included in WTO Secretariat's reports and, on a voluntary basis, in Members' reports;
- G20 Members will remain pro-actively and constructively engaged in other international fora with responsibilities related to various aspects of Digital Trade to sustain and improve, as appropriate, predictable and transparent frameworks;
- G20 Members will cultivate transparent digital economy policy making in accordance with the G20 Digital Economy Development and Cooperation Initiative and share best practices as useful tools for capacity building of policymakers; and
- the TIWG will keep Digital Trade prominently on its agenda with a view to reporting further under Argentina's G20 Presidency.

Recognizing the Development Dimension of Digital Trade

G20 Members agree that Digital Trade has potential to boost inclusive growth and jobs, but may also bring challenges, in particular to developing and least developed countries. At the same time, G20 Members acknowledge that intensified and concerted action is needed to enhance the ability of developing and least developed countries to more fully engage in Digital Trade. G20 Members agree on the common goal to strive to address the factors contributing to digital divides and contribute to fully inclusive Digital Trade.

G20 Members recognize that enhancing the ability of developing and least developed countries to achieve Digital Trade readiness and to more fully engage in Digital Trade requires specific capacities in a number of areas. These include digital infrastructure, technological development, skills, transparent and predictable regulatory frameworks, and availability of payment solutions. G20 Members emphasize the need for information sharing, capacity building and cooperation to enable and enhance the participation of developing and least developed countries in Digital Trade and in regional and global value chains.

To this end, G20 Members:

- agree to further deepen the discussion within the TIWG on the development dimension of Digital Trade;
- commit to continue the exchange of best practices of Digital Trade policies, including on sound regulatory frameworks and on measures to support increased Digital Trade;
- welcome collaborative efforts, including under the auspices of the e-Trade for All Initiative, involving developing countries, donors, the private sector and relevant International Organizations, within their respective mandates, to identify the constraints on Digital Trade and develop appropriate responses; and
- invite relevant International Organizations, within their respective mandates, to prepare a report to the TIWG under the upcoming Argentinian G20 Presidency. This report could identify factors affecting Digital Trade readiness and propose options for reducing barriers to Digital Trade and improving the performance of developing and least developed countries in this area to promote inclusive and sustainable growth.