



G7 ICT AND INDUSTRY MINISTERS' DECLARATION MAKING THE NEXT PRODUCTION REVOLUTION INCLUSIVE, OPEN AND SECURE

Torino, 25 - 26 September 2017

26 September 2017

1. The pace of change is accelerating. The *Next Production Revolution* is now. The combination of a variety of digital and other technologies, new materials and new processes is already transforming production in our countries, with pervasive effects on our lives. This transformation has the potential for far-reaching effects to productivity, employment, skills, economic growth, trade, well-being and the environment. It brings opportunities, as well as challenges for our economies and societies.
2. Recognising the impacts for society and economy of these transformative technologies, the G7 Countries have recently initiated strategies to embrace opportunities and address challenges brought by the Next Production Revolution (NPR). These provide the basis to leverage best practices and build a coordinated international dialogue at the G7 level, with the joint aim of reaping the benefits and addressing the challenges of the NPR for all countries and communities.



Ministero dello Sviluppo Economico

3. We the G7 Ministers of ICT and Industry have come together in Torino, to further our dialogue and cooperation, building on the outcomes of the 2016 G7 ICT Ministers' Meeting held in Japan, the 2016 G20 Leaders' Summit and Science Technology and Innovation (STI) Ministers meeting held in China and the 2017 G20 meeting of the Ministers responsible for the digital economy held in Germany.
4. Furthermore, we are responding to the G7 Leaders who met in Taormina in May 2017, who in their Declaration and annex "*G7 People-Centred Action Plan on Innovation, Skills and Labor*" called upon the G7 ICT and Industry Ministers to further elaborate on the *Innovation in Production* pillar, using as a starting point the set of three Key Policy Priorities of *Inclusiveness, Openness and Security* as well as on Key Policy Priority 7 on *NPR-enabling quality infrastructures*.
5. Our meeting in Torino contributes to a coordinated policy with the Employment Ministers and the Science Technology and Innovation Ministers, in an ambitious and comprehensive outcome of the G7 *Innovation Week*. These G7 Ministers' meetings will focus on human capital, on STI financing policies and mechanisms as well as employment policies necessary to support the growth of the digital economy.
6. In identifying the opportunities and challenges that innovation and transformation of the global digital economy are creating, it is crucial that we continue to engage proactively with the private sector, the scientific community, academia, the technology community and civil society in an open, inclusive and transparent approach to developing our policy responses and initiatives. Accordingly we take into account the discussion from the G7 ICT and Industry Multistakeholder Conference in Turin on 25 September 2017, which highlighted the benefits and economic growth opportunities for today's digitally connected world.
7. We embrace multi-faceted and multistakeholder approaches and we welcome the meeting of the "*Strategic Advisory Board to G7 Leaders on People-Centered Innovation*" (I-7¹), held in Torino on September 25th under the Italian Presidency. We take note of the Chair's Summary of the dialogue between the G7 governments and stakeholders in innovation.

¹ See G7 Taormina Leaders' Communiqué



OUR VISION AND GUIDING PRINCIPLES

8. The G7 Countries have the opportunity to lead the world into a new era, when innovation and transformative technologies will enhance the economic and social well-being of all our citizens and help achieve the 2030 Agenda for Sustainable Development. Through dialogue and international cooperation, our aim is to turn our shared vision into action, challenges into opportunities, and disparities into inclusive growth, to serve human progress, environmentally, socially and economically.
9. Our approach aims to be forward-looking with the goal of utilizing technologies for sustainable growth, productivity gains and improvement in living standards that are widely diffused, within and amongst nations, across frontiers and sectors of the economy, among enterprises of different sizes and all layers of society. To achieve this and to ensure everyone is able to make the most out of new technologies, it is crucial that we continue to reflect the new opportunities and challenges they bring.
10. Our policy aims at sustainable economic growth, taking into account that in our countries Small and Medium Enterprises (SMEs) account for more than 50% of GDP, and 56% of employment² contributing disproportionately to job creation³, innovation and social inclusion.
11. We believe we need to further develop our common vision to seize the opportunities and tackle the evolving challenges of the new economy which relies on the participation of all countries and on collective action. We therefore reaffirm our shared goals expressed last year in the OECD Ministerial Declaration on the Digital Economy (“Cancún Declaration”⁴).
12. In this pursuit, we reiterate the following principles, which we believe support the global, unfragmented, open, free, interoperable, reliable and secure

² OECD Statistics Directorate estimates based on OECD SDBS database and Labour Force Surveys, http://dx.doi.org/10.1787/entrepreneur_aag-2016-en

³ OECD estimates from DynEmp v.2 database.

⁴ Adopted by the Ministers and representatives of Argentina, Australia, Austria, Belgium, **Canada**, Chile, Colombia, Costa Rica, the Czech Republic, Denmark, Ecuador, Egypt, Estonia, Finland, **France**, **Germany**, Greece, Hungary, Iceland, Indonesia, Ireland, Israel, **Italy**, **Japan**, Korea, Latvia, Lithuania, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the **United Kingdom**, the **United States**, and the **European Union**, assembled in Cancún, Mexico, on 22-23 June 2016.



Internet, foster investments and trust in the Next Production Revolution and underpin growth in the global digital economy:

- 12a. The commitment to support the multistakeholder approach to Internet governance, consistent with the Internet Governance Principles resulting from the NETmundial Multistakeholder meeting held in Sao Paulo in 2014⁵.
- 12b. The promotion and protection of the free flow of information across borders.
- 12c. Respecting privacy as a fundamental value and respecting applicable frameworks for privacy and data protection.
- 12d. The recognition that the same human rights and fundamental freedoms, that people have offline apply and must also be protected online, including freedom of expression and of peaceful assembly and association.
- 12e. The promotion of transparency, trust and consumer protection as foundational conditions for the success of the digital economy.
- 12f. The recognition of the importance of access to the Internet and to high-speed broadband services, which requires investment in enabling quality infrastructure and applications that enhance connectivity.
- 12g. The recognition of the use of ICTs in the development of local content and in the promotion of social, inclusion and cultural and linguistic diversity.
- 12h. The recognition of the importance of policy and regulation that promote a competitive environment in order to encourage private sector investment with regard to improving connectivity infrastructure.
- 12i. The opposition to data localisation requirements that are unjustifiable taking into account legitimate public policy objectives.
- 12j. The need for effective and adequate protection and enforcement of intellectual property rights.
- 12k. The opposition to the generally applicable policies that require access to or transfer of source code of mass market software as a condition of market access while recognising the legitimate interest of Governments in assessing the security of these products.

⁵ Global Multistakeholder Meeting on the Future of the Internet Governance – NETmundial Multistakeholder Statement, 24 April 2014.



- 12l. The commitment to keep our markets open and to fight protectionism while standing firm against all unfair trade practices.
- 12m. The need to improve cybersecurity for the effective protection of citizens and business.
- 12n. The support of the greater use of ICTs worldwide to contribute to addressing Sustainable Development Goals (SDGs).

INCLUSIVENESS: FOR SUSTAINABLE GROWTH

- 13. The first Key Policy Priority set by the G7 Leaders is Inclusiveness.

Approaches for SME competitiveness and inclusiveness in the NPR

- 14. The Next Production Revolution provides outstanding opportunities for SMEs: the increasing pervasiveness of digital technologies has enabled new businesses and the commercialisation of new ideas, lowering entry barriers and freeing up resources for knowledge-based investments. Digital technologies, in particular the daily expanding e-commerce opportunities, facilitate greater access to international markets, allow enhanced market intelligence, ease SMEs participation in global value chains and connect them with a broader customer base. Digital technologies also improve logistics, and make it possible to deliver products and services, and to complete transactions and payments in a cheaper, faster and more efficient manner⁶. Small digital enterprises tend to grow faster than non-digital ones, and digitalisation is strongly correlated with successful start-ups and firm growth⁷.
- 15. Despite the benefits of digitalization, SMEs and particularly microenterprises generally lag behind in the digital transition compared with larger firms, hampering their ability to innovate and to integrate into global value chains. This applies especially to sophisticated ICTs, which are fundamental for digitalised industrial production and can help smaller firms to rapidly scale up.

⁶ OECD (2016), "Economic and Social Benefits of Internet Openness", *OECD Digital Economy Papers*, No. 257, OECD Publishing, Paris. DOI: <http://dx.doi.org/10.1787/5jlwqf2r97g5-en>

⁷ OECD estimates from DynEmp v.2 database



16. We support policies that enable SMEs to take full advantage of emerging technologies, to bridge the digital divide and facilitate their effective and meaningful access to digital platforms, as this will help enhance their competitiveness in an increasingly digitally connected world, facilitate their further integration into global value chains and support job creation.
17. We support policies taken by governments and the private sector to reduce the investment gap, strengthen digital infrastructure and promote connectivity for SMEs including outside of well-connected metropolitan areas, increase the adoption of emerging technologies, enhance security and trust in the digital economy, share best practices, for example through competence centres or digital innovation hubs, as well as enable SMEs to empower their workforce through the upgrading of leadership, management and digital literacy skills, and to invest in the necessary complementary knowledge-based assets.

High-tech start-up ecosystems and collaborative innovation

18. The overall success of SMEs in embracing the opportunities brought about by the Next Production Revolution also depends on a sufficiently dynamic business environment, where innovative digital start-ups can grow and achieve scale. Amongst SMEs, start-ups and young businesses (i.e. firms of 5 years old or less) contribute disproportionately to job creation⁸. They are also nurturing the development and diffusion of innovations, opening new markets and paving the way for new business models.
19. We recognise the role our governments can play in addressing barriers to firm entry and growth, and impediments to the restructuring or exiting of poorly performing firms. Ensuring business dynamism will help in reducing the widening productivity gap between frontier firms and laggards, also contributing to more cohesive and inclusive societies. We will work towards supporting developing and emerging countries in adopting and using digital technologies and Internet-based entrepreneurship.
20. It will therefore be important to reduce unjustified administrative and regulatory burdens, ensure businesses can easily understand and navigate regulatory requirements, facilitate access to capital and foster conducive

⁸ Calvino, F., C. Criscuolo and C. Menon (2016), "No Country for Young Firms?: Start-up Dynamics and National Policies", OECD Science, Technology and Industry Policy Papers, No. 29, OECD Publishing, Paris. <http://dx.doi.org/10.1787/5jm22p40c8mw-en>



ecosystems⁹, in which cooperation between entrepreneurs, businesses, universities, research institutes and local governments create a strong and resilient network for SMEs and entrepreneurship.

G7 common policy approaches for SME competitiveness and inclusiveness in the NPR

21. Innovation is a reflection of openness and freedom of thought where diverse ideas and perspectives can flourish to generate social, economic and environmental advancements. Open public sector data, as well as market-based approaches to access and sharing of data are important to foster innovation in production and services, entrepreneurship and development of SMEs.
22. Automation, big data analytics, manufacturing technologies, nanotechnology, artificial intelligence and the Internet of Things are examples of progress that is fostering new business models and market opportunities. G7 countries recognize the importance of SMEs to national economies and the need for them to keep pace with the rapid advancement of technologies and business frameworks. This entails policy approaches to address issues concerning:
 - a. more inclusive growth through increased participation of underrepresented groups in the economy and labour force;
 - b. financing, including access to capital markets, especially venture capital;
 - c. technology adoption and dissemination;
 - d. development of skills pipelines that reflect emerging opportunities in the NPR to reap all benefits in terms of job creation;
 - e. collaboration and knowledge exchange to foster integrated and collaborative innovation eco-systems;
 - f. reduction of administrative and regulatory burdens that limit the growth of SMEs.
23. Against this background, and building on the 2017 G20 Roadmap for Digitalisation: Policies for a Digital Future, we support the “G7 common policy

⁹ See the concept of digital innovation hub launched with the National Plan Industry 4.0 in Italy in line with the first *Pillar of Digitising European industry* by the European Commission.

approaches for SMEs competitiveness and inclusiveness in the NPR”, that is intended to guide our future actions in support of SMEs. They are enshrined in Annex 1 to this Declaration.

24. We engage in these common approaches at national and international level, in sharing best practices and information on outcomes.
25. We intend to take stock of already existing and ongoing analytical work by the OECD and other organizations to deepen our knowledge and understanding of the impact of digital transformation on SMEs.

OPENNESS: FOR AN OPEN AND INNOVATIVE DIGITALLY CONNECTED WORLD

26. The second Key Policy Priority set by the G7 Leaders is Openness.
27. Openness is a key feature of the digital transformation, stemming from basic principles such as the global nature of the Internet and the free flow of information. To this effect, we reaffirm support for ICT policies that preserve the global nature of the Internet, promote the free flow of information across borders, and allow Internet users to lawfully access online information, knowledge and services of their choice.
28. We affirm that the Digital Economy, including Digital Trade, has the potential to boost inclusive growth and jobs. We therefore strive to unleash the potential of Digital Trade by further improving international cooperation, promoting a free, open and secure digital trade environment, formulating transparent and predictable regulatory frameworks and supporting further work for Digital Trade based on international rules within in the WTO.
29. The global digital transformation can serve as a powerful economic catalyst for the economic empowerment and inclusion of women and girls. Greater access to STEM (Science, Technology, Engineering and Mathematics) and computer science studies is therefore key for the inclusion of women in the digital economy. We welcome the G20 #eSkills4Girls initiative and other works that aim at tackling the existing gender digital divide by fostering digital skills and qualifications for women and girls in particular in low income and developing countries.



Promoting the free flow of information across borders

30. We are aware that the digital economy is accelerating with the further development and deployment of emerging technologies and applications, such as the Internet of Things and big data, which could connect millions of devices and produce an increasing amount of data on people and objects.
31. In line with our guiding principles stated at §12, and in line with the G20 Digital Economy Ministerial Declaration this year, we strongly believe that freedom of expression and the free flow of information, ideas and knowledge are essential for the digital economy and beneficial to development. We are aware that in contemporary society, the free flow of information helps to generate confidence and plays a central role in cultural, economic and inclusive growth.
32. Competition policy can support innovation and growth in the digital economy and deter anticompetitive behaviour.
33. Both the public and the private sectors can improve the economic measurement and analysis of flows of information. We intend to work together to define how to measure these flows and address the challenges associated with such measurement.

Support the access to NPR – Enabling quality digital infrastructure

34. G7 Leaders in Taormina recognized the importance to equip our countries with a set of NPR – enabling quality infrastructures so as to improve the productivity of the businesses, the mobility of people and goods and the access of people, business and researchers to NPR related innovation.
35. Therefore, in line with the Key Priority Policy 7, we will encourage the continued roll out of high-speed broadband networks promoting fully inclusive social and economic growth. This will help to overcome digital divides and also include those members of the community who are at risk of being left out to enable them to reap the benefits of digitalisation. To this effect, we reaffirm our goal to bring 1.5 billion new Internet users online by 2020 and encourage the domestic deployment of connectivity to all people by 2025.



36. We support removing regulatory barriers, encouraging private sector investment in a competitive environment, using technologically neutral frameworks and advancing incentive-based policies, that are technology neutral, market oriented and transparent, to spur investments of sustainable high-speed broadband networks in less profitable and hard to reach geographic areas.
37. We recognise the importance of continuing to concentrate our efforts in the deployment of high-speed broadband networks, including the development and fast roll out of emerging technologies such as 5G as well as encourage the faster uptake of IPv6 protocol in ways that meet industry and societal needs.
38. We recognise in particular that 5G promises a step-change in connectivity, with enormous potential to boost productivity and grow the economy. It could unleash new technologies and transform how we interact with the world providing opportunities for wide-ranging and, as yet, unforeseen new applications, business models and enhanced lifestyles.
39. Therefore, we the G7 ICT and Industry Ministers intend to:
- improve business productivity, through NPR-enabling quality infrastructures such as high-speed broadband networks, so as to promote the mobility of people and goods and the access of citizens, business and researchers to NPR-related innovation;
 - encourage the relevant stakeholders to align their investments in line with the “G7 Ise-Shima Principles for Promoting Quality Infrastructure Investment” in order to accelerate the diffusion of the benefits of the NPR-Enabling quality infrastructure throughout the world;
 - increase coverage and penetration rates of high-speed broadband networks in order to accelerate the efforts to connect citizens and firms in both developed and developing countries and strive domestically to connect all people by 2025 as referenced at the 2017 G20 meeting of the Ministers responsible for the digital economy held in Germany;
 - encourage the adoption of action plans to spur the rapid deployment of advanced mobile technologies, making available sufficient harmonised spectrum, facilitating the industry investment required to provide the necessary infrastructure and backhaul capacity as well as collaborating and



supporting developing countries;

- e. encourage the acceleration of IPv6 deployment;
- f. encourage close cooperation as the technology develops, so that countries can share best practices and key learnings - all of which will help with the rollout of 5G.

Promoting International cooperation on standards

- 40. We believe that industry-led voluntary international technical standards, developed in an open, transparent and consensus-based manner and in market-led approaches, are critical for the progress toward the digitally connected world. These are a means to promote economic growth, innovation, productivity and competitiveness, and interoperability, trust and security in the use of ICT's. Standards should be developed in a manner consistent with the WTO Agreement on Technical Barriers to Trade (TBT) Code of Good Practice and the TBT Committee Decision on Principles for the Development of International Standards.
- 41. To sustain and extend global connectivity and economic interaction through digitalisation, international standards should be preferred over the use of national or regional standards. When international standards are transposed into, or adopted as, regional/national standards, such a transposition or adoption should be done according to the procedures of the developer of the international standard and the resulting regional/national standard should not conflict with the original international standard. . To avoid duplication of efforts among the different standardisation organisations, transparency, communication and exchange between these organisations should be encouraged, consistent with the TBT Committee Decision on Principles for the development of international standards.
- 42. Standardisation is an effort driven by market needs that can advance social and economic objectives. Therefore standards-setting practices should be open to participation from all interested stakeholders. While industry-led standards bodies are best positioned to develop the technological standards and solutions to address global ICTs challenges and opportunities, Governments should foster an inclusive environment for standards development, built on collaboration and co-operation amongst the many players that make up the

standards ecosystems, so that technical solutions reflect the priorities of all stakeholders including SMEs and consumers.

43. We therefore support sharing best practices that enable all relevant groups and stakeholders to work together more effectively within the processes and forums used to develop standards. The participation of SMEs as drivers of innovation in standardisation is of vital importance. SMEs should be encouraged to actively engage in standards development and barriers to their participation should be reduced to the greatest extent possible. This also requires supporting all stakeholders, including SMEs, to better understand the global standards ecosystem, as well as encouraging standards bodies to make their open processes as inclusive as possible, with clear rules of engagement that promote SMEs participation.

Artificial Intelligence

44. We recognise that the current advancements in new technologies, especially Artificial Intelligence (A.I.) could bring immense benefits to our economies and societies. We share the vision of human-centric A.I. which drives innovation and growth in the digital economy. We believe that all stakeholders have a role to play in fostering and promoting an exchange of perspectives, which should focus on contributing to economic growth and social well-being while promoting the development and innovation of AI. We further develop this vision in the “G7 multistakeholder exchange on Human Centric AI for our societies” set forth in Annex 2 to this declaration.

SECURITY: FOR A MORE SECURE DIGITAL BUSINESS ENVIRONMENT

45. The third Key Policy Priority set by the G7 Leaders is Security.
46. We realise the great potential benefits of emerging technologies. Innovation rests on our ability to create an open, trusted, secure and resilient ecosystem. We highlight 1) the importance of cyber-security for businesses, in particular for SMEs, based on the promotion of company leadership awareness, an effective risk-based management and security by design approaches as a foundation for trust and confidence in the digital environment; 2) the efficient protection and enforcement of IPRs.



47. We also confirm the relevance of the development of cyber security markets as underlined by the Communiqué of the G7 Finance Ministers and Central Banks' Governors¹⁰ and we take duly note of the "Declaration on Responsible States Behavior in Cyberspace" of the G7 Foreign Ministers' Meeting¹¹, endorsed later by the G7 Leaders in Taormina, which promotes stability in cyberspace.

Cybersecurity for business

48. We acknowledge that the cyber risks are concerns shared by the business community, and present an opportunity to adopt robust risk-management practices.
49. The significant increase in number and type of connected products and services available to users presents major opportunities for growth and innovation. At the same time there is an increased vulnerability of digital ecosystems and users. It is important for the international community of stakeholders including industry, governments and civil society to consider a variety of approaches, such as security by design, risk management practices, market-relevant conformity assessments and appropriate security evaluation processes, to enhance security throughout the value chain, while supporting innovation.
50. We emphasize the needs to strengthen the efforts to improve risk management, notably for SMEs, for greater digital security for business.
51. We underline the importance of encouraging Governments and industry to work together in order to exchange best practices on tackling cyber threats.
52. We support the "G7 Actions for Enhancing the Cyber Security for Businesses" as enshrined in Annex 3 to this Declaration.

Protecting and enforcing Intellectual Property Rights (IPRs)

53. We acknowledge the role of intellectual property rights for promoting innovation, contributing to industry's productivity, growth and competitiveness in the digital economy and that IPR-intensive industries contribute more than

¹⁰ Italy, Bari, 12-13 May 2017

¹¹ Italy, Lucca, 10-11 April 2017



other industries to increase GDP, employment and trade. IP assets play a crucial role in companies' business strategies and governments support IP asset development and the use of IPRs among companies as part of their proactive industrial policies.

54. Effective IPR enforcement is a critical component of robust IPR systems. The rise of IP infringements in the digital economy is of growing concern for governments, industries and consumers worldwide.
55. Therefore, we recognize the need to have in place strong enforcement mechanisms for IP, including through international collaboration, to the benefit of IP right holders engaged in both large and small businesses, in light of serious risk of economic loss stemming from IP infringement including counterfeiting, piracy and misappropriation of trade secrets.
56. In light of the above, we the G7 ICT and Industry Ministers intend to work together to ensure the ability of right holders and governments to achieve effective protection and enforcement of IP, including the fight against counterfeiting and piracy, misappropriation of trade secrets and transnational organized crime.

We identify the following areas of interest for future work within the existing international intellectual property organizations:

- a. support the sharing of information and experiences to curb illicit trade;
 - b. strengthen capacity to protect and enforce intellectual property rights, also considering the impact of new digital technologies such as 3D printing for intellectual property law;
 - c. share approaches for the effective protection and enforcement of intellectual property rights at national and international level.
 - d. support right holders' ability to protect their intellectual property rights by enhancing multistakeholder international collaboration and public-private partnerships, also taking into account mechanisms to help SMEs to protect their IPRs.
57. We also reaffirm that no country should conduct or support ICT-enabled infringement or misappropriation of intellectual property, including trade secrets or other confidential business information, with the intent of providing competitive advantages to companies or commercial sectors.



GOING FORWARD

58. A new window of opportunity is opening before us. The technologies offered by the Next Production Revolution and underpinned by digital infrastructures and capabilities hold out the promise of yielding a better future for our citizens. We are determined to work together in advancing our common goals to promote inclusiveness, openness and security in the digitally connected era. To that end we will continue to engage with each other to address the policy approaches set out in the Declaration and annexes. We thank Italy for its leadership this year and acknowledge the value that the multistakeholder process and the I-7 have yielded by providing valuable inputs and contributions to our debate. Responding to the call from our Leaders, we look forward to the discussions of the Science and Employment Ministers meetings later this week, to jointly achieve comprehensive and forward-looking outcomes in the G7 Innovation Week. We take note of the work in the domain of taxation taking place in the Finance Ministers' track. We look forward to further our dialogue and cooperation under Canada's Presidency in 2018 and to discussing common priorities and actions to secure our future.

