

The
G7 Research Group
at the Munk School of Global Affairs and Public Policy at Trinity College
in the University of Toronto presents the

2018 Charlevoix G7 Interim Compliance Report

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"We have meanwhile set up a process and there are also independent institutions monitoring which objectives of our G7 meetings we actually achieve. When it comes to these goals we have a compliance rate of about 80%, according to the University of Toronto. Germany, with its 87%, comes off pretty well. That means that next year too, under the Japanese G7 presidency, we are going to check where we stand in comparison to what we have discussed with each other now. So a lot of what we have resolved to do here together is something that we are going to have to work very hard at over the next few months. But I think that it has become apparent that we, as the G7, want to assume responsibility far beyond the prosperity in our own countries. That's why today's outreach meetings, that is the meetings with our guests, were also of great importance."

Chancellor Angela Merkel, Schloss Elmau, 8 June 2015

G7 summits are a moment for people to judge whether aspirational intent is met by concrete commitments. The G7 Research Group provides a report card on the implementation of G7 and G20 commitments. It is a good moment for the public to interact with leaders and say, you took a leadership position on these issues — a year later, or three years later, what have you accomplished?

Achim Steiner, Administrator, United Nations Development Programme,
in *G7 Canada: The 2018 Charlevoix Summit*

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5. Labour and Employment: Skills and Education

“We are resolved to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.”

G7 Charlevoix Leaders’ Communiqué

Assessment

Member	No Compliance	Partial Compliance	Full Compliance
Canada			+1
France			+1
Germany			+1
Italy			+1
Japan			+1
United Kingdom			+1
United States			+1
European Union			+1
Average Score	+1.00		

Background

Following the rapid technological change in recent years, G7 members need to ensure that all citizens are equipped to keep up with the demands of a changing labour market. It is vital for every citizen to “contribute to, and share in, economic success” as it helps in maximizing economic prosperity.⁶⁸³

In particular, G7 members aim to promote the culture of lifelong learning for all generations of workers.⁶⁸⁴ This practice has been encouraged by the Organisation for Economic Co-operation and Development (OECD) Education Ministers since 1996, with an emphasis on improving competencies for all “from cradle to grave.”⁶⁸⁵ The OECD stresses that all types (“formal,” “non-formal” and “informal”) of learning should be recognized.⁶⁸⁶ The importance of diverse learning methods tailored to different stages and groups of people has always been a key priority as well.⁶⁸⁷

The OECD has also put much emphasis on the importance of apprenticeship and vocational learning, with studies and country reviews carried out by the Vocational Education and Training and Adult Learning Team.⁶⁸⁸ Apprenticeships, which typically combine state-funded off-the-job education with work placements, are found to be “a worthwhile investment both for employers and

⁶⁸³ Charlevoix Commitment on Equality and Economic Growth. Access Date: 24 August 2018. <https://g7.gc.ca/wp-content/uploads/2018/06/EqualityEconomicGrowth.pdf>.

⁶⁸⁴ G7 Charlevoix Leaders’ Communiqué, G7 Charlevoix 2018 (Charlevoix) 9 June 2018. Access Date: 28 August 2018. <https://g7.gc.ca/en/official-documents/charlevoix-g7-summit-communique/>.

⁶⁸⁵ “Lifelong Learning for All: Policy Directions”, Education Policy Analysis, Chapter 1, OECD (Paris). Access Date: 28 August 2018. [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEELSA/ED/CERI/CD\(2000\)12/PART1/REV2&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEELSA/ED/CERI/CD(2000)12/PART1/REV2&docLanguage=En).

⁶⁸⁶ “Lifelong Learning for All: Policy Directions”, Education Policy Analysis, Chapter 1, OECD (Paris). Access Date: 28 August 2018. [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEELSA/ED/CERI/CD\(2000\)12/PART1/REV2&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEELSA/ED/CERI/CD(2000)12/PART1/REV2&docLanguage=En).

⁶⁸⁷ “Lifelong Learning for All: Policy Directions”, Education Policy Analysis, Chapter 1, OECD (Paris). Access Date: 28 August 2018. [http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEELSA/ED/CERI/CD\(2000\)12/PART1/REV2&docLanguage=En](http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DEELSA/ED/CERI/CD(2000)12/PART1/REV2&docLanguage=En).

⁶⁸⁸ OECD Policy Reviews of Vocational Education and Training (VET) and Adult Learning, OECD (Paris). Access Date: 29 August 2018. <http://www.oecd.org/education/innovation-education/vet.htm>.

individuals” and vocational training can aid the integration of immigrants.^{689,690} These sentiments are echoed in the G7 Charlevoix Leaders’ Communiqué as the members commit to developing innovative new approaches and create opportunities that improve employers engagement.⁶⁹¹

As part of the plan to provide market-driven training, the G7 Charlevoix Leaders’ Communiqué stresses the expansion of training for girls and women in the fields of science, technology, engineering and mathematics.⁶⁹² This connects with the top priority of gender equality during Canada’s G7 Presidency, which aims to increase women’s access to good quality jobs.⁶⁹³ The mission to support female labour participation is also a major priority highlighted in the International Monetary Fund Annual Report in 2017, as it can lead to growth in gross domestic product.⁶⁹⁴

This commitment to preparing workers for emerging technologies builds on previous G7 commitments. At the G7 Taormina Summit in 2017, G7 members agreed on a People-Centered Action Plan on Innovation, Skills, and Labor, with emphasis on challenges brought by the Next Production Revolution (NPR), which are changes that will affect the production process.⁶⁹⁵ The Taormina Summit was the first G7 summit to address NPR.⁶⁹⁶ While the Charlevoix Leaders’ Communiqué does not mention the NPR, it should be remarked that the phrase “new world of work” carries similar meaning. The G7 Research Group measured compliance to provide stability in the labour force and found an average compliance score of +0.50 or 75 percent.⁶⁹⁷

In June 2018, the G7 Charlevoix Summit’s commitment to economic growth through labour and employment policies was articulated in the Charlevoix Commitment on Equality and Economic Growth document, which was endorsed by the Leaders of the G7.⁶⁹⁸ This is part of the commitment to “eradicate poverty, advance gender equality, foster income equality, ensure better access to financial resources and create decent work and quality of life for all.”⁶⁹⁹

Commitment Features

G7 members are “resolved to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.”

⁶⁸⁹ Kuczera, M., “Striking the right balance: Costs and benefits of apprenticeship”, OECD Education Working Papers, No. 153, OECD Publishing (Paris) 11 February 2017. Access Date: 29 August 2018. https://www.oecd-ilibrary.org/education/striking-the-right-balance_995fff01-en.

⁶⁹⁰ Unlocking the potential of migrants through vocational education and training (VET), OECD (Paris). Access Date: 29 August 2018. <http://www.oecd.org/education/skills-beyond-school/unlocking-the-potential-of-migrants-through-vocational-education-and-training-vet.htm>.

⁶⁹¹ G7 Charlevoix Leaders’ Communiqué, G7 Charlevoix 2018 (Charlevoix) 9 June 2018. Access Date: 28 August 2018.

⁶⁹² G7 Charlevoix Leaders’ Communiqué, G7 Charlevoix 2018 (Charlevoix) 9 June 2018. Access Date: 28 August 2018. <https://g7.gc.ca/en/official-documents/charlevoix-g7-summit-communique/>

⁶⁹³ G7 Public Engagement Paper — Advancing Gender Equality and Women’s Empowerment, G7 Charlevoix 2018 (Charlevoix). Access Date: 28 August 2018. <https://g7.gc.ca/en/g7-presidency/themes/advancing-gender-equality-women-empowerment/g7-public-engagement-paper/>

⁶⁹⁴ IMF Annual Report 2017 — Promoting Inclusive Growth, IMF (Washington). Access Date: 28 August 2018. <http://www.imf.org/external/pubs/ft/ar/2017/eng/spotlight.htm#gender>.

⁶⁹⁵ G7 People-Centered Action Plan on Innovation, Skills and Labor, G7 Taormina 2017 (Taormina). Access Date: 28 August 2018. http://www.g7italy.it/sites/default/files/documents/Action%20Plan_0.pdf.

⁶⁹⁶ 2017 G7 Taormina Final Compliance Report, G7 Research Group (Toronto) 4 June 2018. Access Date: 28 August 2018. <http://www.g7.utoronto.ca/evaluations/2017compliance-final/2017-G7-final-compliance.pdf>.

⁶⁹⁷ 2017 G7 Taormina Final Compliance Report, G7 Research Group (Toronto) 4 June 2018. Access Date: 28 August 2018. <http://www.g7.utoronto.ca/evaluations/2017compliance-final/2017-G7-final-compliance.pdf>.

⁶⁹⁸ Charlevoix Commitment on Equality and Economic Growth, G7 Charlevoix 2018 (Charlevoix) 9 June 2018. Access Date: 27 August 2018. <https://g7.gc.ca/en/official-documents/charlevoix-commitment-equality-economic-growth/>

⁶⁹⁹ G7 Charlevoix Leaders’ Communiqué, G7 Charlevoix 2018 (Charlevoix) 9 June 2018. Access Date: 28 August 2018. <https://g7.gc.ca/en/official-documents/charlevoix-g7-summit-communique/>.

The commitment is broken into two sections where the G7 member: 1) resolved to ensure all workers have access to the skills necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies; and 2) resolved to ensure all workers have access to the education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

“Emerging technologies” has a resulting definition that “identifies five attributes that feature in the emergence of novel technologies. These are 1) radical novelty, 2) relatively fast growth, 3) coherence, 4) prominent impact, and 5) uncertainty and ambiguity.”⁷⁰⁰ This includes fields such as artificial intelligence, 3D printing, blockchain, Internet of Things, etc.

For the first component, “to ensure” suggest a pledge to the commitment and is defined as “to make something certain to happen.”⁷⁰¹ Access should be interpreted to mean “the right to obtain or make use of the entity in reference.”⁷⁰² The effectiveness of “skills” development and training can be measured by employment to population ratio by skill level. Employment to population ratio and incidence of involuntary part-time work can be used to capture full economic participation.⁷⁰³ Thus, actions that count toward compliance must have an explicit impact on improving the well-being of the population. For the purpose of this report, such improvements should be reflected by measures of economic prosperity that present a comprehensive picture.

Furthermore, other than measures that directly impact the skills and knowledge of workers, G7 members should also have tax systems that reduce inequality and support labour market participation.⁷⁰⁴ Changes can be done to the tax burdens such that workers are incentivized. Other potential adjustments to the welfare system that can protect workers who are affected by technological changes include changes to social insurance programmes e.g. unemployment benefits. These skills and education should also account for the changing terrain and the “new world” in which they refer, which includes skillsets in the emerging field of artificial intelligence and computer technology skills as well as other emerging technologies.

The goal of the second part of the commitment is to prepare all workers for innovation and emerging technologies. By committing to help citizens “adapt” to the emerging technologies, G7 members need to ensure that the skills and knowledge of job seekers can be adjusted to suit the new conditions and needs of the ever-changing labour market. This builds the foundation towards allowing all citizens to “prosper,” which means they can succeed in material terms.⁷⁰⁵

Other than reforms and policies carried out by the governments of the G7 members, efforts done through collaborations with different parties and stakeholders to improve the workforce count as compliance. Such collaborations can be with businesses, civil society organizations or educational partners. Note that both the government and the collaboration partner have to be involved in order for the action to be considered as compliance, either through financial support, exchange of knowledge or other forms of collaborations.

⁷⁰⁰ What is An Emerging Technology? SSRN 9 August 2015. Access Date: 1 October 2018.
https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2564094.

⁷⁰¹ Compliance Coding Manual, G7 Research Group (Toronto) 27 September 2017. Access Date: 30 September 2018.
https://drive.google.com/drive/u/0/folders/1wVDddUQmOQ9EwQ8STOn8xG20yj_X4RI2.

⁷⁰² Compliance Coding Manual, G7 Research Group (Toronto) 27 September 2017. Access Date: 30 September 2018.
https://drive.google.com/drive/u/0/folders/1wVDddUQmOQ9EwQ8STOn8xG20yj_X4RI2.

⁷⁰³ Achieving Growth that Works for Everyone, G7 Charlevoix 2018 (Charlevoix) 9 June 2018. Access Date: 28 August 2018. <https://g7.gc.ca/en/official-documents/achieving-growth-works-everyone/>.

⁷⁰⁴ Charlevoix Commitment on Equality and Economic Growth, G7 Charlevoix 2018 (Charlevoix) 9 June 2018. Access Date: 27 August 2018. <https://g7.gc.ca/en/official-documents/charlevoix-commitment-equality-economic-growth/>.

⁷⁰⁵ Prosper, English Oxford Living Dictionaries (Oxford). Access Date: 27 August 2018.
<https://en.oxforddictionaries.com/definition/prosper>

The difference between “skills” and “education” in this commitment is dictated by the nature of the knowledge that they acquire. “Skills” can be transferable from various experiences in order for one to propose in the new world of technology, whereas “education” alludes to a type of formal instruction in the field of technology that will aid workers to excel in this cutting-edge technology occupations.

For full compliance, the G7 member must ensure workers have access to the skills AND education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies. For both skills and education, this includes skill set transference as well as formal education on the new technologies. These emerging technologies can include but are not limited to artificial intelligence, 3D printing, blockchain and Internet of Things where to prosper must be accounted for in material terms.

Partial compliance is awarded when G7 member ensures either that workers have access to the skills OR the education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies. Compliance to either the former or latter will result in a 0. Non-compliance is when the G7 member doesn’t ensure workers have access to the skills OR the education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

Scoring Guidelines

-1	The G7 member does not ensure all workers have access to the skills NOR education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.
0	The G7 member ensures all workers have access to the skills OR education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.
+1	The G7 member ensures all workers have access to the skills AND education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

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Compliance Director: Tacye Hong

Canada: +1

Canada has fully complied with its commitment to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

On 14 June 2018, the Minister of Employment, Workforce Development and Labor, Patty Hajdu, announced that the government of Canada will fund CAD2.8 million to Trucking Human Resources Canada through the Sectoral Initiatives Program, to develop the sectoral labour market information needed to help the trucking and logistics industry take advantage of opportunities created by e-

commerce.⁷⁰⁶ The project will develop bilingual tools to help employers recruit and retain employees from untapped labour pools.⁷⁰⁷

On 27 June 2018, Minister Patty Hajdu and Christina Gray, Alberta's Minister of Labour, announced that the governments of Canada and Alberta have signed agreements where Canada will provide the province with over CAD1.7 billion over six years to invest in Albertan workers.⁷⁰⁸ This is an increase in funding of nearly CAD500 million over the period, compared to previous funding levels.⁷⁰⁹ This increase means that about 124,000 more Alberta workers will benefit than before.⁷¹⁰ The agreement will provide apprenticeship training, academic upgrading, English as a second language, etc. to prepare for the innovation-driven economy.⁷¹¹

On 27 June 2018, the governments of Canada and Northwest Territories signed agreements that will see Canada provide over CAD46 million over six years to invest in Northwest Territories workers.⁷¹² These agreements represent an increase in funding of nearly CAD4 million over the period, compared to previous funding levels, and helping an estimated 1,300 more workers in Northwest

⁷⁰⁶ Government of Canada announces \$2.8 million for Trucking Human Resources Canada to help workers and employers in a changing economy, Ministry of Employment and Social Development Canada (Gatineau). 14 June 2018. Access Date: 10 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-28-million-for-trucking-human-resources-canada-to-help-workers-and-employers-in-a-changing-economy.html>.

⁷⁰⁷ Government of Canada announces \$2.8 million for Trucking Human Resources Canada to help workers and employers in a changing economy, Ministry of Employment and Social Development Canada (Gatineau). 14 June 2018. Access Date: 10 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-28-million-for-trucking-human-resources-canada-to-help-workers-and-employers-in-a-changing-economy.html>.

⁷⁰⁸ Government of Canada announces funding agreements to give Albertans better access to jobs and training, Ministry of Employment and Social Development Canada (Edmonton). 27 June 2018. Access Date: 18 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-funding-agreements-to-give-albertans-better-access-to-jobs-and-training.html>.

⁷⁰⁹ Government of Canada announces funding agreements to give Albertans better access to jobs and training, Ministry of Employment and Social Development Canada (Edmonton). 27 June 2018. Access Date: 18 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-funding-agreements-to-give-albertans-better-access-to-jobs-and-training.html>.

⁷¹⁰ Government of Canada announces funding agreements to give Albertans better access to jobs and training, Ministry of Employment and Social Development Canada (Edmonton). 27 June 2018. Access Date: 18 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-funding-agreements-to-give-albertans-better-access-to-jobs-and-training.html>.

⁷¹¹ Government of Canada announces funding agreements to give Albertans better access to jobs and training, Ministry of Employment and Social Development Canada (Edmonton). 27 June 2018. Access Date: 18 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-funding-agreements-to-give-albertans-better-access-to-jobs-and-training.html>.

⁷¹² Government of Canada announces agreement to give workers in Northwest Territories tools and training to find and keep good jobs, Ministry of Employment and Social Development Canada (Yellowknife) 27 June 2018, Access Date: 19 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-agreement-to-give-workers-in-northwest-territories-tools-and-training-to-find-and-keep-good-jobs.html>.

Territories over the six years.⁷¹³ This will allow under-represented groups to have access to have upskilling and academic upgrading to adapt to the economy.⁷¹⁴

On 16 July 2018, the Minister of Science and Minister of Sport and Persons with Disabilities, Kirsty Duncan, announced that the Government of Canada will invest CAD29.7 million of Collaborative Research and Training Experience grants to provide students with training programs for the job of the new world, along with grants to 18 Canadian research teams to collaborate with global networks.⁷¹⁵

On 3 August 2018, the Government of Canada announced that it will provide tools and skills training to workers in Newfoundland and Labrador to create more job opportunities and to help workers thrive in the new world of innovative technology.⁷¹⁶

On 3 August 2018, the Government of Canada announced that it will collaborate with small businesses and not-for-profit organizations to offer 1,200 internship positions to post-secondary graduates to help them develop the digital and problem-solving skills needed in the changing world of technology.⁷¹⁷

On 21 August 2018, Minister Patty Hajdu announced that the federal government will provide over CAD835,000 to the Cowichan Valley Youth Services Society for its Youth Employment Mentorship Program, where youth will have the opportunity to gain job skills and work experiences.⁷¹⁸

On 30 August 2018, Minister Patty Hajdu announced that the government of Canada will invest CAD166,000 to Carpenters Local 1669 Training Centre to upgrade its equipment, such that key groups e.g. women and people with disabilities, can train with up-to-date resources.⁷¹⁹

⁷¹³ Government of Canada announces agreement to give workers in Northwest Territories tools and training to find and keep good jobs, Ministry of Employment and Social Development Canada (Yellowknife) 27 June 2018. Access Date: 19 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-agreement-to-give-workers-in-northwest-territories-tools-and-training-to-find-and-keep-good-jobs.html>.

⁷¹⁴ Government of Canada announces agreement to give workers in Northwest Territories tools and training to find and keep good jobs, Ministry of Employment and Social Development Canada (Yellowknife) 27 June 2018. Access Date: 19 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/06/government-of-canada-announces-agreement-to-give-workers-in-northwest-territories-tools-and-training-to-find-and-keep-good-jobs.html>.

⁷¹⁵ Canadian researchers connect with business and international peers to train next generation of science and engineering leaders, Natural Sciences and Engineering Research Council of Canada (Sherbrooke). 16 July 2018. Access Date: 15 October 2018. http://www.nserc-crsng.gc.ca/Media-Media/NewsRelease-CommuniqueDePresse_eng.asp?ID=996.

⁷¹⁶ Government of Canada announces agreement to give workers of Newfoundland and Labrador the tools they need to find and keep good jobs, Ministry of Employment and Social Development Canada (St. John's). 3 August 2018. Access Date: 19 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/08/government-of-canada-announces-agreement-to-give-workers-of-newfoundland-and-labrador-the-tools-they-need-to-find-and-keep-good-jobs.html>.

⁷¹⁷ Government of Canada will provide 1,200 paid internships to graduates, Ministry of Innovation, Science and Economic Development Canada (Ottawa). 3 August 2018. Access Date: 15 October 2018. <https://www.canada.ca/en/innovation-science-economic-development/news/2018/08/government-of-canada-will-provide-1200-paid-internships-to-graduates.html>

⁷¹⁸ Government of Canada provides skills training and job opportunities for young Canadians in Duncan, British Columbia, Ministry of Employment and Social Development Canada (Duncan). 21 August 2018. Access Date: 10 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/08/government-of-canada-provides-skills-training-and-job-opportunities-for-young-canadians-in-duncan-british-columbia.html>.

On 18 September 2018, Minister Patty Hajdu announced that the federal government will subsidize over CAD1.5 million to the Native Education College for the Essential Skills for Aboriginal Business project.⁷²⁰ The project aims to increase literacy and employment skills of aboriginal people by providing training models that “combin[e] employability skills, literacy, and essential skills training and workplace simulation activities.”⁷²¹

On 21 September 2018, the Minister of Employment, Workforce Development and Labor, Patty Hajdu, announced that the government of Canada will subsidize CAD618,000 to the Ontario provincial government to launch the Ontario Electrical League for the Consortia Pilot Project.⁷²² The program will provide apprentice training to teach workers in the electrical sector necessary skills in meeting the needs of today’s labour market.⁷²³

On 9 October 2018, the Minister of Innovation, Science and Economic Development, Navdeep Bains, announced that the government will invest CAD25 million in the Creative Destruction Lab at the University of Toronto’s Rotman School of Management to help young entrepreneurs venture business investment and opportunity in innovative technology and to help develop women’s leadership and representation in science, technology, engineering, and mathematics fields.⁷²⁴

On 19 October 2018, the Government of Canada announced it will provide up to CAD49.9 million funding to ArcelorMittal Canada Inc, to support up to 4,700 middle-class jobs in Ontario and 1,700 jobs in Quebec by helping the company to modernize its equipment.⁷²⁵

On 25 October 2018, the Government of Canada announced that it will provide a CAD8 million funding to the Niagara Peninsula Aboriginal Area Management Board to facilitate the Government of Canada’s Adult Learning, Literacy and Essential Skills Program and the Skills and Partnership

⁷¹⁹ The Honourable Patty Hajdu announces funding for training equipment to help apprentices in Thunder Bay complete their skills training and be workforce- ready, Ministry of Employment and Social Development Canada (Canada). 30 August 2018. Access Date: 10 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/08/the-honourable-patty-hajdu-announces-funding-for-training-equipment-to-help-apprentices-in-thunder-bay-complete-their-skills-training-and-be-workfo.html>.

⁷²⁰ Government of Canada helps Indigenous people in Vancouver get the literacy and essential skills they need to find good jobs, Ministry of Employment and Social Development Canada (Vancouver) 18 September 2018. Access Date: 10 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/09/government-of-canada-helps-indigenous-people-in-vancouver-get-the-literacy-and-essential-skills-they-need-to-find-good-jobs.html>.

⁷²¹ Government of Canada helps Indigenous people in Vancouver get the literacy and essential skills they need to find good jobs, Ministry of Employment and Social Development Canada (Vancouver) 18 September 2018. Access Date: 10 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/09/government-of-canada-helps-indigenous-people-in-vancouver-get-the-literacy-and-essential-skills-they-need-to-find-good-jobs.html>

⁷²² Ontario employers get help to hire and train apprentices in the electrical sector with Government of Canada’s support, Ministry of Employment and Social Development Canada (Etobicoke) 21 September 2018. Access Date: 15 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/09/ontario-employers-get-help-to-hire-and-train-apprentices-in-the-electrical-sector-with-government-of-canadas-support.html>

⁷²³ Ontario employers get help to hire and train apprentices in the electrical sector with Government of Canada’s support, Ministry of Employment and Social Development Canada (Etobicoke) 21 September 2018. Access Date: 15 October 2018. <https://www.canada.ca/en/employment-social-development/news/2018/09/ontario-employers-get-help-to-hire-and-train-apprentices-in-the-electrical-sector-with-government-of-canadas-support.html>

⁷²⁴ Government of Canada invests in Creative Destruction Lab at the University of Toronto’s Rotman School of Management, University of Toronto Rotman School of Management (Toronto) 9 October 2018. Access Date: 15 October 2018. http://www.rotman.utoronto.ca/Connect/MediaCentre/NewsReleases/20181009?fbclid=IwAR2Xk1nLizuOA701aIDe0HHhbp4mDdwwY3j6lzd3Fekl80_7-gxTGSICH4Y.

⁷²⁵ Government announces support for 6,400 Canadian steel workers in Ontario and Quebec, Ministry of Innovation, Science and Economic Development Canada (Hamilton) 19 October 2018. Access Date: 1 December 2018.

Fund, which help Indigenous youth across southern Ontario to gain work experiences in tourism, hospitality, and the building trades as well as necessary skills and job trainings in these fields.⁷²⁶

On 12 November 2018, the Government of Canada announced funding to the YMCA of Simcoe/Muskoka to facilitate its Youth Quest project that will help 600 young Canadians gain skills and job training through work experience in construction, manufacturing, retail/wholesale, accommodation, and food service, and general office/customer service fields.⁷²⁷

On 28 November 2018, the Government of Canada released its Fall Economic Statement 2018, where it proposed to establish a Social Finance Fund that will help to create more jobs and build a more equal job market in Canada.⁷²⁸ The Government of Canada aims to finance CAD755 million over the next 10 years into establishing the Social Finance Fund, that will contribute to helping non-profit organizations and increasing job opportunities among the middle-class.⁷²⁹

On 3 December 2018, the Government of Canada announced funding to the Women Entrepreneurship Knowledge Hub, which “ensur[es] women entrepreneurs and the organizations that support them will have the information they need to increase participation of women in the economy.”⁷³⁰ The Minister of Small Business and Export Promotion Mary Ng announced that the Government of Canada will invest nearly CAD9 million over the next three years into the program to facilitate women participation and women entrepreneurship in Canada.⁷³¹

On 3 December 2018, the Ministry of Innovation, Science and Economic Development announced the Regional Economic Growth through Innovation program, where it will fund Canada’s Regional Development Agencies to fund businesses through development stages and to create an inclusive ecosystem that will help businesses thrive in the changing world of innovative technologies.⁷³²

On 3 to 5 December 2018, the Government of Canada announced its agreement with the provincial governments of Nunavut, New Brunswick, and Manitoba to provide funding from the federal

⁷²⁶ Government of Canada helps over 260 Indigenous youth across southern Ontario region improve job skills and gain work experience, Ministry of Employment and Social Development Canada (Welland) 25 October 2018. 1 December 2018. <https://www.canada.ca/en/employment-social-development/news/2018/10/government-of-canada-helps-over-260-indigenous-youth-across-southern-ontario-region-improve-job-skills-and-gain-work-experience.html>.

⁷²⁷ Government of Canada provides skills training and job opportunities for 600 young Canadians in Barrie area, Ministry of Employment and Social Development Canada (Barrie) 12 November 2018. Access Date: 1 December 2018. <https://www.canada.ca/en/employment-social-development/news/2018/11/government-of-canada-provides-skills-training-and-job-opportunities-for-600-young-canadians-in-barrie-area.html>

⁷²⁸ Government of Canada announces fund that will have a real impact for the middle class, Ministry of Innovation, Science and Economic Development Canada (Mississauga) 28 November 2018. Access Date: 1 December 2018. <https://www.canada.ca/en/innovation-science-economic-development/news/2018/11/government-of-canada-announces-fund-that-will-have-a-real-impact-for-the-middle-class.html>.

⁷²⁹ Government of Canada announces fund that will have a real impact for the middle class, Ministry of Innovation, Science and Economic Development Canada (Mississauga) 28 November 2018. Access Date: 1 December 2018. <https://www.canada.ca/en/innovation-science-economic-development/news/2018/11/government-of-canada-announces-fund-that-will-have-a-real-impact-for-the-middle-class.html>.

⁷³⁰ Minister Ng announces funding for research on women entrepreneurship, Ministry of Innovation, Science and Economic Development Canada (Ottawa) 3 December 2018. Access Date: 7 December 2018.

⁷³¹ Minister Ng announces funding for research on women entrepreneurship, Ministry of Innovation, Science and Economic Development Canada (Ottawa) 3 December 2018. Access Date: 7 December 2018. <https://www.canada.ca/en/innovation-science-economic-development/news/2018/11/minister-ng-announces-funding-for-research-on-women-entrepreneurship.html>.

⁷³² New regional innovation programming supports business development and growth, Ministry of Innovation, Science and Economic Development Canada (Ottawa) 3 December 2018. Access Date: 7 December 2018. <https://www.canada.ca/en/innovation-science-economic-development/news/2018/12/new-regional-innovation-programming-supports-business-development-and-growth.html>.

government to help increase workers benefit and jobs and skills training to workers, especially minorities such as people with disabilities, women, and Indigenous peoples to stay in the job field and to thrive in their work in the changing world of technology.^{733,734,735}

On 6 December 2018, Canada held the G7 Conference on Artificial Intelligence, where Prime Minister Justin Trudeau announced the Government of Canada will invest up to CAD230 million for the AI-Powered Supply Chains Supercluster, which will create more than 16,000 jobs over the next 10 years.⁷³⁶

Canada has demonstrated its compliance by providing funds to provincial governments and organizations to create skills training programs, increasing funding to apprentice programs in various sectors of work, such that various underrepresented groups in the labour market, e.g. women, Indigenous people and those with disabilities, can have the skills and education to adapt and prosper in the changing economy.

Thus, Canada receives a score of +1.

Analyst: Jijun Meng

France: +1

France has fully complied with its commitment to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

On 14 June 2018, the Minister of Labour, Muriel Pénicaud unveiled plans for the development of a program to promote innovation amongst vulnerable people in the employment market.⁷³⁷ This comes as the next stage in the Skills Investment Plan, which aims to train two million unemployed people over the next five years.⁷³⁸ By focusing on developing skills related to innovation and local

⁷³³ Governments of Canada and Nunavut announce agreements to give workers the tools they need to find and keep good jobs, Ministry of Employment and Social Development Canada (Gatineau) 3 December 2018. Access Date: 6 December 2018.

⁷³⁴ Governments of Canada and New Brunswick announce agreements to give workers the tools they need to find and keep good jobs, Ministry of Employment and Social Development Canada (Gatineau) 4 December 2018. Access Date: 6 December 2018. <https://www.canada.ca/en/employment-social-development/news/2018/11/governments-of-canada-and-new-brunswick-announce-agreements-to-give-workers-the-tools-they-need-to-find-and-keep-good-jobs.html>.

⁷³⁵ Governments of Canada and Manitoba announce agreements to give workers the tools they need to find and keep good jobs, Ministry of Employment and Social Development Canada (Gatineau) 5 December 2018. Access Date: 6 December 2018. <https://www.canada.ca/en/employment-social-development/news/2018/11/governments-of-canada-and-manitoba-announce-agreements-to-give-workers-the-tools-they-need-to-find-and-keep-good-jobs.html>.

⁷³⁶ Prime Minister announces investment in artificial intelligence to create over 16,000 jobs for Canadians, Prime Minister's Office (Montreal) 5 December 2018. Access Date: 7 December 2018. <https://pm.gc.ca/eng/news/2018/12/06/prime-minister-announces-investment-artificial-intelligence-create-over-16000-jobs>.

⁷³⁷ 100% inclusion: promouvoir l'innovation sociale, Page officielle du Gouvernement français (Paris) 14 June 2018. Access Date: 10 October 2018. <https://www.gouvernement.fr/argumentaire/100-inclusion-promouvoir-l-innovation-sociale>.

⁷³⁸ 100% inclusion: promouvoir l'innovation sociale, Page officielle du Gouvernement français (Paris) 14 June 2018. Access Date: 10 October 2018. <https://www.gouvernement.fr/argumentaire/100-inclusion-promouvoir-l-innovation-sociale>.

start-ups, the Ministry of Labour hopes to provide young people with the skills needed to be competitive in the labour market.⁷³⁹

On 19 June 2018, the National Assembly provisionally adopted a proposed law on the Liberty to Choose One's Professional Future.⁷⁴⁰ The proposal makes explicit reference towards ensuring a developing economy through innovation.⁷⁴¹ The main focus of the law is that employees will have the capacity to work on international secondments. This fosters greater global sharing of techniques and skills and allows workers to develop their own skills in emerging areas of technology while abroad.⁷⁴²

On 21 June 2018, the France Stratégie (French Strategic Department) published a report on the different mechanisms to bring Blockchain technology to France.⁷⁴³ The main recommendations proposed by the working group on Blockchain focus on the need for interdisciplinary research and training development.⁷⁴⁴

On 21 June 2018, Prime Minister Édouard Philippe announced France's plans to invest in industrial research in technological and economic sectors while visiting the M2P Technological Research Institute.⁷⁴⁵ The plan consists of a commitment of EUR 57 billion in areas such as skills training in innovation as well as in alternative energy sources research and industry innovation.⁷⁴⁶ Part of the funding will also go towards technology start-ups to ensure that they have access to the support needed to remain competitive and to grow their "innovation ecosystems."⁷⁴⁷

On 10 July 2018, Prime Minister Édouard Philippe announced plans to develop multidisciplinary training for students to enhance their expertise in bioproduction and bio-informatics.⁷⁴⁸ He also

⁷³⁹ 100% inclusion: promouvoir l'innovation sociale, Page officielle du Gouvernement français (Paris) 14 June 2018. Access Date: 10 October 2018. <https://www.gouvernement.fr/argumentaire/100-inclusion-promouvoir-l-innovation-sociale>.

⁷⁴⁰ Le Projet de Loi 'Avenir Professionnel' Adopté par l'Assemblée Nationale, Actualités du droit (Paris) 19 June 2018. Access Date: 10 October 2018. <https://www.actualitesdudroit.fr/browse/social/fonction-rh-et-grh/14269/le-projet-de-loi-avenir-professionnel-adopte-par-l-assemblee-nationale>.

⁷⁴¹ Le Projet de Loi 'Avenir Professionnel' Adopté par l'Assemblée Nationale, Actualités du droit (Paris) 19 June 2018. Access Date: 10 October 2018. <https://www.actualitesdudroit.fr/browse/social/fonction-rh-et-grh/14269/le-projet-de-loi-avenir-professionnel-adopte-par-l-assemblee-nationale>.

⁷⁴² Le Projet de Loi 'Avenir Professionnel' Adopté par l'Assemblée Nationale, Actualités du droit (Paris) 19 June 2018. Access Date: 10 October 2018. <https://www.actualitesdudroit.fr/browse/social/fonction-rh-et-grh/14269/le-projet-de-loi-avenir-professionnel-adopte-par-l-assemblee-nationale>

⁷⁴³ Les Enjeux des Blockchains, France Stratégie (Paris) 21 June 2018. Access Date: 10 October 2018. <http://www.strategie.gouv.fr/publications/enjeux-blockchains>.

⁷⁴⁴ Les Enjeux des Blockchains, France Stratégie (Paris) 21 June 2018. Access Date: 10 October 2018. <http://www.strategie.gouv.fr/publications/enjeux-blockchains>

⁷⁴⁵ L'ambition de la France pour l'investissement et l'innovation, Page officielle du Gouvernement français (Paris) 21 June 2018. Access Date: 10 October 2018. <https://www.gouvernement.fr/partage/10317-notre-ambition-pour-l-investissement-et-l-innovation>.

⁷⁴⁶ L'ambition de la France pour l'investissement et l'innovation, Page officielle du Gouvernement français (Paris) 21 June 2018. Access Date: 10 October 2018. <https://www.gouvernement.fr/partage/10317-notre-ambition-pour-l-investissement-et-l-innovation>.

⁷⁴⁷ L'ambition de la France pour l'investissement et l'innovation, Page officielle du Gouvernement français (Paris) 21 June 2018. Access Date: 10 October 2018. <https://www.gouvernement.fr/partage/10317-notre-ambition-pour-l-investissement-et-l-innovation>.

⁷⁴⁸ Discours devant le Conseil Stratégique des Industries de Santé, Page officielle du Gouvernement français (Paris) 10 July 2018. <https://www.gouvernement.fr/partage/10373-discours-devant-le-conseil-strategique-des-industries-de-sante>

revealed new funding opportunities for biotechnology startups to pursue their research, especially in collaborative settings.⁷⁴⁹

On 10 July 2018, during the debate on the bill reforming apprenticeship and vocational training in the Senate, Minister of Labour Muriel Pénicaud announced that the government is considering the creation of a long-term unemployment benefit.⁷⁵⁰ This would be complemented by other assistance programs such as potential apprenticeships in developing economic sectors.⁷⁵¹

On 1 August 2018, Bruno Le Maire, France's Minister of Economy, met with Luigi Di Maio, Italy's Minister of Economic Development to discuss the industrial cooperation between two countries as well as the strategy of economic development at the bilateral level.⁷⁵² Two leaders agreed that a more ambitious European industrial policy is required to generate more jobs and increase competitiveness in the international field.⁷⁵³ They discussed the need for French and Italian industries to implement technologies of the future and bring them to the forefront of innovation.⁷⁵⁴ In the meeting, France and Italy highlighted that they will be working together on key projects like innovative textile, microelectronics as well as artificial intelligence⁷⁵⁵. Additionally, different financial models for investment have been discussed in order to support the growth of small and medium-sized enterprises.⁷⁵⁶ On 24 September 2018, two Ministers met again at the Friends of Industry Conference in Paris and further discussed the objectives mentioned above.⁷⁵⁷

⁷⁴⁹ Discours devant le Conseil Stratégique des Industries de Santé, Page officielle du Gouvernement français (Paris) 10 July 2018. <https://www.gouvernement.fr/partage/10373-discours-devant-le-conseil-strategique-des-industries-de-sante>.

⁷⁵⁰ Chômage: le gouvernement planche sur la création d'une allocation longue durée, Le Figaro (Paris) 10 July 2018. Access Date: 10 October 2018. <http://www.lefigaro.fr/flash-eco/2018/07/10/97002-20180710FILWWW00187-chomage-le-gouvernement-planche-sur-une-allocation-longue-duree.php>.

⁷⁵¹ Chômage: le gouvernement planche sur la création d'une allocation longue durée, Le Figaro (Paris) 10 July 2018. Access Date: 10 October 2018. <http://www.lefigaro.fr/flash-eco/2018/07/10/97002-20180710FILWWW00187-chomage-le-gouvernement-planche-sur-une-allocation-longue-duree.php>.

⁷⁵² Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁵³ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁵⁴ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁵⁵ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁵⁶ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁵⁷ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

On 1 October 2018, the Minister of Labour, Muriel Pénicaud, announced a plan to facilitate the professional integration of refugees.⁷⁵⁸ The Minister of Labour stated that the initial funding of the program will be EUR15 million and will aim to help 4,000–5,000 refugees by 2019.⁷⁵⁹ The plan aims to ensure the successful transition of migrant refugees into the modern French economy.⁷⁶⁰

On 2 October 2018, the Ministry of Education and the Ministry of Higher Education, Research and Innovation announced the Year of Chemistry which focuses on a series of events recognized the contributions of chemistry towards societal and economic development.⁷⁶¹ The program promotes scientific and technical culture to audiences of all ages. There will also be a round table on the links between chemistry, education, research, and industry.⁷⁶²

On 6 October 2018, the Ministry of Education launched the 6th year of Code Week France.⁷⁶³ The program consists of six introductory workshops on computer programming offered across 50 schools to help foster the development of digital skills.⁷⁶⁴ This year, the Ministry of Education partnered with several groups such as the League of Education, Columbus and Libraries Without Borders to provide code initiation workshops. Other events were held across the country for young people, parents and teachers alike.⁷⁶⁵

On 18 October 2018, the Ministry of Education's new platform, www.monstagedetroisieme.fr, went live.⁷⁶⁶ The platform aims to connect students and local companies through a variety of internship

⁷⁵⁸ Muriel Pénicaud annonce 15 millions d'euros pour l'insertion professionnelle des réfugiés, *Le Figaro* (Paris) 1 October 2018. Access Date: 10 October 2018. <http://www.lefigaro.fr/social/2018/10/01/20011-20181001ARTFIG00303-muriel-penicaud-annonce-15-millions-d-euros-pour-l-insertion-professionnelle-des-refugies.php>.

⁷⁵⁹ Muriel Pénicaud annonce 15 millions d'euros pour l'insertion professionnelle des réfugiés, *Le Figaro* (Paris) 1 October 2018. Access Date: 10 October 2018. <http://www.lefigaro.fr/social/2018/10/01/20011-20181001ARTFIG00303-muriel-penicaud-annonce-15-millions-d-euros-pour-l-insertion-professionnelle-des-refugies.php>.

⁷⁶⁰ Muriel Pénicaud annonce 15 millions d'euros pour l'insertion professionnelle des réfugiés, *Le Figaro* (Paris) 1 October 2018. Access Date: 10 October 2018. <http://www.lefigaro.fr/social/2018/10/01/20011-20181001ARTFIG00303-muriel-penicaud-annonce-15-millions-d-euros-pour-l-insertion-professionnelle-des-refugies.php>.

⁷⁶¹ Lancement de l'Année de la chimie de l'école à l'université : Comment la chimie contribue-t-elle à la connaissance, à l'économie et à la société? Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 2 October 2018. Access Date: 10 October 2018. <http://www.education.gouv.fr/cid134649/lancement-de-l-annee-de-la-chimie-de-l-ecole-a-l-universite.html>.

⁷⁶² Lancement de l'Année de la chimie de l'école à l'université : Comment la chimie contribue-t-elle à la connaissance, à l'économie et à la société? Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 2 October 2018. Access Date: 10 October 2018. <http://www.education.gouv.fr/cid134649/lancement-de-l-annee-de-la-chimie-de-l-ecole-a-l-universite.html>.

⁷⁶³ Lancement de la 6e édition de la "Code Week" France : deux semaines pour célébrer l'apprentissage du code et la programmation numérique Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 6 October 2018. Access Date: 10 October 2018. <http://www.education.gouv.fr/cid135146/lancement-de-la-6e-edition-de-la-code-week-france.html>.

⁷⁶⁴ Lancement de la 6e édition de la "Code Week" France : deux semaines pour célébrer l'apprentissage du code et la programmation numérique Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 6 October 2018. Access Date: 10 October 2018. <http://www.education.gouv.fr/cid135146/lancement-de-la-6e-edition-de-la-code-week-france.html>.

⁷⁶⁵ Lancement de la 6e édition de la "Code Week" France : deux semaines pour célébrer l'apprentissage du code et la programmation numérique Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 6 October 2018. Access Date: 10 October 2018. <http://www.education.gouv.fr/cid135146/lancement-de-la-6e-edition-de-la-code-week-france.html>.

⁷⁶⁶ Jean-Michel Blanquer et Julien Denormandie appellent les entreprises à se mobiliser pour proposer des stages aux élèves de 3e des quartiers prioritaires, Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 18 November 2018. Access Date: 7 December 2018. <http://www.education.gouv.fr/cid135351/jean-michel-blanquer-et-julien-denormandie-appellent-les-entreprises-a-se-mobiliser-pour-proposer-des-stages-aux-eleves-de-3e-des-quartiers-prioritaires.html>.

schemes to provide preparation for students entering the modern French labour market.⁷⁶⁷ The early provision of internships is enabled by the French government's large-scale mobilization of companies across a variety of fields.⁷⁶⁸

On 25 October 2018, Prime Minister Édouard Philippe convened the 2nd Interministerial Committee on Disability.⁷⁶⁹ One of the five priorities is to fund start-ups working on technological aids for people with disabilities and employing artificial intelligence in a socially conscious way and thus provide important access to funding and expertise to further foster innovation in this field.⁷⁷⁰

On 11 November 2018, the French Government launched Paris Digital Week, bringing together academics, industry and civil society representatives to participate in workshops and seminars on developing plans to tackle digital challenges.⁷⁷¹ Hundreds of innovative projects were presented and special focus was given to developing youth involvement in these areas.⁷⁷² The GovTech summit that took place on November 12 especially worked on developing plans to support the new European ecosystem of innovators and fostered collaboration between government agencies and start-ups.⁷⁷³

France has demonstrated care to furthering both access to skills and education needed for its labour market in order to prosper in the new age filled emerging technologies. This was seen through programs like the sixth year of Code Week France and plan to facilitate the professional integration of refugees.

Thus, France receives a score of +1.

Analyst: Ioana Burtica

Germany: +1

Germany has fully complied with its commitment to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

⁷⁶⁷ Jean-Michel Blanquer et Julien Denormandie appellent les entreprises à se mobiliser pour proposer des stages aux élèves de 3e des quartiers prioritaires, Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 18 November 2018. Access Date: 7 December 2018. <http://www.education.gouv.fr/cid135351/jean-michel-blanquer-et-julien-denormandie-appellent-les-entreprises-a-se-mobiliser-pour-proposer-des-stages-aux-eleves-de-3e-des-quartiers-prioritaires.html>.

⁷⁶⁸ Jean-Michel Blanquer et Julien Denormandie appellent les entreprises à se mobiliser pour proposer des stages aux élèves de 3e des quartiers prioritaires, Ministère de l'Éducation Nationale et de la Jeunesse (Paris) 18 November 2018. Access Date: 7 December 2018. <http://www.education.gouv.fr/cid135351/jean-michel-blanquer-et-julien-denormandie-appellent-les-entreprises-a-se-mobiliser-pour-proposer-des-stages-aux-eleves-de-3e-des-quartiers-prioritaires.html>.

⁷⁶⁹ Les cinq grandes priorités du Comité interministériel du handicap 2018, Page officielle du Gouvernement français (Paris) 24 October 2018. Access Date: 7 December 2018. <https://www.gouvernement.fr/argumentaire/les-cinq-grandes-priorites-du-comite-interministeriel-du-handicap-2018>.

⁷⁷⁰ Les cinq grandes priorités du Comité interministériel du handicap 2018, Page officielle du Gouvernement français (Paris) 24 October 2018. Access Date: 7 December 2018. <https://www.gouvernement.fr/argumentaire/les-cinq-grandes-priorites-du-comite-interministeriel-du-handicap-2018>.

⁷⁷¹ Paris Digital Week: découvrez le programme, Page officielle du Gouvernement français (Paris) 11 November 2018. Access Date: 7 December 2018.

⁷⁷² Paris Digital Week: découvrez le programme, Page officielle du Gouvernement français (Paris) 11 November 2018. Access Date: 7 December 2018. <https://www.gouvernement.fr/paris-digital-week-decouvrez-le-programme>.

⁷⁷³ Paris Digital Week: découvrez le programme, Page officielle du Gouvernement français (Paris) 11 November 2018. Access Date: 7 December 2018. <https://www.gouvernement.fr/paris-digital-week-decouvrez-le-programme>.

On 12 June 2018, the Federal Ministry of Education and Research held the first symposium of the Cliché-free Initiative in Berlin, where panel sessions and job orientations took place to encourage young women and men to explore their career option.⁷⁷⁴

On 18 July 2018, the Federal Cabinet of Germany passed a law amendment on creating opportunities for long-term unemployed individuals.⁷⁷⁵ Germany will offer employment assistance on the job for newly employed individuals to get used to the new working environment as part of the program alongside with government subsidy.⁷⁷⁶

On 10 August 2018, the Federal Ministry of Economic Affairs and Energy announced the German government will increase the subsidy of inter-company vocational training centers to fully digitalize their equipment in order to help prepare SMEs and workers for the digitalized world.⁷⁷⁷ State Secretary Dr. Ulrich Nussbaum mentioned that the nation-wide network of centers would help SMEs and the craft sector “keep pace with changes.”⁷⁷⁸

On 22 October 2018, the German Patent and Trade Mark Office along with “SINGA Deutschland,” “LOK StartupCamp” and “Start-Up Your Future” provided a conference on information about the intellectual property to migrants and refugees wishing to start companies in Germany.⁷⁷⁹ The conference shared information on intellectual property to SME entrepreneurs with immigration background and migrants and refugees who wish to become start-up entrepreneurs hoping to engage them in meaningful conversations and spread information for them to achieve success in Germany.⁷⁸⁰

On 2 October 2018, Germany adopted a new immigration law that allows companies to recruit more skilled foreign workers, stop the priority requirement that insist companies to choose German workers first in the pool of candidates, and encourages foreign graduates and workers with vocational training to come to Germany and gain work experience.⁷⁸¹

⁷⁷⁴ Gemeinsam für eine Berufswahl ohne Grenzen, Bundesministerium für Bildung und Forschung (Berlin). 12 June 2018. Access Date: 15 October 2018. <https://www.bmbf.de/de/gemeinsam-fuer-eine-berufswahl-ohne-grenzen-6352.html>.

⁷⁷⁵ Neue Perspektiven und Teilhabechancen durch öffentlich geförderte Arbeit, Bundesministerium für Arbeit und Soziales (Berlin) 18 July 2018. Access Date: 15 October 2018. <https://www.bmas.de/DE/Presse/Pressemitteilungen/2018/teilhabechancengesetz.html>.

⁷⁷⁶ Neue Perspektiven und Teilhabechancen durch öffentlich geförderte Arbeit, Bundesministerium für Arbeit und Soziales (Berlin) 18 July 2018. Access Date: 15 October 2018. <https://www.bmas.de/DE/Presse/Pressemitteilungen/2018/teilhabechancengesetz.html>.

⁷⁷⁷ Higher grants for digitization in advanced training institutions, Federal Ministry for Economic Affairs and Energy (Berlin) 10 August 2018. Access Date: 10 October 2018. <https://www.bmwi.de/Redaktion/EN/Pressemitteilungen/2018/20180810-hoehere-zuschuesse-fuer-die-digitalisierung-von-weiterbildungseinrichtungen.html>.

⁷⁷⁸ Higher grants for digitization in advanced training institutions, Federal Ministry for Economic Affairs and Energy (Berlin) 10 August 2018. Access Date: 10 October 2018. <https://www.bmwi.de/Redaktion/EN/Pressemitteilungen/2018/20180810-hoehere-zuschuesse-fuer-die-digitalisierung-von-weiterbildungseinrichtungen.html>.

⁷⁷⁹ The DPMA provides IP information to people with migrant and refugee backgrounds, German Patent and Trade Mark Office (Berlin) 7 December 2018. Access Date: 7 December 2018.

⁷⁸⁰ The DPMA provides IP information to people with migrant and refugee backgrounds, German Patent and Trade Mark Office (Berlin) 7 December 2018. Access Date: 7 December 2018. https://www.dpma.de/english/our_office/publications/guestsatdpma/infoday/index.html.

⁷⁸¹ Germany Agrees on Immigration Law to Tackle Labor Shortages, U.S. News & World Report L.P. (U.S.) 2 October 2018. Access Date: 1 December 2018. <https://www.usnews.com/news/world/articles/2018-10-02/german-parties-agree-on-immigration-law-to-tackle-labor-shortages>.

On 16 November 2018, Germany adopted its Artificial Intelligence Strategy, with the goals of “making Germany and Europe global leaders on the development and use of AI technologies and securing Germany’s competitiveness in the future, safeguarding the responsible development and use of AI which serves the good of society, and integrating AI in society in ethical, legal, cultural and institutional terms in the context of a broad societal dialogue and active political measures.”⁷⁸² The federal government will invest EUR3 billion promote innovation in the private sector by sending AI instructors to SMEs to support enterprises in learning the technology.⁷⁸³ The federal government will also “strengthen AI research and education at higher education institutions ... [and] promote the transfer of AI to businesses and society.”⁷⁸⁴

On 19-20 November 2018, the Federal Ministry of Labor and Social Affairs took the opportunity of Inclusion Days to discuss and facilitate learning among people with disabilities on how digitalization could help them in terms of their work and in their workplace.⁷⁸⁵

On 26 November 2018, the Federal Minister of Education and Research, Thomas Rachel, launched a support program of the Vocational Training Program to train workers in terms of foreign language skills and other key skills necessary to thrive in the workplace and to allow international participation in this program.⁷⁸⁶ The federal government will provide funding of EUR3 million in 2019 and more in 2020 and 2021 to support international mobility and more worker participation in the support program.⁷⁸⁷

On 7 December 2018, the Federal Ministry of Labor and Social Affairs began to receive applications for new projects for the 2019 funding period of the Participation Fund.⁷⁸⁸ Eligible projects include

⁷⁸² Federal Government adopts Artificial Intelligence Strategy, Federal Ministry for Economic Affairs and Energy (Berlin) 16 November 2018. Access Date: 1 December 2018. <https://www.de.digital/DIGITAL/Redaktion/EN/Meldungen/2018/2018-11-16-federal-government-adopts-artificial-intelligence-strategy.html>.

⁷⁸³ Federal Government adopts Artificial Intelligence Strategy, Federal Ministry for Economic Affairs and Energy (Berlin) 16 November 2018. Access Date: 1 December 2018. <https://www.de.digital/DIGITAL/Redaktion/EN/Meldungen/2018/2018-11-16-federal-government-adopts-artificial-intelligence-strategy.html>.

⁷⁸⁴ Federal Government adopts Artificial Intelligence Strategy, Federal Ministry for Economic Affairs and Energy (Berlin) 16 November 2018. Access Date: 1 December 2018. <https://www.de.digital/DIGITAL/Redaktion/EN/Meldungen/2018/2018-11-16-federal-government-adopts-artificial-intelligence-strategy.html>.

⁷⁸⁵ "Digitalisierung nutzen, um neue Teilhabechancen zu eröffnen", Bundesministerium für Arbeit und Soziales (Berlin) 20 November 2018. Access Date: 1 December 2018. <https://www.bmas.de/DE/Presse/Pressemitteilungen/2018/inklusionstage-2018.html>.

⁷⁸⁶ AusbildungWeltweit: Mehr Mobilität für Auszubildende, Bundesministerium für Bildung und Forschung (Berlin) 26 November 2018. Access Date: 1 December 2018. <https://www.bmbf.de/de/ausbildungweltweit-mehr-mobilitaet-fuer-auszubildende-7413.html>.

⁷⁸⁷ AusbildungWeltweit: Mehr Mobilität für Auszubildende, Bundesministerium für Bildung und Forschung (Berlin) 26 November 2018. Access Date: 1 December 2018. <https://www.bmbf.de/de/ausbildungweltweit-mehr-mobilitaet-fuer-auszubildende-7413.html>.

⁷⁸⁸ Förderbekanntmachung des Bundesministeriums für Arbeit und Soziales, Bundesministerium für Arbeit und Soziales (Berlin) 7 December 2018. Access Date: 7 December 2018. <https://www.bmas.de/DE/Presse/Meldungen/2018/foerderbekanntmachung-des-bundesministeriums-fuer-arbeit-und-soziales.html>.

further training for self-employment organizations and work exchange opportunities, where accepted project will receive EUR6,000 per year.⁷⁸⁹

Germany is providing financial support to allow long-term unemployed individuals and those in certain sectors to have the skills necessary to prosper in the new world of work. Germany is also passing legislation to allow foreign workers and vocational training students to gain work experience in Germany under a selection process without bias. Germany is providing funding for skill training and work experience projects. Therefore, Germany fully complies with the commitment.

Thus, Germany receives a score of +1.

Analyst: Jijun Meng

Italy: +1

Italy has fully complied with its commitment to ensure all workers have access to skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

On 23 July 2018, Sant'Anna School Biorobotics Institute researchers have announced their involvement with two projects, funded by Regional Operational Program of the European Regional Development Fund 2020.⁷⁹⁰ The projects will aim to enhance productivity in the healthcare system through digital technology development and automation research.⁷⁹¹ The projects Congelamento Robotico Sicuro di sacche di plasma and Central Automated Process for Sterilization Units in a Lean Activity will take place at Sant-Anna School's Competence Centre. Competence centres are also part of the larger national strategy of Industria 4.0.⁷⁹²

On 1 August 2018, Luigi Di Maio, Italy's Minister of Economic Development met with Bruno Le Maire, France's Minister of Economy, to discuss the industrial cooperation between two countries as well as the strategy of economic development at the bilateral level.⁷⁹³ Two leaders agreed that a more ambitious European industrial policy is required to generate more jobs and increase competitiveness in the international field.⁷⁹⁴ They discussed the need for French and Italian industries to implement

⁷⁸⁹ Förderbekanntmachung des Bundesministeriums für Arbeit und Soziales, Bundesministerium für Arbeit und Soziales (Berlin) 7 December 2018. Access Date: 7 December 2018.

<https://www.bmas.de/DE/Presse/Meldungen/2018/foerderbekanntmachung-des-bundesministeriums-fuer-arbeit-und-soziales.html>.

⁷⁹⁰ Italian National Plan for Industry 4.0, Sant'Anna School of Advanced Studies (Rome) 2 June 2018. Access Date: 16 October 2018. <https://www.santannapisa.it/en/news/italian-national-plan-industry-40-santanna-school-launches-artes-40-competence-centre-focused>.

⁷⁹¹ Italian National Plan for Industry 4.0, Sant'Anna School of Advanced Studies (Rome) 2 June 2018. Access Date: 16 October 2018. <https://www.santannapisa.it/en/news/italian-national-plan-industry-40-santanna-school-launches-artes-40-competence-centre-focused>.

⁷⁹² Italian National Plan for Industry 4.0, Sant'Anna School of Advanced Studies (Rome) 2 June 2018. Access Date: 16 October 2018. <https://www.santannapisa.it/en/news/italian-national-plan-industry-40-santanna-school-launches-artes-40-competence-centre-focused>.

⁷⁹³ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁹⁴ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

technologies of the future and bring them to the forefront of innovation.⁷⁹⁵ In the meeting, Italy and France highlighted that they will be working together on key projects such as innovative textile, microelectronics as well as artificial intelligence.⁷⁹⁶ Additionally, different financial models for investment have been discussed in order to support the growth of small and medium-sized enterprises (SMEs).⁷⁹⁷ On 24 September 2018, two ministers met again at the Friends of Industry Conference in Paris and further discussed the objectives mentioned above.⁷⁹⁸

On 14 September 2018, Italy's Ministry of Economic Development launched a call for applicants to set up a group of experts for the drafting of a national strategy on artificial intelligence (AI).⁷⁹⁹ Luigi Di Maio, the Minister of Economic Development, has announced that the group will be composed by; ten representing enterprises operating in the field of AI; ten representing research centres, academics, think-tanks; ten representing the labour market, the professions, the third sector, the consumers and in general the civil society; as well as the Minister's representatives.⁸⁰⁰ The National Strategy plan will address policies and tools in order to coordinate and strengthen the research in the AI field, attract talents and develop business as well as promote public and private investments in AI.⁸⁰¹ Once drafted, the package will be submitted to public consultation.⁸⁰²

On 20 September 2018, Italy organized the 26th annual Pontignano Conference, in collaboration with the British Council at the British Embassy in Italy.⁸⁰³ The topic of the two-day event was "Bridging the Gaps" and the implications of the technological changes in education, innovation, and business were discussed.⁸⁰⁴ Special Commissioner for the Implementation of the Italian Government Digital Agenda, Diego Piacentini, was a distinguished speaker along with many experts from various

⁷⁹⁵ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018.

<http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁹⁶ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018.

<http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁹⁷ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018.

<http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁹⁸ Italy and France, bilateral meeting on economic development and industrial cooperation, Italy Ministry of Economic Development (Rome) 1 August 2018. Access Date: 15 October 2018.

<http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038466-italy-and-france-bilateral-meeting-on-economic-development-and-industrial-cooperation>.

⁷⁹⁹ Artificial intelligence (AI): call for experts, Italy Ministry of Economic Development (Rome) 14 September 2018. Access Date: 10 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038605-artificial-intelligence-ai-call-for-experts>.

⁸⁰⁰ Artificial intelligence (AI): call for experts, Italy Ministry of Economic Development (Rome) 14 September 2018. Access Date: 10 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038605-artificial-intelligence-ai-call-for-experts>.

⁸⁰¹ Artificial intelligence (AI): call for experts, Italy Ministry of Economic Development (Rome) 14 September 2018. Access Date: 10 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038605-artificial-intelligence-ai-call-for-experts>.

⁸⁰² Artificial intelligence (AI): call for experts, Italy Ministry of Economic Development (Rome) 14 September 2018. Access Date: 10 October 2018. <http://www.sviluppoeconomico.gov.it/index.php/en/202-news-english/2038605-artificial-intelligence-ai-call-for-experts>.

⁸⁰³ 26th Pontignano Conference: "Bridging the Gaps", British Embassy (Rome) 19 September 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/news/26th-pontignano-conference-bridging-the-gaps>.

⁸⁰⁴ 26th Pontignano Conference: "Bridging the Gaps", British Embassy (Rome) 19 September 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/news/26th-pontignano-conference-bridging-the-gaps>.

fields.⁸⁰⁵ Senior representatives of the London and Rome governments, including the British Deputy Prime Minister David Lidington and the Undersecretary of State at the Presidency of the Council of Ministers Giancarlo Giorgetti were also present at the event. The conference included many workshops, panels, and debates regarding the effects of AI on the economy, definition, and creation of the future of work, ways to bridge together education and workers' skills, as well as innovation investments.⁸⁰⁶

On 4 October 2018, an award ceremony for the best digital projects developed by high schools in the provinces of Biella and Vercelli was held.⁸⁰⁷ The event was organized by the Institute Eugenio Bona and was part the larger Digital National School Plan (PNSD).⁸⁰⁸ The reward was a voucher for EUR1500 to spend on school's digital equipment and a voucher of EUR1000 that can be spent on a variety of projects linked to robotics or coding.⁸⁰⁹ Ministry of Education has launched the PNSD, to achieve a comprehensive innovation strategy across the country's school system, adopting into the digital age. This plan is one of the pillars of "La Buona Scuola" reform, that was created in 2015, with a vision of increasing the digital education opportunities.⁸¹⁰ And, La Buona Scuola reforms are part of the National Business Plan 4.0, also known as the "Industria 4.0."⁸¹¹ This is Italy's national strategy for digitizing the economy.⁸¹² It boosts innovation-driven economic growth through a wide range of policy measures to spur both domestic and international investment.⁸¹³ The cornerstones of the plan include tax incentives for innovative start-ups, research and development expenditures, and patenting procedures as well as super and hyper depreciation policies for investments in selected industrial equipment (such as machinery that can convert information through the Internet of Things).⁸¹⁴

On 16 October 2018, the Undersecretary of the Ministry of Economic Development, Claudio Cominardi, stated, "the Employment Centers will again play a key role for citizens and businesses, as is the case in European countries."⁸¹⁵ In his speech, he also commented, "today is officially the start of a strategic reform for employment and active policies of the country."⁸¹⁶ Employment Centre

⁸⁰⁵ 26th Pontignano Conference: "Bridging the Gaps", British Embassy (Rome) 19 September 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/news/26th-pontignano-conference-bridging-the-gaps>.

⁸⁰⁶ 26th Pontignano Conference: "Bridging the Gaps", British Embassy (Rome) 19 September 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/news/26th-pontignano-conference-bridging-the-gaps>.

⁸⁰⁷ Digital school, awarded at the Bona schools of Biella and Vercelli, Biella (Rome) 4 October 2018. Access Date: 11 October 2018. <https://biella.diariodelweb.it/biella/articolo/?nid=20181004-529513>.

⁸⁰⁸ Digital school, awarded at the Bona schools of Biella and Vercelli, Biella (Rome) 4 October 2018. Access Date: 11 October 2018. <https://biella.diariodelweb.it/biella/articolo/?nid=20181004-529513>.

⁸⁰⁹ Digital school, awarded at the Bona schools of Biella and Vercelli, Biella (Rome) 4 October 2018. Access Date: 11 October 2018. <https://biella.diariodelweb.it/biella/articolo/?nid=20181004-529513>.

⁸¹⁰ Digital school, awarded at the Bona schools of Biella and Vercelli, Biella (Rome) 4 October 2018. Access Date: 11 October 2018. <https://biella.diariodelweb.it/biella/articolo/?nid=20181004-529513>.

⁸¹¹ Incentives to investors: Italy's Industria 4.0, Ministry of Economic Development (Rome). Access Date: 16 October 2018. <https://investorvisa.mise.gov.it/index.php/en/home-en/incentives-to-investors-italy-s-industria-4-0-plan>.

⁸¹² Incentives to investors: Italy's Industria 4.0, Ministry of Economic Development (Rome). Access Date: 16 October 2018. <https://investorvisa.mise.gov.it/index.php/en/home-en/incentives-to-investors-italy-s-industria-4-0-plan>.

⁸¹³ Incentives to investors: Italy's Industria 4.0, Ministry of Economic Development (Rome). Access Date: 16 October 2018. <https://investorvisa.mise.gov.it/index.php/en/home-en/incentives-to-investors-italy-s-industria-4-0-plan>.

⁸¹⁴ Incentives to investors: Italy's Industria 4.0, Ministry of Economic Development (Rome). Access Date: 16 October 2018. <https://investorvisa.mise.gov.it/index.php/en/home-en/incentives-to-investors-italy-s-industria-4-0-plan>.

⁸¹⁵ Employment Centers will once again play a key role for citizens and businesses, Ministry of Labor and Social Policies (Rome), 16 October 2018. Access Date: 10 December 2018. <http://www.lavoro.gov.it/stampa-e-media/Comunicati/Pagine/I-centri-per-l-impiego-torneranno-ad-avere-un-ruolo-chiave-per-i-cittadini-e-per-le-imprese.aspx>.

⁸¹⁶ Employment Centers will once again play a key role for citizens and businesses, Ministry of Labor and Social Policies (Rome), 16 October 2018. Access Date: 10 December 2018. <http://www.lavoro.gov.it/stampa-e-media/Comunicati/Pagine/I-centri-per-l-impiego-torneranno-ad-avere-un-ruolo-chiave-per-i-cittadini-e-per-le-imprese.aspx>.

plans aim to strengthen the training of workers, the adaptation of facilities and IT equipment, and accelerate the use of new technologies to streamline the processes.⁸¹⁷

On 30 November 2018, the National Award for Innovation-PNI was held.⁸¹⁸ This event is organized by the Association of University Incubators-PNICube, in partnership with Chamber of Commerce, and qualifies as Italy's most famous and widespread business plan competition.⁸¹⁹ This year's theme was "Destination Impresa 4.0," referring to the concepts of innovation, digitalization and most specifically, the Ministry of Economic Development's National Industry 4.0 Plan.⁸²⁰ The prize for the first place was over EUR1 million and it was awarded to a start-up named MOI.⁸²¹ MOI developed an additive manufacturing technology capable of producing high-performance products in composite material.⁸²² Overall, this competition aimed to bring the labour market closer to the world of innovative start-ups, spin-offs, universities, and potential careers paths to implement the skills acquired.⁸²³

On 3 December 2018, Italy enriched its Telematic Deposit of contracts with a new feature.⁸²⁴ The information technology application will allow corporations to deposit their collective agreements in a few clicks to access the tax credit for training 4.0.⁸²⁵ This is part of the wider "National Business Plan 4.0" and is under the 2018 Budget Law; it is planned to promote the technological and digital innovation process of the private sector, focused on human capital.⁸²⁶ The tax credit is created to

⁸¹⁷ Employment Centers will once again play a key role for citizens and businesses, Ministry of Labor and Social Policies (Rome), 16 October 2018. Access Date: 10 December 2018. <http://www.lavoro.gov.it/stampa-e-media/Comunicati/Pagine/I-centri-per-l-impiego-torneranno-ad-avere-un-ruolo-chiave-per-i-cittadini-e-per-le-imprese.aspx>.

⁸¹⁸ National Innovation Award 2018, 16th edition now underway, Research Italy (Rome) 25 November 2018. Access Date: 4 December 2018. <https://www.researchitaly.it/en/news/national-innovation-award-2018-16th-edition-now-underway/>.

⁸¹⁹ National Innovation Award 2018, 16th edition now underway, Research Italy (Rome) 25 November 2018. Access Date: 4 December 2018. <https://www.researchitaly.it/en/news/national-innovation-award-2018-16th-edition-now-underway/>.

⁸²⁰ National Award for innovation: Moi wins, startup for Industry 4.0, Economy Up Digital360 (Rome) 30 November 2018. Access Date: 4 December 2018, https://www.economyup.it/startup/premio-nazionale-innovazione-startupcup/#Premio_Nazionale_per_lInnovazione_tutti_i_premi.

⁸²¹ National Innovation Award 2018, 16th edition now underway, Research Italy (Rome) 25 November 2018. Access Date: 4 December 2018. <https://www.researchitaly.it/en/news/national-innovation-award-2018-16th-edition-now-underway/>.

⁸²² National Innovation Award 2018, 16th edition now underway, Research Italy (Rome) 25 November 2018. Access Date: 4 December 2018. <https://www.researchitaly.it/en/news/national-innovation-award-2018-16th-edition-now-underway/>.

⁸²³ National Award for innovation: Moi wins, startup for Industry 4.0, Economy Up Digital360 (Rome) 30 November 2018. Access Date: 4 December 2018, https://www.economyup.it/startup/premio-nazionale-innovazione-startupcup/#Premio_Nazionale_per_lInnovazione_tutti_i_premi.

⁸²⁴ Tax credit for training 4.0: indications on the deposit of contracts, Ministry of Labor and Social Policies (Rome) 6 December 2018. Access Date: 10 December 2018. <http://www.lavoro.gov.it/notizie/pagine/credito-d-imposta-per-la-formazione-4-0-indicazioni-sul-deposito-dei-contratti.aspx/>.

⁸²⁵ Tax credit for training 4.0: indications on the deposit of contracts, Ministry of Labor and Social Policies (Rome) 6 December 2018. Access Date: 10 December 2018. <http://www.lavoro.gov.it/notizie/pagine/credito-d-imposta-per-la-formazione-4-0-indicazioni-sul-deposito-dei-contratti.aspx/>.

⁸²⁶ Tax credit for training 4.0: indications on the deposit of contracts, Ministry of Labor and Social Policies (Rome) 6 December 2018. Access Date: 10 December 2018. <http://www.lavoro.gov.it/notizie/pagine/credito-d-imposta-per-la-formazione-4-0-indicazioni-sul-deposito-dei-contratti.aspx/>.

cover expenses incurred in 2018 for workers engaged in training, related to “emerging technologies.”⁸²⁷

On 7 December 2018, a multi-stakeholder G7 Conference on Artificial Intelligence was held in Montreal, promoted as part of the work of the G7 Summit in Charlevoix.⁸²⁸ Italian delegation included the Ministry of Economic Development and a group of experts, academics and representatives of the business world and of the Italian startups operating in the sector.⁸²⁹ Italy presented a report on the subject “the future of work — skills for the modern economy” during the conference.⁸³⁰ Topics discussed in the event consisted of the potential of human and technological development related to artificial intelligence and employment opportunities created by new technologies.⁸³¹

Italy has ensured all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

Thus, Italy receives a score of +1.

Analyst: Asli Ersozoglul

Japan: +1

Japan has fully complied with its commitment to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

On 13 June 2018, Prime Minister Shinzo Abe’s cabinet published a new plan aiming to expand recurrent education by increasing government spending on specialized training schools.⁸³² Benefit rates for courses entitled to the general educational training benefits such as information technology skills will increase from 20 percent to 40 percent.⁸³³ Education programmes specializing in high technology such as biotechnology, robotics, and fine chemicals will receive special funding and

⁸²⁷ Tax credit for training 4.0: indications on the deposit of contracts, Ministry of Labor and Social Policies (Rome) 6 December 2018. Access Date: 10 December 2018. <http://www.lavoro.gov.it/notizie/pagine/credito-d-imposta-per-la-formazione-4-0-indicazioni-sul-deposito-dei-contratti.aspx/>.

⁸²⁸ G7 Canada on Artificial Intelligence, Ministry of Economic Development (Rome) 7 December 2018. Access Date: 4 December 2018. <https://www.sviluppoeconomico.gov.it/index.php/it/per-i-media/notizie/it/198-notizie-stampa/2038908-g7-canada-su-intelligenza-artificiale>.

⁸²⁹ G7 Canada on Artificial Intelligence, Ministry of Economic Development (Rome) 7 December 2018. Access Date: 4 December 2018. <https://www.sviluppoeconomico.gov.it/index.php/it/per-i-media/notizie/it/198-notizie-stampa/2038908-g7-canada-su-intelligenza-artificiale>.

⁸³⁰ G7 Canada on Artificial Intelligence, Ministry of Economic Development (Rome) 7 December 2018. Access Date: 4 December 2018. <https://www.sviluppoeconomico.gov.it/index.php/it/per-i-media/notizie/it/198-notizie-stampa/2038908-g7-canada-su-intelligenza-artificiale>.

⁸³¹ G7 Canada on Artificial Intelligence, Ministry of Economic Development (Rome) 7 December 2018. Access Date: 4 December 2018. <https://www.sviluppoeconomico.gov.it/index.php/it/per-i-media/notizie/it/198-notizie-stampa/2038908-g7-canada-su-intelligenza-artificiale>.

⁸³² 「人づくり革命 基本構想」 (A Revolution in Human Resources Development Basic Guidelines), Ministry of Health, Labour and Welfare (Tokyo) 13 June 2018. Access Date: 15 October 2018. <https://www.kantei.go.jp/jp/content/000023186.pdf>.

⁸³³ 「人づくり革命 基本構想」 (A Revolution in Human Resources Development Basic Guidelines), Ministry of Health, Labour and Welfare (Tokyo) 13 June 2018. Access Date: 15 October 2018. <https://www.kantei.go.jp/jp/content/000023186.pdf>.

minimum lecture time will be shortened.⁸³⁴ These changes aim to improve the quality of education and allow a bigger population to have convenient access to education.⁸³⁵

On 15 June 2018, the cabinet creates Basic Policy on Economic and Fiscal Management and Reform to instigate a new wave of “human resources development revolution.”⁸³⁶ The policies include the implementation of free higher education, a drastic expansion of recurrent education, and university reform.⁸³⁷ These policies aim to equip the population with the necessary skills to adapt to the emerging job market based on high technology.⁸³⁸

On 9 October 2018, the Ministry of Education, Culture, Sports, Science, and Technology announced Doctoral Programme for Data-related Innovation Expert, a new programme aiming to provide financial assistance to competent personnel in the field of high technology, especially data science. Funding for relevant education reaches JPY252 million, an increase from JPY213 million in 2017.⁸³⁹ The programme aims to help highly skilled workers prosper at relevant work fields and conduct better research.⁸⁴⁰

On 22 November 2018, the Ministry of Education, Culture, Sports, Science, and Technology held a press conference⁸⁴¹ answering questions regarding their plan to reduce the cost of higher education announced on 11 September 2017.⁸⁴² The conference aims to clarify confusion about the programme and share with the public about adjustments made before its actual implementation in April 2020.⁸⁴³

⁸³⁴ 「人づくり革命 基本構想」 (A Revolution in Human Resources Development Basic Guidelines), Ministry of Health, Labour and Welfare (Tokyo) 13 June 2018. Access Date: 15 October 2018.

<https://www.kantei.go.jp/jp/content/000023186.pdf>.

⁸³⁵ 「人づくり革命 基本構想」 (A Revolution in Human Resources Development Basic Guidelines), Ministry of Health, Labour and Welfare (Tokyo) 13 June 2018. Access Date: 15 October 2018.

<https://www.kantei.go.jp/jp/content/000023186.pdf>.

⁸³⁶ 「経済財政運営と改革の基本方針 2018」 (Basic Policy on Economic and Fiscal Management and Reform 2018), Cabinet Office (Tokyo) 15 June 2018. Access Date: 18 October 2018. <http://www5.cao.go.jp/keizai-shimon/kaigi/cabinet/2018/decision0615.html>.

⁸³⁷ 「経済財政運営と改革の基本方針 2018」 (Basic Policy on Economic and Fiscal Management and Reform 2018), Cabinet Office (Tokyo) 15 June 2018. Access Date: 18 October 2018. <http://www5.cao.go.jp/keizai-shimon/kaigi/cabinet/2018/decision0615.html>.

⁸³⁸ 「経済財政運営と改革の基本方針 2018」 (Basic Policy on Economic and Fiscal Management and Reform 2018), Cabinet Office (Tokyo) 15 June 2018. Access Date: 18 October 2018. <http://www5.cao.go.jp/keizai-shimon/kaigi/cabinet/2018/decision0615.html>.

⁸³⁹ 「平成 30 年度科学技術人材育成費補助事業」 (2018 Scientific Technology Personal Growth Assistance Programme), Ministry of Education, Culture, Sports, Science and Technology (Tokyo) 9 October 2018. Access Date: 20 October 2018. http://www.mext.go.jp/a_menu/jinzai/data/__icsFiles/afieldfile/2018/10/09/1410001_001.pdf.

⁸⁴⁰ 「経済財政運営と改革の基本方針 2018」 (Basic Policy on Economic and Fiscal Management and Reform 2018), Cabinet Office (Tokyo) 15 June 2018. Access Date: 18 October 2018. <http://www5.cao.go.jp/keizai-shimon/kaigi/cabinet/2018/decision0615.html>.

⁸⁴¹ 「高等教育段階の教育費負担新制度に係る質問と回答」 (New System of Reducing the Cost and Burden of Higher Education), Ministry of Education, Culture, Sports, Science and Technology (Tokyo) 22 November 2018. Access Date: 4 December 2018.

http://www.mext.go.jp/a_menu/koutou/hutankeigen/__icsFiles/afieldfile/2018/11/22/1411319_1.pdf

⁸⁴² 「高等教育の負担軽減の具体的方策について」 (Concrete Policies of Reducing the Cost and Burden of Higher Education), Ministry of Education, Culture, Sports, Science and Technology (Tokyo) 11 September 2017. Access Date: 4 December 2018.

http://www.mext.go.jp/a_menu/koutou/hutankeigen/__icsFiles/afieldfile/2018/11/22/1411267_1.pdf

⁸⁴³ 「高等教育段階の教育費負担新制度に係る質問と回答」 (New System of Reducing the Cost and Burden of Higher Education), Ministry of Education, Culture, Sports, Science and Technology (Tokyo) 22 November 2018. Access Date: 4 December 2018.

http://www.mext.go.jp/a_menu/koutou/hutankeigen/__icsFiles/afieldfile/2018/11/22/1411319_1.pdf

On 26 November 2018, the Central Council of Education published Grand Design for Higher Education toward 2040 discussing future improvements in the country's higher education system.⁸⁴⁴ The overall plan takes a series of measures such as increasing investment in higher education as well as diversifying student body, instructors, education management, and both private and public educational institutions.⁸⁴⁵ The plan aims to transform Japanese higher education to a “learners-orientated education” and equip students with “universal knowledge and understanding as well as versatile skills in both humanities and sciences,” and the “capability to think critically” so that students are “capable of surviving the age of unpredictability.”⁸⁴⁶

Japan has demonstrated a high level of care to furthering both access and education for its labour market with a view towards modern technological developments. Prime Minister Shinzo Abe's cabinet has taken a series of measures to improve both the quality and access to higher education for the people. The cabinet has also been continuously adjusting many of the plans and policies before actual implementations.

Thus, Japan receives a score of +1.

Analyst: Hiromitsu Higashi

United Kingdom: +1

The United Kingdom has fully complied with its commitment to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

On 13 June 2018, the Department for Digital, Culture, Media & Sport announced the world's first artificial intelligence (AI) talent scheme as major multinational corporations join the government's collaborative program.⁸⁴⁷ Part of the initiative includes the creation of Digital Skills Areas where local businesses partner with leaders in the digital technology field to provide skills training.⁸⁴⁸ Other parts of the plan also include the development of a start-up visa for entrepreneurs with an especial focus

⁸⁴⁴ 「2040 年に向けた高等教育のク ラント テ サ イン」 (Grand Design for Higher Education toward 2040), Central Council for Education (Tokyo) 26 November 2018. Access Date: 5 December 2018. http://www.mext.go.jp/component/b_menu/shingi/toushin/___icsFiles/afldfile/2018/11/26/1411360_2_1.pdf.

⁸⁴⁵ 「2040 年に向けた高等教育のク ラント テ サ イン」 (Grand Design for Higher Education toward 2040), Central Council for Education (Tokyo) 26 November 2018. Access Date: 5 December 2018. http://www.mext.go.jp/component/b_menu/shingi/toushin/___icsFiles/afldfile/2018/11/26/1411360_2_1.pdf.

⁸⁴⁶ 「2040 年に向けた高等教育のク ラント テ サ イン」 (Grand Design for Higher Education toward 2040), Central Council for Education (Tokyo) 26 November 2018. Access Date: 5 December 2018. http://www.mext.go.jp/component/b_menu/shingi/toushin/___icsFiles/afldfile/2018/11/26/1411360_2_1.pdf.

⁸⁴⁷ Huge boost to UK's data capability as big business backs world-first AI talent scheme and chair of data ethics and innovation centre is confirmed, Department for Digital, Culture, Media & Sport (London) 13 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/huge-boost-to-uks-data-capability-as-big-business-backs-world-first-ai-talent-scheme-and-chair-of-data-ethics-and-innovation-centre-is-confirmed>.

⁸⁴⁸ Huge boost to UK's data capability as big business backs world-first AI talent scheme and chair of data ethics and innovation centre is confirmed, Department for Digital, Culture, Media & Sport (London) 13 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/huge-boost-to-uks-data-capability-as-big-business-backs-world-first-ai-talent-scheme-and-chair-of-data-ethics-and-innovation-centre-is-confirmed>.

on recent graduates.⁸⁴⁹ The government has also invested in a new industrial Masters program to help develop UK's AI future.⁸⁵⁰

On 26 June 2018, the Department for Digital, Culture, Media & Sport together with the Department for Business, Energy & Industrial Strategy appointed the world-renowned artificial intelligence expert, Dr. Demis Hassabis, as an adviser to the new Office for Artificial Intelligence.⁸⁵¹ The Digital Secretary, Matt Hancock, also appointed a new chair of the AI Council, a new industry body tasked with increasing growth in the AI sector and promoting its adoption in other sectors.⁸⁵² Commenting on these developments, Mr. Hancock expressed “cutting-edge technology is the basis of the future of our economy.”⁸⁵³ Under this Government, investment in the tech sector doubled in the last year, is growing at three times the pace of the rest of the economy, unemployment is at a 40-year low, inequality is falling, and we are seeing the first sustained fall in debt in a generation. We must build on these strengths ... We want to harness the best possible AI leadership to help us seize this opportunity. Demis Hassabis, Tabitha Goldstaub, and Wendy Hall have the expertise and vision to help us make sure the huge benefits of this powerful new technology are available to everyone.”⁸⁵⁴

On 18 July 2018, the Education Secretary announced a new deal with the West Midlands Combined Authority to boost skills across the West Midlands region.⁸⁵⁵ The deal includes a multi-million investment in local colleges that aims to both improve access to modern equipment and to promote teaching digital skills.⁸⁵⁶ Part of the investment focuses on adult learners while at the same time developing new apprenticeships in priority areas within the digital sector.⁸⁵⁷

⁸⁴⁹ Huge boost to UK's data capability as big business backs world-first AI talent scheme and chair of data ethics and innovation centre is confirmed, Department for Digital, Culture, Media & Sport (London) 13 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/huge-boost-to-uks-data-capability-as-big-business-backs-world-first-ai-talent-scheme-and-chair-of-data-ethics-and-innovation-centre-is-confirmed>.

⁸⁵⁰ Huge boost to UK's data capability as big business backs world-first AI talent scheme and chair of data ethics and innovation centre is confirmed, Department for Digital, Culture, Media & Sport (London) 13 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/huge-boost-to-uks-data-capability-as-big-business-backs-world-first-ai-talent-scheme-and-chair-of-data-ethics-and-innovation-centre-is-confirmed>.

⁸⁵¹ World-leading expert Demis Hassabis to advise new Government Office for Artificial Intelligence, Department for Digital, Culture, Media & Sport, Department for Business, Energy & Industrial Strategy (London) 26 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/world-leading-expert-demis-hassabis-to-advise-new-government-office-for-artificial-intelligence>.

⁸⁵² World-leading expert Demis Hassabis to advise new Government Office for Artificial Intelligence, Department for Digital, Culture, Media & Sport, Department for Business, Energy & Industrial Strategy (London) 26 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/world-leading-expert-demis-hassabis-to-advise-new-government-office-for-artificial-intelligence>.

⁸⁵³ World-leading expert Demis Hassabis to advise new Government Office for Artificial Intelligence, Department for Digital, Culture, Media & Sport, Department for Business, Energy & Industrial Strategy (London) 26 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/world-leading-expert-demis-hassabis-to-advise-new-government-office-for-artificial-intelligence>.

⁸⁵⁴ World-leading expert Demis Hassabis to advise new Government Office for Artificial Intelligence, Department for Digital, Culture, Media & Sport, Department for Business, Energy & Industrial Strategy (London) 26 June 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/world-leading-expert-demis-hassabis-to-advise-new-government-office-for-artificial-intelligence>.

⁸⁵⁵ New multi-million pound deal to boost skills across West Midlands, Department for Education (London) 18 July 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-multi-million-pound-deal-to-boost-skills-across-west-midlands>.

⁸⁵⁶ New multi-million pound deal to boost skills across West Midlands, Department for Education (London) 18 July 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-multi-million-pound-deal-to-boost-skills-across-west-midlands>.

⁸⁵⁷ New multi-million pound deal to boost skills across West Midlands, Department for Education (London) 18 July 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-multi-million-pound-deal-to-boost-skills-across-west-midlands>.

On 30 July 2018, the Department for Transport introduced new plans for the Centre for Connected and Autonomous Vehicles' Future of Mobility Grand Challenge.⁸⁵⁸ The Challenge aims to reshape the use of transportation in the United Kingdom by providing economic opportunities for British companies and employees.⁸⁵⁹

On 7 August 2018, Prime Minister Theresa May discussed her plans for developing the labour and technology markets of Scotland while on a visit to Edinburgh.⁸⁶⁰ She announced the opening of the Bayes Centre made possible with a new injection of UK Government investment.⁸⁶¹ The centre will provide shared working spaces for applied data science and artificial intelligence research teams.⁸⁶²

On 7 August, the Department of Education reinforced their commitment to education technology.⁸⁶³ While the Department notes the lack of industry participation, they are working with the Chartered College of Teaching, the British Educational Suppliers Association and other partner groups to develop online training packages for teachers on embracing technology.⁸⁶⁴ They are also developing an online portal to provide free software trials for schools and are coaching teachers on their use through a series of regional demonstrator roadshows.⁸⁶⁵

On 22 August 2018, Her Majesty's Ambassador to Norway, Richard Wood, unveiled new education programs for artificial intelligence while at the Tech City Executive Accelerator Conference.⁸⁶⁶ The Government committed to investing GBP17 million to the development of AI technologies in universities.⁸⁶⁷

⁸⁵⁸ Government kick-starts work on Future of Mobility Grand Challenge, Department for Transport, Centre for Connected and Autonomous Vehicles (London) 30 July 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/government-kick-starts-work-on-future-of-mobility-grand-challenge>.

⁸⁵⁹ Government kick-starts work on Future of Mobility Grand Challenge, Department for Transport, Centre for Connected and Autonomous, Department for Transport, Centre for Connected and Autonomous (London) 30 July 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/government-kick-starts-work-on-future-of-mobility-grand-challenge>.

⁸⁶⁰ PM remarks at the signing of the Edinburgh and South East Scotland City Deal: 7 August 2018, Prime Minister's Office, 10 Downing Street (London) 7 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/speeches/pm-remarks-at-the-signing-of-the-edinburgh-and-south-east-scotland-city-deal-7-august-2018>.

⁸⁶¹ PM remarks at the signing of the Edinburgh and South East Scotland City Deal: 7 August 2018, Prime Minister's Office, 10 Downing Street (London) 7 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/speeches/pm-remarks-at-the-signing-of-the-edinburgh-and-south-east-scotland-city-deal-7-august-2018>.

⁸⁶² PM remarks at the signing of the Edinburgh and South East Scotland City Deal: 7 August 2018, Prime Minister's Office, 10 Downing Street (London) 7 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/speeches/pm-remarks-at-the-signing-of-the-edinburgh-and-south-east-scotland-city-deal-7-august-2018>.

⁸⁶³ New technology to spearhead classroom revolution, Department for Education (London) 7 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-technology-to-spearhead-classroom-revolution>.

⁸⁶⁴ New technology to spearhead classroom revolution, Department for Education (London) 7 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-technology-to-spearhead-classroom-revolution>.

⁸⁶⁵ New technology to spearhead classroom revolution, Department for Education (London) 7 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-technology-to-spearhead-classroom-revolution>.

⁸⁶⁶ Artificial Intelligence — a collaboration, Foreign & Commonwealth Office (London) 22 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/speeches/artificial-intelligence-a-collaboration>.

⁸⁶⁷ Artificial Intelligence — a collaboration, Foreign & Commonwealth Office (London) 22 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/speeches/artificial-intelligence-a-collaboration>.

On 27 August 2018, the Department for Digital, culture, Media & Sport announced that over GBP1 million in new funds will be available for initiatives which will help boost the digital skills of underrepresented groups and disabled people.⁸⁶⁸ The program is particularly hoping to provide skills training in digital roles such as data analysts, programmers, cybersecurity specialists, software developers, and marketers.⁸⁶⁹ At the announcement, Minister for Digital Margot James said “[i]t is crucial everyone is able to take advantage of digital technology, whether it is to learn how to use the internet or develop the skills to work in a tech role.”⁸⁷⁰

On 10 September 2018, Innovate UK and UK Research and Innovation introduced the Knowledge Quarter (KQ) Labs programme to provide access to the latest innovations and support to biomedical start-ups.⁸⁷¹ KQ Labs will offer a 16-week intensive accelerator programme to provide the start-ups with the skills and understanding needed to develop their biomedical proposals and help them move towards commercial launch.⁸⁷²

On 25 September 2018, the Government launched a new strategy to promote innovation and industry-led development of zero-emission vehicles in the UK.⁸⁷³ The Office for Low Emission Vehicles will partner with Innovate UK to deliver up to GBP22 million in funding for the program.⁸⁷⁴ The funding will be distributed across 3 different stages of research and development.⁸⁷⁵ The program will largely focus on collaborative projects to foster participation between small UK businesses and other research organizations or third-sector organizations.⁸⁷⁶

On 1 October 2018, Her Majesty’s Land Registry announced a partnership with software company Methods.⁸⁷⁷ The partnership marks the next stage of HM Land Registry’s research and development project, Digital Street. The aim of the project is to work with the industry to further public

⁸⁶⁸ New funds to boost diversity of people working in digital and tech jobs, Department for Digital, Culture, Media & Sport (London) 27 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-funds-to-boost-diversity-of-people-working-in-digital-and-tech-jobs>.

⁸⁶⁹ New funds to boost diversity of people working in digital and tech jobs, Department for Digital, Culture, Media & Sport (London) 27 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-funds-to-boost-diversity-of-people-working-in-digital-and-tech-jobs>.

⁸⁷⁰ New funds to boost diversity of people working in digital and tech jobs, Department for Digital, Culture, Media & Sport (London) 27 August 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-funds-to-boost-diversity-of-people-working-in-digital-and-tech-jobs>.

⁸⁷¹ New support for biomedical start ups, Innovate UK, UK Research and Innovation (London) 10 September 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-support-for-biomedical-start-ups>.

⁸⁷² New support for biomedical start ups, Innovate UK, UK Research and Innovation (London) 10 September 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/new-support-for-biomedical-start-ups>.

⁸⁷³ Zero emission vehicles: funding to drive development and adoption, UK Research and Innovation (London) 25 September 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/zero-emission-vehicles-funding-to-drive-development-and-adoption>.

⁸⁷⁴ Zero emission vehicles: funding to drive development and adoption, UK Research and Innovation (London) 25 September 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/zero-emission-vehicles-funding-to-drive-development-and-adoption>.

⁸⁷⁵ Zero emission vehicles: funding to drive development and adoption, UK Research and Innovation (London) 25 September 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/zero-emission-vehicles-funding-to-drive-development-and-adoption>.

⁸⁷⁶ Zero emission vehicles: funding to drive development and adoption, UK Research and Innovation (London) 25 September 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/zero-emission-vehicles-funding-to-drive-development-and-adoption>.

⁸⁷⁷ HM Land Registry to explore the benefits of blockchain, HM Land Registry (London) 1 October 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/hm-land-registry-to-explore-the-benefits-of-blockchain>.

understanding of the use of smart contracts, blockchain, and distributed ledgers in the context of land registration and property buying/selling.⁸⁷⁸

On 2 October 2018, the Department of Education presented their plan to ensure that technical education will include digital skills training.⁸⁷⁹ GBP38 million in funding have been allocated towards T Levels providers to teach digital skills courses for the first time in 2020.⁸⁸⁰

On 5 October 2018, the Business Secretary, Greg Clark, awarded GBP10 million to UK regulators to help drive forward innovation in the public sector.⁸⁸¹ This funding will go towards supporting 15 different projects aimed at improving access to technology within the British modern economic sector.⁸⁸² For instance, GBP700,000 will go to the Solicitors Regulation Authority to enable them to provide support to businesses that will use artificial intelligence (with an especial focus on improving access for small businesses).⁸⁸³ There is also an initiative with the Civil Aviation Authority which has received GBP1 million towards bringing people from across the industry to “unblock legislative and regulatory barriers to innovations.”⁸⁸⁴ The Information Commissioner’s Office also received funding for their Regulators’ Business Privacy Innovation Hub which aims to pool experts in the field of regulation to support businesses in the field of information privacy and data protection.⁸⁸⁵

On 5 October 2018, the Business Secretary Greg Clark awarded GBP10 million to UK regulators to help drive forward innovation in the public sector.⁸⁸⁶ This funding will go towards supporting 15 different projects aimed at improving access to technology within the British modern economic sector.⁸⁸⁷ For instance, GBP700 hundred thousand will go to the Solicitors Regulation Authority to

⁸⁷⁸ HM Land Registry to explore the benefits of blockchain, HM Land Registry (London) 1 October 2018. Access Date: October 10 October 2018. <https://www.gov.uk/government/news/hm-land-registry-to-explore-the-benefits-of-blockchain>.

⁸⁷⁹ New education and skills measures announced, Department for Education (London) 2 October 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/news/new-education-and-skills-measures-announced--2>.

⁸⁸⁰ New education and skills measures announced, Department for Education (London) 2 October 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/news/new-education-and-skills-measures-announced--2>.

⁸⁸¹ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2019. Access Date: October 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁸² Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2019. Access Date: October 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁸³ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2019. Access Date: October 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁸⁴ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2019. Access Date: October 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁸⁵ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2019. Access Date: October 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁸⁶ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁸⁷ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

enable them to provide support to businesses that will use artificial intelligence (with an especial focus on improving access for small businesses).⁸⁸⁸ There is also an initiative with the Civil Aviation Authority which has received GBP1 million towards bringing people from across the industry to “unblock legislative and regulatory barriers to innovations.”⁸⁸⁹ The Information Commissioner’s Office also received funding for their Regulators’ Business Privacy Innovation Hub which aims to pool experts in the field of regulation to support businesses in the field of information privacy and data protection.⁸⁹⁰

On 6 November 2018, the Department for Business, Energy & Industrial Strategy, in conjunction with UK Research and Innovation and Innovate UK, announced the launch of five new technology centers that will provide training to healthcare professionals to utilize artificial intelligence advances in the medical field and further grow the UK biotechnology industry.⁸⁹¹ The program also welcomes support from leading medical companies who will be providing their technical expertise to the project.⁸⁹²

On 7 November 2018, the Department of Education committed GBP84 million to the development of a National Centre for Computing Education.⁸⁹³ The centre will focus both on improving teachers’ ability to teach computing as well as on improving participation in computer science to prepare students for jobs in emerging computing-related areas.⁸⁹⁴

On 16 November 2018, the Department for Digital, Culture, Media and Sport created a digital training fund aiming at the charitable sector.⁸⁹⁵ The fund will be used to train workers in the charitable sector on improving their digital skills and using new technologies to achieve their goals.⁸⁹⁶

On 18 November 2018, the Business Secretary Greg Clark announced the creation of nine creative clusters around the UK.⁸⁹⁷ The programme is led by the Arts and Humanities Research Council

⁸⁸⁸ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁸⁹ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁹⁰ Corporate Report: Department for Work and Pensions single departmental plan, Department for Work and Pensions (London) 10 October 2018. Access Date: 10 October 2018. <https://www.gov.uk/government/publications/department-for-work-and-pensions-single-departmental-plan/department-for-work-and-pensions-single-departmental-plan-2018>.

⁸⁹¹ Artificial Intelligence to help save lives at five new technology centres, Department for Business, Energy & Industrial Strategy (London) 6 November 2018. Access Date: 7 December 2018. <https://www.gov.uk/government/news/artificial-intelligence-to-help-save-lives-at-five-new-technology-centres>.

⁸⁹² Artificial Intelligence to help save lives at five new technology centres, Department for Business, Energy & Industrial Strategy (London) 6 November 2018. Access Date: 7 December 2018. <https://www.gov.uk/government/news/artificial-intelligence-to-help-save-lives-at-five-new-technology-centres>.

⁸⁹³ Tech experts to provide National Centre for Computing, Department of Education (London) 7 November 2018. Access date: 7 December 2018. <https://www.gov.uk/government/news/tech-experts-to-provide-national-centre-for-computing-education>.

⁸⁹⁴ Tech experts to provide National Centre for Computing, Department of Education (London) 7 November 2018. Access date: 7 December 2018. <https://www.gov.uk/government/news/tech-experts-to-provide-national-centre-for-computing-education>.

⁸⁹⁵ Government supports charities to go digital, Department for Digital, Culture, Media & Sport, 16 November 2018. Access date: 7 December 2018. <https://www.gov.uk/government/news/government-supports-charities-to-go-digital>.

⁸⁹⁶ Government supports charities to go digital, Department for Digital, Culture, Media & Sport, 16 November 2018. Access date: 7 December 2018. <https://www.gov.uk/government/news/government-supports-charities-to-go-digital>.

which has contributed GBP80 million and will operate in conjunction with 13 local universities and several large corporations.⁸⁹⁸ As the Culture Secretary Jeremy Wright said, “[t]hese partnerships between business, academia and industry will encourage the use of future technology to develop new products and experiences, and boost employment opportunities across the breadth of the UK.”⁸⁹⁹

On 30 November 2018, the Lord Chancellor helped launch TheCityUK annual report which included the announcement of GBP3 million of funding for three new research projects to provide greater access to technology to workers in the legal sector.⁹⁰⁰ One of the projects benefitting from this funding is the University of Oxford’s Unlocking the Potential of AI for English Law which aims to develop the legal sector’s understand of the use of artificial intelligence and strengthen the United Kingdom’s reputation as an economic centre for workers in new and emerging technologies.⁹⁰¹

The United Kingdom has demonstrated a strong willingness to meet their commitment with numerous initiatives.

Thus, the United Kingdom receives a score of +1.

Analyst: Ioana Burtea

United States: +1

The United States has fully complied with its commitment to ensure that all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

On 10 July 2018, U.S. Department of Labor announced a USD47.6 million award of 163 Homeless Veterans’ Reintegration Program, which provides occupation skills training, apprenticeship opportunities and other on job training and assistance. This fund has supported more than 18,000 homeless veterans.⁹⁰²

⁸⁹⁷ Major new research investment set to provide boost for UK’s Creative Industries, Department for Digital, Culture, Media & Sport (London) 13 November 2018. Access Date: 7 December 2018.

<https://www.gov.uk/government/news/major-new-research-investment-set-to-provide-boost-for-uks-creative-industries>.

⁸⁹⁸ Major new research investment set to provide boost for UK’s Creative Industries, Department for Digital, Culture, Media & Sport (London) 13 November 2018. Access Date: 7 December 2018.

<https://www.gov.uk/government/news/major-new-research-investment-set-to-provide-boost-for-uks-creative-industries>.

⁸⁹⁹ Major new research investment set to provide boost for UK’s Creative Industries, Department for Digital, Culture, Media & Sport (London) 13 November 2018. Access Date: 7 December 2018.

<https://www.gov.uk/government/news/major-new-research-investment-set-to-provide-boost-for-uks-creative-industries>.

⁹⁰⁰ Launch of TheCityUK legal services 2018 report: David Gauke speech, Ministry of Justice (London) 30 November 2018. Access Date: 7 December 2018. <https://www.gov.uk/government/speeches/launch-of-thecityuk-legal-services-2018-report-david-gauke-speech>.

⁹⁰¹ Launch of TheCityUK legal services 2018 report: David Gauke speech, Ministry of Justice (London) 30 November 2018. Access Date: 7 December 2018. <https://www.gov.uk/government/speeches/launch-of-thecityuk-legal-services-2018-report-david-gauke-speech>.

⁹⁰² US. Department of Labor Announces Awards of \$47,600,000 in Training Grants to Help Hopeless Veterans Re-enter the Workforce, United States Department of Labor (Washington D.C.) 10 July 2018. <https://www.dol.gov/newsroom/releases/vets/vets20180710>.

On 17 July 2018, U.S. Department of Labor announced the Apprenticeship and Nontraditional Occupation (WANTO) will fund grants to help expand job opportunities for women.⁹⁰³ The U.S. Secretary of Women also indicated that it is important for women to get into the apprentice program and maximizing job opportunities in different industries.⁹⁰⁴ According to the Bureau of Labor Statistics reports, women have a lower rate in participating in several industry sectors: manufacturing (29 percent), agriculture (25 percent), transportation and utilities (24 percent), mining (13 percent), and construction (9 percent).⁹⁰⁵ The WANTO programs will be providing opportunities in these areas regarding pre-apprenticeship, apprenticeship, nontraditional skills training, ongoing orientation, support groups and facilitating networks.⁹⁰⁶

On 19 July 2018, President Donald J. Trumps established the President's National Council for American Worker to provide a forum for the development of a national strategy which could address urgent workforce issues including developing a national campaign; creating a plan for recognizing companies demonstrate excellence in education, training, and workforce investment; expand the number of apprenticeships.⁹⁰⁷

On 27 July 2018, U.S. Department of Labor announced the creation of the high-quality industry-recognized apprenticeship program as part of the Trump administration's plan in equipping Americans with necessary skills for family-sustaining jobs.⁹⁰⁸ Expanding the apprenticeship model through industry-recognized programs, while retaining the existing Registered Apprenticeship program, will help Americans develop the skills they need for the jobs of today and tomorrow while meeting job creators' needs for skilled labor.⁹⁰⁹ The Training and Employment Notice (TEN) issued by the Department of Labor is a follow-up upon the President's Executive Order Expanding Apprenticeships in America.⁹¹⁰ The TEN provides information that certifiers will be expected to have in place to establish standards, establish certification intervals determined by industries, evaluate and certify programs focused on outcomes and process, report results, and maintain records. Organizations will be able to seek a determination from the Department that their apprenticeship

⁹⁰³ US. Department of Labor Announces Grants to Help Woman Enter Apprenticeship, Expand Job opportunities, United States Department of Labor (Washington D.C.) 17 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/wb/wb20180717>.

⁹⁰⁴ US. Department of Labor Announces Grants to Help Woman Enter Apprenticeship, Expand Job opportunities, United States Department of Labor (Washington D.C.) 17 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/wb/wb20180717>.

⁹⁰⁵ US. Department of Labor Announces Grants to Help Woman Enter Apprenticeship, Expand Job opportunities, United States Department of Labor (Washington D.C.) 17 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/wb/wb20180717>.

⁹⁰⁶ US. Department of Labor Announces Grants to Help Woman Enter Apprenticeship, Expand Job opportunities, United States Department of Labor (Washington D.C.) 17 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/wb/wb20180717>.

⁹⁰⁷ President Donald J. Trump's Administration Is Taking Action to Equip American Students and Workers with the Skills They Need to Succeed, White house (Washington D.C.) 19 July 2018. Access Date: 10 October 2018. <https://www.whitehouse.gov/briefings-statements/president-donald-j-trumps-administration-taking-action-equip-american-students-workers-skills-need-succeed/>.

⁹⁰⁸ US. Department of labor Announces an Initial Training and Employment Notice to Expand High-Quality Apprenticeship, United States Department of Labor (Washington D.C.) 27 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/osec/osec20180727>.

⁹⁰⁹ US. Department of labor Announces an Initial Training and Employment Notice to Expand High-Quality Apprenticeship, United States Department of Labor (Washington D.C.) 27 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/osec/osec20180727>.

⁹¹⁰ US. Department of Labor Announces an Initial Training and Employment Notice to Expand High-Quality Apprenticeship, United States Department of Labor (Washington D.C.) 27 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/osec/osec20180727>.

certification practices meet these criteria and ensure that certified programs provide apprentices with a pathway to a family-sustaining career.⁹¹¹

On 30 August 2018, the US Department of Labor announced the launch of a new digital platform, Apprenticeship.gov.⁹¹² This web portal features an Apprenticeship Finder tool that offers career seekers a platform to search for apprenticeships by city, state, and occupation, as well as connects job seekers to high-skilled, high-paying careers.⁹¹³ The Apprenticeship Finder, a no-cost tool to employers or career seekers, is addressing a need shared by employers who are looking to promote their apprenticeship opportunities and career seekers searching to access them.⁹¹⁴ The new Apprenticeship Finder tool will not only make it easier for career seekers to find apprenticeship opportunities, but it will also help employers promote apprenticeships across new or non-traditional industries where apprenticeships may be less common.⁹¹⁵ Additionally, this effort supports President Trump's Executive Order *Expanding Apprenticeships in America* by improving access to apprenticeship opportunities that enable more Americans to obtain relevant skills and high-paying jobs.⁹¹⁶ Alexander Acosta, U.S. Secretary of Labor, said: "President Trump's Administration is working to ensure the American workforce has the skills to succeed and the opportunities to secure family-sustaining careers."⁹¹⁷

On 11 October 2018, the US Department of Labor's Office of Disability Employment Policy (ODEP) announced the award of a USD1.9 million contract to develop pilot projects focused on apprenticeship opportunities for youth and adults with disabilities in high-growth industries.⁹¹⁸ ODEP awarded a two-year contract to Social Policy Research Associates Inc. (SPRA) of Oakland, California, to research, develop, test, and evaluate innovative strategies in existing apprenticeship programs that provide skills training to people with disabilities.⁹¹⁹ Efforts will specifically focus on quality pre-apprenticeship and apprenticeship pilots in high-growth industries such as information technology, healthcare, and emerging sectors.⁹²⁰ Furthermore, SPRA will document and share best practices so that other apprenticeship efforts may replicate promising approaches.⁹²¹

⁹¹¹ US. Department of Labor Announces an Initial Training and Employment Notice to Expand High-Quality Apprenticeship, United States Department of Labor (Washington D.C.) 27 July 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/osec/osec20180727>.

⁹¹² US. Department of Labor Announces Apprenticeship.gov, United States Department of Labor (Washington D.C.) 30 August 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/eta/eta20180830-0>.

⁹¹³ US. Department of Labor Announces Apprenticeship.gov, United States Department of Labor (Washington D.C.) 30 August 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/eta/eta20180830-0>.

⁹¹⁴ US. Department of Labor Announces Apprenticeship.gov, United States Department of Labor (Washington D.C.) 30 August 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/eta/eta20180830-0>.

⁹¹⁵ US. Department of Labor Announces Apprenticeship.gov, United States Department of Labor (Washington D.C.) 30 August 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/eta/eta20180830-0>.

⁹¹⁶ US. Department of Labor Announces Apprenticeship.gov, United States Department of Labor (Washington D.C.) 30 August 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/eta/eta20180830-0>.

⁹¹⁷ US. Department of Labor Announces Apprenticeship.gov, United States Department of Labor (Washington D.C.) 30 August 2018. Access Date: 16 October 2018. <https://www.dol.gov/newsroom/releases/eta/eta20180830-0>.

⁹¹⁸ US. Department of Labor Awards \$ 1.9 Million to Improve Apprenticeship Opportunities for Youth and Adults with Disabilities, Office of Disability Employment Policy (Washington, D.C) 11 October 2018. Access Date: 1 November 2018. <https://www.dol.gov/newsroom/releases/odep/odep20181011>.

⁹¹⁹ US. Department of Labor Awards \$ 1.9 Million to Improve Apprenticeship Opportunities for Youth and Adults with Disabilities, Office of Disability Employment Policy (Washington, D.C) 11 October 2018. Access Date: 1 November 2018. <https://www.dol.gov/newsroom/releases/odep/odep20181011>.

⁹²⁰ US. Department of Labor Awards \$ 1.9 Million to Improve Apprenticeship Opportunities for Youth and Adults with Disabilities, Office of Disability Employment Policy (Washington, D.C) 11 October 2018. Access Date: 1 November 2018. <https://www.dol.gov/newsroom/releases/odep/odep20181011>.

⁹²¹ US. Department of Labor Awards \$ 1.9 Million to Improve Apprenticeship Opportunities for Youth and Adults with Disabilities, Office of Disability Employment Policy (Washington, D.C) 11 October 2018. Access Date: 1 November 2018. <https://www.dol.gov/newsroom/releases/odep/odep20181011>.

“Apprenticeships are a proven strategy for connecting job creators with motivated, highly skilled workers, yet people with disabilities are disproportionately underrepresented in apprenticeship programs and in the workforce at large,” said Jennifer Sheehy, Deputy Assistant Secretary of Labor for Disability Employment Policy.⁹²² “This project will help us determine ways to ensure people with disabilities acquire the skills and credentials needed to obtain an in-demand position in a high-growth business or industry, where jobs pay family-sustaining wages.”⁹²³

On 12 November 2018, U.S. Secretary of Labor Acosta, Alexander Acosta, announced the start of National Apprenticeship Week.⁹²⁴ This year’s theme — “Apprenticeships: Creating Tomorrow” — celebrates the impact apprenticeship programs have in helping Americans learn skills for jobs in growing industries.⁹²⁵ “President Trump’s Administration is committed to expanding apprenticeships and workforce investment across all industries. Apprenticeship is a proven way to help Americans learn the skills they need for good, safe, family-sustaining jobs,” said Secretary Acosta.⁹²⁶ “National Apprenticeship Week provides an opportunity to showcase how businesses, labor, educational institutions, trade and industry groups, and public officials across the nation are expanding apprenticeships to develop a skilled, dedicated workforce.”⁹²⁷

On 4 December 2018, the White House announced that President Donald J. Trump is releasing a plan to strengthen education in science, technology, engineering and mathematics (STEM).⁹²⁸ According to the White House, the President’s plan seeks to ensure all Americans have access to quality STEM education and safeguard America’s place as the global leader in STEM innovation and employment.⁹²⁹ The Administration’s goals include building a strong foundation of STEM literacy, increasing diversity in STEM careers, and preparing the STEM workforce of the future.⁹³⁰ The plan laid out key pathways to achieve the goals of “developing and enriching strategic STEM

⁹²² U.S. Department of Labor Awards \$ 1.9 Million to Improve Apprenticeship Opportunities for Youth and Adults with Disabilities, Office of Disability Employment Policy (Washington, D.C) 11 October 2018. Access Date: 1 November 2018. <https://www.dol.gov/newsroom/releases/odep/odep20181011>.

⁹²³ U.S. Department of Labor Awards \$ 1.9 Million to Improve Apprenticeship Opportunities for Youth and Adults with Disabilities, Office of Disability Employment Policy (Washington, D.C) 11 October 2018. Access Date: 1 November 2018. <https://www.dol.gov/newsroom/releases/odep/odep20181011>.

⁹²⁴ U.S. Secretary of labor Acosta Announces Start of National Apprenticeship Week, U.S Department of Labor (Washington, D.C) 12 November 2018. Access Date: 30 November 2018. <https://www.dol.gov/newsroom/releases/osec/osec20181112>.

⁹²⁵ U.S. Secretary of labor Acosta Announces Start of National Apprenticeship Week, U.S Department of Labor (Washington, D.C) 12 November 2018. Access Date: 30 November 2018. <https://www.dol.gov/newsroom/releases/osec/osec20181112>.

⁹²⁶ U.S. Secretary of labor Acosta Announces Start of National Apprenticeship Week, U.S Department of Labor (Washington, D.C) 12 November 2018. Access Date: 30 November 2018. <https://www.dol.gov/newsroom/releases/osec/osec20181112>.

⁹²⁷ U.S. Secretary of labor Acosta Announces Start of National Apprenticeship Week, U.S Department of Labor (Washington, D.C) 12 November 2018. Access Date: 30 November 2018. <https://www.dol.gov/newsroom/releases/osec/osec20181112>.

⁹²⁸ President Donald J. Trump is Working to Ensure All Americans have Access to STEM Education (Washington, D.C) 4 December 2018. Access Date: 3 December 2018. <https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-is-working-to-ensure-all-americans-have-access-to-stem-education/>.

⁹²⁹ President Donald J. Trump is Working to Ensure All Americans have Access to STEM Education (Washington, D.C) 4 December 2018. Access Date: 3 December 2018. <https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-is-working-to-ensure-all-americans-have-access-to-stem-education/>.

⁹³⁰ President Donald J. Trump is Working to Ensure All Americans have Access to STEM Education (Washington, D.C) 4 December 2018. Access Date: 3 December 2018. <https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-is-working-to-ensure-all-americans-have-access-to-stem-education/>.

partnerships”; “engaging students where disciplines converge”; and “advancing computational thinking as a critical skill for America’s future workforce.”⁹³¹

The United States has established funds for different groups, e.g. veterans, women and the disabled, to ensure that all workers have access to resources that would help them adapt in the new world. Industry-recognized apprenticeship programmes, as well as tools that help workers find apprenticeships, have been developed to ensure all workers will have family-sustaining career, and thus prosper in the new economy.

Thus, the United States receives a score of +1.

Analyst: Ruohan Mu

European Union: +1

The European Union has fully complied with its commitment to ensure all workers have access to skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

On 13 June 2018, the European Commission updated its program for addressing and developing the skills of migrants.⁹³² Its upgraded online tool allows third-country nationals to access online courses designed to develop both language and digital fluency, with the objective of supporting their integration into the skilled labour market.⁹³³

On 7 July 2018, the European Commission published its Employment and Social Developments review, which calls on member countries to prevent early school leaving and promote skill-intensive education programs in order to reduce unemployment and prepare youth for the new world of work.⁹³⁴

On 16 July 2018, the European Parliament Committee on Employment and Social Affairs (EMPL) published the results of a study into the potential use of the European Fund for Strategic Investment to finance skill development programs.⁹³⁵ The report outlines that the programs EMPL intends to create will encourage lifelong learning, including both academic and vocational training for all ages.⁹³⁶

⁹³¹ President Donald J. Trump is Working to Ensure All Americans have Access to STEM Education (Washington, D.C) 4 December 2018. Access Date: 3 December 2018. <https://www.whitehouse.gov/briefings-statements/president-donald-j-trump-is-working-to-ensure-all-americans-have-access-to-stem-education/>.

⁹³² EU Skills Profile Tool for Third Country Nationals gets Another Upgrade. European Commission (Brussels) 13 June 2018. Access Date: 24 October 2018. <http://ec.europa.eu/social/main.jsp?langId=en&catId=1146&newsId=9125&furtherNews=yes>.

⁹³³ EU Skills Profile Tool for Third Country Nationals gets Another Upgrade. European Commission (Brussels) 13 June 2018. Access Date: 24 October 2018. <http://ec.europa.eu/social/main.jsp?langId=en&catId=1146&newsId=9125&furtherNews=yes>.

⁹³⁴ Employment and Social Developments in Europe 2018. European Commission (Brussels) 7 July 2018. Access Date: 24 October 2018. <http://ec.europa.eu/social/main.jsp?catId=738&langId=en&pubId=8110>.

⁹³⁵ Skills Development: The Potential of the European Fund for Strategic Investments. Policy Department for Economic, Scientific and Quality of Life Policies (Brussels) 16 July 2018. Access Date: 24 October 2018. [http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626053/IPOL_STU\(2018\)626053_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626053/IPOL_STU(2018)626053_EN.pdf).

⁹³⁶ Skills Development: The Potential of the European Fund for Strategic Investments. Policy Department for Economic, Scientific and Quality of Life Policies (Brussels) 16 July 2018. Access Date: 24 October 2018. [http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626053/IPOL_STU\(2018\)626053_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626053/IPOL_STU(2018)626053_EN.pdf).

It highlights the success of member nations such as Finland at utilizing government funds to implement successful academic and vocational training programs.⁹³⁷

On 6 August 2018, the European Commission published its findings on a study about adult skills and learning.⁹³⁸ It calls for European workplaces to establish skill-building programs for adults with existing medium level skills to improve their digital literacy to higher levels in an attempt to protect them from potential job replacement led by artificial intelligence and automation.⁹³⁹

On 10 October 2018, the EMPL approved new rules for emerging employment types such as short-term, intermittent and on-demand.⁹⁴⁰ With the rise of new “unpredictable” jobs such as ride-sharing, these rules ensure that workers of any kind share the same basic rights, including mandatory job training that should be provided free of charge by the employer during working hours.⁹⁴¹

On 11 October 2018, the European Commission published an evaluation of its online classification system European Skills Competencies, Qualifications, and Occupations (ESCO).⁹⁴² It found that in 2018, ESCO was successful in matching skill levels to jobs, thus preventing the issue of over-qualification, as well as providing training opportunities to increase skill levels in order to match people to more jobs.⁹⁴³

On 30 October 2018, the European Commission published the October 2018 issue of its quarterly magazine “The Social Agenda.”⁹⁴⁴ The issue of the publication focuses on the future of work and addresses growing automation by calling upon all member states to provide investments that will allow women, minorities, and low-income households to have equal access to advanced educational opportunities to prepare them for a digitalized world of work.⁹⁴⁵

On 5 November 2018, the European Commission and the Austrian Presidency organized over one thousand events which took place in various locations across Europe to allow youth, education

⁹³⁷ Skills Development: The Potential of the European Fund for Strategic Investments. Policy Department for Economic, Scientific and Quality of Life Policies (Brussels) 16 July 2018. Access Date: 24 October 2018.

[http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626053/IPOL_STU\(2018\)626053_EN.pdf](http://www.europarl.europa.eu/RegData/etudes/STUD/2018/626053/IPOL_STU(2018)626053_EN.pdf).

⁹³⁸ Promoting Adult Learning in the Workplace. European Commission (Brussels) 6 August 2018. Access Date: 24 October 2018. <http://ec.europa.eu/social/main.jsp?langId=en&catId=1146&newsId=9169&furtherNews=yes>.

⁹³⁹ Promoting Adult Learning in the Workplace. European Commission (Brussels) 6 August 2018. Access Date: 24 October 2018. <http://ec.europa.eu/social/main.jsp?langId=en&catId=1146&newsId=9169&furtherNews=yes>.

⁹⁴⁰ Gig Economy: Employment Committee MEPs Want to Boost Workers’ Rights. European Parliament Committee on Employment and Social Affairs (Brussels) 10 October 2018. Access Date: 24 October 2018.

<http://www.europarl.europa.eu/news/en/press-room/20181017IPR16398/gig-economy-employment-committee-meps-want-to-boost-workers-rights>.

⁹⁴¹ Gig Economy: Employment Committee MEPs Want to Boost Workers’ Rights. European Parliament Committee on Employment and Social Affairs (Brussels) 10 October 2018. Access Date: 24 October 2018.

<http://www.europarl.europa.eu/news/en/press-room/20181017IPR16398/gig-economy-employment-committee-meps-want-to-boost-workers-rights>.

⁹⁴² ESCO One Year On: Major Uptake by Public and Private Organisations Shows its Added Value. European Commission (Brussels) 11 October 2018. Access Date: 24 October 2018.

<http://ec.europa.eu/social/main.jsp?langId=en&catId=1146&newsId=9212&furtherNews=yes>.

⁹⁴³ ESCO One Year On: Major Uptake by Public and Private Organisations Shows its Added Value. European Commission (Brussels) 11 October 2018. Access Date: 24 October 2018.

<http://ec.europa.eu/social/main.jsp?langId=en&catId=1146&newsId=9212&furtherNews=yes>.

⁹⁴⁴ Social Agenda 53 — The future of work. European Commission (Brussels) 30 October 2018. Access Date: 26 November 2018. <https://ec.europa.eu/social/main.jsp?catId=737&langId=en&pubId=8150&furtherPubs=yes>.

⁹⁴⁵ Social Agenda 53 — The future of work. European Commission (Brussels) 30 October 2018. Access Date: 26 November 2018. <https://ec.europa.eu/social/main.jsp?catId=737&langId=en&pubId=8150&furtherPubs=yes>.

providers, businesses, trade unions, and the public to participate in vocational skills training programs.⁹⁴⁶

On 20 November 2018, the European Investment Bank and Spanish bank Bankia drafted a EUR50 million plan to encourage small and medium businesses to hire unemployed Spanish youth.⁹⁴⁷ The plan will also assist youth in developing valuable skills for a new world of work and will include assets for future extension to businesses outside of Spain.⁹⁴⁸

On 26 November 2018, the EMPL revised its draft report for the European Globalization Adjustment Fund (EGF) for the period of 2021-2027.⁹⁴⁹ EGF, set by the European Union in 2006, is designed to give support to workers made redundant by new technologies and the changing world of work, including those affected by job outsourcing as a result of globalization.⁹⁵⁰ The revision of EGF aims to provide more effective interventions and financially support displaced workers and local economies affected by global changes in labour and employment.⁹⁵¹

On 6 December 2018, the EMPL reviewed the proposal for the European Social Fund Plus (ESF+), a long-term EU budget 2021-2027 presented by the European Commission in May 2018.⁹⁵² ESF+ will allow the EU and its Member States to provide more integrated and targeted support in response to the social and labour market challenges that people in Europe face today.⁹⁵³ The amendment of the ESF+ proposal included a 19 percent increase in funding aimed to directly benefit youth and long-term unemployed workers through education and training programs that encourage lifelong learning.⁹⁵⁴

The European Union has ensured all workers have access to the skills and education necessary to adapt and prosper in the new world of work brought by innovation through emerging technologies.

Thus, the European Union receives a score of +1.

Analyst: Kathryn Mullins

⁹⁴⁶ Vocational Education and Training at the heart of Europe: Launch of third European Vocational Skills Week. European Commission (Brussels) 5 November 2018. Access Date: 26 November 2018.

<https://ec.europa.eu/social/main.jsp?langId=en&catId=89&newsId=9230&furtherNews=yes>.

⁹⁴⁷ Juncker Plan: €50 million to support youth employment in Spain. European Commission (Brussels) 20 November 2018. Access Date: 26 November 2018.

<https://ec.europa.eu/social/main.jsp?catId=89&langId=en&newsId=9249&furtherNews=yes>.

⁹⁴⁸ Juncker Plan: €50 million to support youth employment in Spain. European Commission (Brussels) 20 November 2018. Access Date: 26 November 2018.

<https://ec.europa.eu/social/main.jsp?catId=89&langId=en&newsId=9249&furtherNews=yes>.

⁹⁴⁹ Committee vote: European Globalisation Adjustment Fund (EGF). European Parliament Committee on Employment and Social Affairs (Brussels) 26 November 2018. Access Date: 26 November 2018.

[http://www.emeeeting.europarl.europa.eu/committees/agenda/201811/EMPL/EMPL\(2018\)1127_1P/sitt-8840604](http://www.emeeeting.europarl.europa.eu/committees/agenda/201811/EMPL/EMPL(2018)1127_1P/sitt-8840604).

⁹⁵⁰ Committee vote: European Globalisation Adjustment Fund (EGF). European Parliament Committee on Employment and Social Affairs (Brussels) 26 November 2018. Access Date: 26 November 2018.

[http://www.emeeeting.europarl.europa.eu/committees/agenda/201811/EMPL/EMPL\(2018\)1127_1P/sitt-8840604](http://www.emeeeting.europarl.europa.eu/committees/agenda/201811/EMPL/EMPL(2018)1127_1P/sitt-8840604).

⁹⁵¹ Committee vote: European Globalisation Adjustment Fund (EGF). European Parliament Committee on Employment and Social Affairs (Brussels) 26 November 2018. Access Date: 26 November 2018.

[http://www.emeeeting.europarl.europa.eu/committees/agenda/201811/EMPL/EMPL\(2018\)1127_1P/sitt-8840604](http://www.emeeeting.europarl.europa.eu/committees/agenda/201811/EMPL/EMPL(2018)1127_1P/sitt-8840604).

⁹⁵² Committee vote: European Social Fund +. European Parliament Committee on Employment and Social Affairs (Brussels) 6 December 2018. Access Date: 6 December 2018.

[http://www.emeeeting.europarl.europa.eu/committees/agenda/201812/EMPL/EMPL\(2018\)1203_1/sitt-9168934](http://www.emeeeting.europarl.europa.eu/committees/agenda/201812/EMPL/EMPL(2018)1203_1/sitt-9168934).

⁹⁵³ EU budget: a new European Social Fund Plus. European Commission (Brussels) 30 May 2018. Access Date: 15 February 2019.

⁹⁵⁴ Committee vote: European Social Fund +. European Parliament Committee on Employment and Social Affairs (Brussels) 6 December 2018. Access Date: 6 December 2018.

[http://www.emeeeting.europarl.europa.eu/committees/agenda/201812/EMPL/EMPL\(2018\)1203_1/sitt-9168934](http://www.emeeeting.europarl.europa.eu/committees/agenda/201812/EMPL/EMPL(2018)1203_1/sitt-9168934).