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presents the

## **2015 Schloss Elmau G7 Summit Interim Compliance Report**

9 June 2015 to 20 February 2016

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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, June 8, 2015

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## 1. Macroeconomic Policy: Foster Growth

“To ensure that G7 countries operate at the technological frontier in the years ahead, we will foster growth by promoting education.”

*G7 Elmau Schloss Summit Declaration*

### Assessment

	Lack of Compliance	Work in Progress	Full Compliance
Canada			+1
France			+1
Germany			+1
Italy		0	
Japan			+1
United Kingdom			+1
United States			+1
European Union			+1
Average	+0.88		

### Background

Economic growth has always been one of the foremost concerns of the G7. According to the 2015 Elmau Leaders' Declaration, G7 economies continue to face macroeconomic obstacles, such as “unemployment [that] is still too high ... prolonged low inflation rates, weak investment and demands, high public and private debt, sustained internal and external imbalances, geopolitical tensions as well as financial market volatility.”<sup>1</sup> Education is recognized as a key factor in driving economic growth and combatting structural economic weakness.<sup>2,3,4,5,6</sup> As part of its efforts to surmount these problems, the G7 has identified education as a policy domain worthy of particular attention.

### Commitment Features

A member's compliance with this commitment is determined by two components: the promotion of education firstly and the fostering of future technological and economic growth through that promotion secondly.

Full compliance thus requires member states to promote education. They must also incorporate the centrality of education to future technological and economic growth into their plans (or other means of “promotion”), because the advancement of education for its own sake fails to address the second criterion of the commitment.

The Leaders' Declaration also cites “promoting ... innovation, protecting intellectual property rights, supporting private investment with a business friendly climate especially for small and medium-sized

<sup>1</sup> Leaders' Declaration: G7 Elmau Summit, 8 June 2015. Access Date: 18 January 2016.

<http://www.g8.utoronto.ca/summit/2015elmau/2015-G7-declaration-en.html>.

<sup>2</sup> The Knowledge Capital of Nations: Education and the Economics of Growth, Stanford University, n.d., Date of Access: 18 January 2016. <http://hanushek.stanford.edu/publications/knowledge-capital-nations-education-and-economics-growth>

<sup>3</sup> Higher Education and Economic Development in Africa, Harvard University, February 2006, Date of Access: 18 January 2016.

[http://siteresources.worldbank.org/INTAFRREGTOPEDUCATION/Resources/444659-1212165766431/ED\\_Higher\\_education\\_economic\\_development\\_Africa.pdf](http://siteresources.worldbank.org/INTAFRREGTOPEDUCATION/Resources/444659-1212165766431/ED_Higher_education_economic_development_Africa.pdf)

<sup>4</sup> Education and Economic Development in Africa, University of South Florida, 17 August 2010, Date of Access: 18 January 2016.

[http://www.uneca.org/sites/default/files/uploaded-documents/AEC/2010/Papers/session\\_ii.2.1\\_2\\_education\\_and\\_economic\\_development\\_in\\_africa.pdf](http://www.uneca.org/sites/default/files/uploaded-documents/AEC/2010/Papers/session_ii.2.1_2_education_and_economic_development_in_africa.pdf)

<sup>5</sup> Education and Economic Growth, National Institute of Economic and Social Research, August 2003, Date of Access: 18 January 2016. [http://cee.lse.ac.uk/conference\\_papers/28\\_11\\_2003/martin\\_weale.pdf](http://cee.lse.ac.uk/conference_papers/28_11_2003/martin_weale.pdf)

<sup>6</sup> Education and Economic Growth, OECD, n.d., Date of Access: 18 January 2016. <http://www.oecd.org/edu/innovation-education/1825455.pdf>

enterprises” and other investment-related actions as means to foster growth and keep abreast of new frontiers in technology. However, only measures geared at promoting education specifically are relevant to this commitment.<sup>7</sup>

The commitment states that compliance resides in the “promotion” of education. Thus, failure to implement specific policies to advance education does not, per se, constitute noncompliance. The “promotion” of education can include, but is not limited to, public statements acknowledging the importance of education to technological and economic growth, or dedication to keeping education-related issues on the list of a country’s priority political issues.

**Scoring Guidelines**

-1	Member does NOT progress towards promoting education for purposes of fostering technological and economic growth
0	Member makes progress towards promoting education, but does NOT do so explicitly for the purposes of fostering technological and economic growth
+1	Member promotes education for the explicit purposes of fostering technological and economic growth

*Lead Analyst: Humayun Ahmend*

**Canada: +1**

Canada has been awarded a score of +1 for promoting education for the explicit purpose of fostering technological and economic growth.

On 31 July 2015, the Honourable Michelle Rempel, Minister of State for Western Economic Diversification, announced two investments. The first, federal funding of CAD291,375, will enable Innovate Calgary, in partnership with the University of Calgary and SAIT Polytechnic, to establish the Kinetica Innovation Centre for high-tech start-up companies to develop technological solutions for the energy sector and engage students to participate in these projects. The second investment of CAD297,500 “will support SAIT Polytechnic in the development of 3D virtual training modules for skilled trade workers, which will allow students to access training through a blended classroom and online distance learning experience. This investment will promote economic growth by helping to train workers for in-demand jobs in the skilled trades.”<sup>8</sup>

On 24 November 2015, Victor Dodig, the head of one of Canada’s largest banks, CIBC, recognized Canada’s high overall participation rate in post-secondary education compared to other industrialized countries, while still criticizing it for not producing the types of skills to derive economic growth.<sup>9</sup>

On 14 January 2016, in response to a question about whether Canada was doing enough on code and tech education, Prime Minister Justin Trudeau responded that the government needs to a “do a better job” and make sure that “Canada’s education system ... is meeting the challenges of the future.”<sup>10</sup> This was after comments in the media that Canada’s school system was behind other countries when it came to teaching high tech, computer programming and computer coding. Only in high school students can take such courses.<sup>11</sup>

<sup>7</sup> Leaders’ Declaration: G7 Elmau Summit, 8 June 2015. Access Date: 18 January 2016. <http://www.g8.utoronto.ca/summit/2015elmau/2015-G7-declaration-en.html>

<sup>8</sup> Government of Canada. Archived - Government of Canada Supports High-Tech Innovation and Skills Training Opportunities in Western Canada. 31 July 2015. Access Date: 3 February 2016. <http://news.gc.ca/web/article-en.do?nid=1011569>.

<sup>9</sup> Canadians getting education, but not the skills to drive growth, CIBC 24 November 2015. Access Date 4 February 2016. <http://www.ctvnews.ca/business/canadians-getting-education-but-not-the-skills-to-drive-growth-cibc-1.2672473>.

<sup>10</sup> Trudeau visits Ontario’s tech industry in Waterloo Region, Global News. 14 January 2016. Access Date: 4 February 2016. <http://globalnews.ca/news/2453269/trudeau-visits-ontarios-tech-industry-in-waterloo-region/>.

<sup>11</sup> Back to school: Canada lagging in push to teach kids computer coding, CBC. 31 August 2015. Access Date: 4 February 2016. <http://www.cbc.ca/news/technology/back-to-school-canada-lagging-in-push-to-teach-kids-computer-coding-1.3185926>.

On 2 February 2016, Canada's Consortium for Aerospace Research and Innovation in Canada (CARIC) and Natural Sciences and Engineering Research Council of Canada (NSERC) announced the launch of three aerospace research projects in collaboration with the European Commission.<sup>12</sup> Minister for Innovation, Science and Economic Development Navdeep Bains stated that the Canadian government "remains committed to supporting such collaborations as a way of inspiring new, innovative technologies that will help Canada continue its leadership in the aerospace industry."<sup>13</sup>

Thus, Canada receives a score +1 for promoting education for the explicit purposes of fostering technological and economic growth. Canada is making progress in promoting education for the purpose of technological and economic growth.

*Analyst: Yalda Mehran*

**France: +1**

France has fully complied with its commitment to promote education for the purposes of fostering technological and economic growth.

In May 2015, France implemented Education Minister Najat Vallaud-Belkacem's educational reform in France's middle schools for students aged 11 to 15 years, amidst widespread contestation from unions, teachers and citizens alike.<sup>14</sup> The objective of the 'educational priority' policy is to combat increasing social inequality and declining academic performance in French schools by reducing the impact of social and economic barriers on disadvantaged students' academic performance.<sup>15</sup> According to an OECD study conducted in 2013, one of the strongest predictors of a pupil's academic performance in France is their family's socioeconomic status.<sup>16</sup> Hence, in addition to creating a barrier in achieving academic success, it ultimately results in cumulative social and economic disadvantage, and significant income disparity in later life.

Key measures of France's 2015 educational reform include: increased interaction between teachers and students through the implementation of personalized support time for all students; the creation of eight interdisciplinary teaching modules organized by teachers from a variety of disciplines; increased autonomy for headteachers in the curriculum; the eradication of "European/bilingual classes" (*classes bilangues*) for gifted 12-year olds, to be replaced by a generalized second foreign language option for all students; and the gradual elimination of Latin and Greek classes, to be replaced by an interdisciplinary optional class on "Ancient Languages and Cultures."<sup>17</sup>

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<sup>12</sup> CARIC and NSERC, together with the European Commission, launches three collaborative research projects on crucial research areas for the aerospace sector, Newswire (Montreal) 2 February 2016. Date of Access: 19 March 2016.

<http://www.newswire.ca/news-releases/caric-and-nserc-together-with-the-european-commission-launches-three-collaborative-research-projects-on-crucial-research-areas-for-the-aerospace-sector-567341941.html>

<sup>13</sup> CARIC and NSERC, together with the European Commission, launches three collaborative research projects on crucial research areas for the aerospace sector, Newswire (Montreal) 2 February 2016. Date of Access: 19 March 2016.

<http://www.newswire.ca/news-releases/caric-and-nserc-together-with-the-european-commission-launches-three-collaborative-research-projects-on-crucial-research-areas-for-the-aerospace-sector-567341941.html>

<sup>14</sup> Education priority – a government programme to cut the impact of social inequalities, Ministère de l'Enseignement supérieur et de la Recherche (Paris, France) November 2015. Access Date: 4 February 2016. <http://www.education.gouv.fr/cid97736/educational-priority-government-programme-cut-the-impact-social-inequalities.html>.

<sup>15</sup> Education priority – a government programme to cut the impact of social inequalities, Ministère de l'Enseignement supérieur et de la Recherche (Paris, France) November 2015. Access Date: 4 February 2016. <http://www.education.gouv.fr/cid97736/educational-priority-government-programme-cut-the-impact-social-inequalities.html>.

<sup>16</sup> Why French school curriculum and timetable reforms forced teachers onto the streets, The Conversation (Melbourne, Australia) May 2015. Access Date: 4 February 2016. <http://theconversation.com/why-french-school-curriculum-and-timetable-reforms-forced-teachers-onto-the-streets-42193>.

<sup>17</sup> A guide to education reforms in France in 2015, FrenchEntrée (Bath, United Kingdom) September 2015. Access Date: 4 February 2016. <https://www.frenchentree.com/living-in-france/education/education-reforms-in-france-2015/>.

Furthermore, on 7 May 2015, a comprehensive national digital plan for education was announced by President François Hollande. The aim of the country-wide digital plan is to incorporate digital technology in schools by 2016 by 40 per cent of 800,000 Grade 7 pupils by the 2016 school year; 70 per cent by 2017; and 100 per cent by 2018.<sup>18</sup> This ambitious national plan includes the public investment of EUR1 billion over the next three years for research and development, and the implementation of digital education.<sup>19</sup> The digital plan is currently in its “foreshadowing” phase — in September 2015, students and teachers from over 600 pilot primary, middle, and secondary schools were provided with academic resources and services on individual mobile devices.<sup>20</sup> Results from these large-scale experiments will be utilized to streamline and enhance the introduction of digital technology in schools across the country, effective 2016.

France has undertaken tangible measures in the promotion of education through the 2015 educational reform and digital plan for education, thereby demonstrating its dedication to keeping education-related issues on its list of priority political issues. Thus, France has been awarded a score of +1 for complying with its commitment to promote education for the purposes of fostering technological and economic growth.

*Analyst: Angela Xie*

**Germany: +1**

Germany has fully complied with its commitment to promote education, economic growth and technological innovation.

In November 2015, the Bundestag approved the federal budget for the 2016 fiscal year.<sup>21</sup> The budget included a EUR1.1 billion increase in funding to the Federal Ministry of Education and Research. The Ministry claimed that this “strengthened education and research as ... fields of priority.”<sup>22</sup> Increases to funding include, inter alia, a 16 per cent increase in funding for advanced vocational training, a 9 per cent increase in funding for innovation assistance in the Länder of the former East Germany, and a 9 per cent increase in funding for “electronics systems” under the German government’s “High-Tech Strategy.”<sup>23</sup>

Germany has invested in education with explicit regard to technological and economic goals. Therefore, it has been awarded a score of +1.

*Analyst: Tania Sleman*

**Italy: 0**

Italy has partially complied with its commitment to foster technological and economic growth through promoting education. Although substantial education reform has taken place, these reforms do not explicitly demonstrate a commitment to technological advancement.

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<sup>18</sup> The French Digital Plan for Education, Ministère de l’Enseignement supérieur et de la Recherche (Paris, France) January 2016. Access Date: 4 February 2016. <http://www.education.gouv.fr/cid97742/the-french-digital-plan-for-education.html>.

<sup>19</sup> The French Digital Plan for Education, Ministère de l’Enseignement supérieur et de la Recherche (Paris, France) January 2016. Access Date: 4 February 2016. <http://www.education.gouv.fr/cid97742/the-french-digital-plan-for-education.html>.

<sup>20</sup> The French Digital Plan for Education, Ministère de l’Enseignement supérieur et de la Recherche (Paris, France) January 2016. Access Date: 4 February 2016. <http://www.education.gouv.fr/cid97742/the-french-digital-plan-for-education.html>.

<sup>21</sup> German Bundestag approves budget for next fiscal year, Deutsche Welle (Berlin) 27 November 2015. Date of Access: 21 March 2016. <http://www.dw.com/en/german-bundestag-approves-budget-for-next-fiscal-year/a-18880539>

<sup>22</sup> The Budget of the Federal Ministry of Education and Research, Federal Ministry of Education and Research (Berlin). Date of Access: 21 March 2016. <https://www.bmbf.de/en/education-and-research-priority-areas-of-federal-government-policy-1410.html>.

<sup>23</sup> The Budget of the Federal Ministry of Education and Research, Federal Ministry of Education and Research (Berlin). Date of Access: 21 March 2016. <https://www.bmbf.de/en/education-and-research-priority-areas-of-federal-government-policy-1410.html>.

The Italian government demonstrated its commitment to promoting education in its “Good Schools” reform, passed in Italian parliament on 9 July 2015.<sup>24</sup> Within this reform are four key areas that clearly demonstrate a commitment to educational reform in the interest of economic progress.

First, the reform redefines the process by which teacher salaries are awarded; instead of salaries that increase based off a teacher’s seniority, higher salaries are instead awarded on the basis of merit.<sup>25</sup> This demonstrates a commitment to economic progress by incentivizing teacher efficacy.

Second, the reform introduces an added measure of autonomy for individual schools by empowering school principals with the authority to evaluate, reward, and hire the teachers under them.<sup>26</sup> Through this measure of autonomy, Italy demonstrates its commitment to economic progress by streamlining its education administration network and, once again, creating — through the practice of rewarding effective teachers — an incentive for excellence in teaching.

Third, the reform creates approximately 100,000 full-time teaching positions — the exams for 63,712 of which have taken place in January 2016 — in order to strengthen the number and quality of Italian teachers.<sup>27</sup> In addition, the reform has facilitated the transition of 90,000 temporary education workers to permanent positions.<sup>28</sup> Through bolstering the ranks of its teachers in this way, Italy has demonstrated its commitment to the advancement of its education sector.

Fourth, the Italian government has allocated EUR3.2 billion to the creation and refurbishing of schools.<sup>29</sup> Within this allocation are provisions that require students in secondary, professional, and technical education programs to spend a certain amount of time directly participating in the workplace.<sup>30</sup> In providing material backing to the improvement of education facilities and by pre-emptively undertaking the transition of students to the workplace, Italy demonstrates sufficient compliance to upholding its commitment to advancing education in the interest of advancing its economy.

However, while Italy has shown itself to have adequately made strides in the way of its education, and while such strides have been in the interest of its economic prosperity, no clear commitment to affirming the importance of technology has been made. As such, Italy has been awarded a score of 0.

*Analyst: Michael Switzer*

### **Japan: +1**

Japan has fully complied with its commitment to promote education for the purposes of fostering technological and economic growth.

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<sup>24</sup> Italian parliament approves school system reform, Shanghai Daily (Shanghai) 9 July 2015. Access Date: 3 February 2016. [http://www.shanghaidaily.com/article/article\\_xinhua.aspx?id=291695](http://www.shanghaidaily.com/article/article_xinhua.aspx?id=291695).

<sup>25</sup> Italy’s Renzi gets final approval for contest schools reform, Reuters (New York) 9 July 2015. Access Date: 3 February 2016. <http://www.reuters.com/article/us-italy-reform-education-idUSKCN0PJ1ED20150709>.

<sup>26</sup> Factbox: the Good School reform, Agenzia Nazionale Stampa Associata (Rome) 5 May 2015. Access Date: 3 February 2016. [http://www.ansa.it/english/news/2015/05/05/factbox-the-good-school-reform\\_a07d6741-c3ed-429b-ad1f-b63618d0e41c.html](http://www.ansa.it/english/news/2015/05/05/factbox-the-good-school-reform_a07d6741-c3ed-429b-ad1f-b63618d0e41c.html).

<sup>27</sup> The Education Ministry announces a mass competitive exam next spring to hire 63,712 teachers, Italy24 (Milan) 30 December 2015. Access Date: 3 February 2016. [http://www.italy24.ilsole24ore.com/art/government-policies/2015-12-29/concorso-scuola-125311\\_PRV.php?uuiid=ACcXZK1B](http://www.italy24.ilsole24ore.com/art/government-policies/2015-12-29/concorso-scuola-125311_PRV.php?uuiid=ACcXZK1B).

<sup>28</sup> The Education Ministry announces a mass competitive exam next spring to hire 63,712 teachers, Italy24 (Milan) 30 December 2015. Access Date: 3 February 2016. [http://www.italy24.ilsole24ore.com/art/government-policies/2015-12-29/concorso-scuola-125311\\_PRV.php?uuiid=ACcXZK1B](http://www.italy24.ilsole24ore.com/art/government-policies/2015-12-29/concorso-scuola-125311_PRV.php?uuiid=ACcXZK1B).

<sup>29</sup> Italy’s Renzi gets final approval for contest schools reform, Reuters (New York) 9 July 2015. Access Date: 3 February 2016. <http://www.reuters.com/article/us-italy-reform-education-idUSKCN0PJ1ED20150709>.

<sup>30</sup> The Long Read: The “Good School” reform aims to fill the gap between the classroom and the workplace, Italy24 (Milan) 30 December 2015. Access Date: 3 February 2016. <http://www.italy24.ilsole24ore.com/art/government-policies/2014-12-09/intervista-giannini-131353.php?uuiid=ABxSn7NC>.

As part of a revitalization process, the Japanese government under Prime Minister Shinzo Abe is introducing several structural reforms and initiatives aimed at improving the education system.<sup>31</sup> Foremost among these is a push for instruction of comprehensive English language education as early as the third grade, by 2020.<sup>32</sup> An International Baccalaureate program is being introduced to Japanese high schools, and the government has created an international exchange program that it hopes will send 120,000 Japanese university students abroad by 2020.<sup>33</sup>

New subsidies are being introduced to increase funding to select Japanese universities, in an effort to make them more internationally competitive and raise their global rankings.<sup>34</sup> The Abe government is putting a particular focus on scientific research and vocational training, in order to increase academic relevance and graduate students with more labour market viability.<sup>35</sup> The Ministry of Education, Culture, Sports, Science and Technology has urged universities to adapt their curricula to better suit these aims, going so far as to publish a letter encouraging public universities to discontinue their economics, law, and liberal arts programs in favour of more directly labour-applicable ones.<sup>36</sup> Conversely, shrinking Japanese demographics are presenting an obstacle for economic development and educational expansion.

Therefore, Japan receives a score of +1.

*Analyst: Hussain Jasim*

### **United Kingdom: +1**

The United Kingdom has fully complied with its commitment to promote education for the explicit purposes of fostering technological and economic growth.

On 27 October 2015, the Education Committee of the House of Commons collaborated with the Business, Innovation and Skills Committee to publish the 1st Joint Special Report on Education, Skills and Productivity. In preparation for the report, the committees jointly commissioned research from the National Institute of Economic and Social Research. The report itself compared UK graduates' contributions to productivity compared to those of the US, France and Germany, and concluded that the principal means of increasing worker contribution to productivity are "innovation" and "improvements to efficiency."<sup>37</sup>

The UK has taken steps to prioritize education and support investment in both technology and innovation for the purpose of economic growth. Thus, the UK has received a score of +1 for full compliance.

*Analysts: Ahmed Hasan, Asic Chen, Nikita Gupta and Rachel Glowinsky*

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<sup>31</sup> The year in education: After all the talk, can Japan walk the walk in 2015? The Japan Times 28 December 2014. Access Date: 4 February 2016. <http://www.japantimes.co.jp/community/2014/12/28/issues/the-year-in-education-after-all-the-talk-can-japan-walk-the-walk-in-2015/#.VrOIm6OYreQ>.

<sup>32</sup> Japanese education reforms to further prepare students for a globalised world, 4 February 2014. Date of Access: 4 February 2016. <http://monitor.icef.com/2014/02/japanese-education-reforms-to-further-prepare-students-for-globalised-world/>

<sup>33</sup> Wholesale changes for Japanese education arising from globalisation and demographics, ICF Monitor 1 April 2015. Access Date: 4 February 2016. <http://monitor.icef.com/2015/04/wholesale-changes-for-japanese-education-globalisation-and-demographics/>.

<sup>34</sup> Japan boosts internationalisation funding in a bid to climb global rankings, 6 October 2014. Date of Access: 4 February 2016. <http://monitor.icef.com/2014/10/japan-boosts-internationalisation-funding-bid-climb-global-rankings/>

<sup>35</sup> Japan Rethinks Higher Education in Skills Push, 2 August, 2015. Date of Access: 4 February 2016. <http://www.wsj.com/articles/japan-rethinks-higher-education-in-skills-push-1438571119>

<sup>36</sup> Japan's Education Ministry Says to Axe Social Science and Humanities, Social Science Space 25 August 2015. Access Date: 4 February 2016. <http://www.socialsciencespace.com/2015/08/japans-education-ministry-says-to-axe-social-science-and-humanities/>.

<sup>37</sup> Education, skills and productivity: commissioned research, House of Commons 27 October 2015. Access Date: 4 February 2016. <http://www.publications.parliament.uk/pa/cm201516/cmselect/cmbis/565/565.pdf>.

### **United States: +1**

The United States has fully complied with its commitment to promote education in the direction of fostering technological and economical growth.

President Barack Obama has started “Computer Science for All,” which is a “bold new initiative to empower all American students from kindergarten through high school to learn computer science,” as stated on the White House’s website on 30 January 2016.<sup>38</sup> The hope is to inspire students to be creators in their rapidly growing, technology-driven world. The President of the United States recognizes that our economy is shifting faster than ever, and computer science skills are a basic necessity for economic opportunity and growth.

In 2014, 65 million jobs belonged to the technology sector in America.<sup>39</sup> Technology based jobs will only continue to grow as more technology is released to the public for use. On March 29, 2012, US officials said that jobs in the field of information technology (IT) will grow 22 per cent through 2020.<sup>40</sup> The IT employment growth rate was projected by the US Bureau of Labor Statistics.

The President’s commitment requires USD4 billion in state funding, and USD100 million for school districts in his forthcoming budget to train teachers, and to provide access to exceptional educational resources.<sup>41</sup> USD135 million in computer science funding is to be available, starting this year, from the National Science Foundation and the Corporation for National and Community Service.<sup>42</sup>

On 30 January 2016, more than 30 school districts have committed to expand computer science opportunities.<sup>43</sup> In addition to this, Microsoft and Code.org is offering to teach computer science to 25,000 teachers.<sup>44</sup> Similarly, the US Department of Education has funded more than USD1 billion to increase awareness of computer science resources for out-of-school programs.<sup>45</sup> Therefore, the United States has been awarded a +1 for full compliance.

*Analyst: Arani Kulamurugan*

### **European Union: +1**

The European Union has fully complied with its commitment to foster both technological and economic growth through the promotion of education.

Through its continued promotion of the Education and Training 2020 (ET2020) initiative — as demonstrated in the December 2015 Joint Report of the Council and the Commission on the implementation of the strategic framework for European cooperation in education and training — the European Union has clearly shown a commitment not only to furthering education, but also to technological

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<sup>38</sup> Computer Science For All, The White House (Washington, DC) 30 January 2016. Date of Access: 3 February 2016.

<https://www.whitehouse.gov/blog/2016/01/30/computer-science-all>.

<sup>39</sup> United States Tech Industry Employs 6.5 Million in 2014, CompTIA 10 February 2015. Date of Access: 4 February 2016.

<https://www.comptia.org/about-us/newsroom/press-releases/2015/02/10/united-states-tech-industry-employs-6.5-million-in-2014>.

<sup>40</sup> IT jobs will grow 22 per cent through 2020, says US, Computerworld 29 March 2012. Date of Access: 4 February 2016.

<http://www.computerworld.com/article/2502348/it-management/it-jobs-will-grow-22--through-2020--says-u-s-.html>.

<sup>41</sup> FACT SHEET: President Obama Announces Computer Science For All Initiative, 30 January 2016. Date of Access: 4 February 2016. <https://www.whitehouse.gov/the-press-office/2016/01/30/fact-sheet-president-obama-announces-computer-science-all-initiative-0>

<sup>42</sup> Computer Science For All, 30 January 2016. Date of Access: 4 February 2016.

<https://www.whitehouse.gov/blog/2016/01/30/computer-science-all>

<sup>43</sup> FACT SHEET: President Obama Announces Computer Science For All Initiative, The White House (Washington, DC) 30 January 2016. Date of Access: 4 February 2016. <https://www.whitehouse.gov/the-press-office/2016/01/30/fact-sheet-president-obama-announces-computer-science-all-initiative-0>.

<sup>44</sup> Microsoft and Code.org want to teach kids to code with Minecraft, 16 November 2015. Date of Access: 4 February 2016.

<http://www.cnet.com/news/microsoft-and-code-org-want-to-teach-kids-to-code-with-minecraft/>

<sup>45</sup> A New Chapter for Computer Science Education, 7 December 2015. Date of Access: February 4, 2016.

<http://innovation.ed.gov/2015/12/07/a-new-chapter-for-computer-science-education/>

progress as both a means to enhance education and as an outcome of effective education.<sup>46</sup> One of the six priority areas proposed in the December 2015 Joint Report is promoting “Open and innovative education and training, including by fully embracing the digital era.”<sup>47</sup> In calling for a style of education that highlights the importance of digital fluency, the European Union has displayed its commitment to advancing education and translating this advancement into the technological and economic playing field.

The European Union has further demonstrated its commitment to advancing its technology and economy through education by the work of its Erasmus+ program. In terms of how education would benefit the economy, the stated objectives within the January 2016 Erasmus+ Program Guide include “[Improving] the level of key competences and skills, with particular regard for their relevance for the labour market.”<sup>48</sup> In terms of the role of education in technological advancement, the Program Guide references joint frameworks that aim to “improve the quality of education in maths and the natural sciences, and to increase the take-up of the subjects in upper secondary and higher education.”<sup>49</sup>

As such, the European Union has demonstrated a commitment to promoting education in and of itself, and promoting education specifically for the sake of economic and technological advancement. Because of this, it has been awarded a score of +1 for full compliance.

*Analyst: Michael Switzer*

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<sup>46</sup> 2015 Joint Report of the Council and the Commission on the implementation of the strategic framework for European cooperation in education and training (ET 2020) — New priorities for European cooperation in education and training, European Commission (Brussels) 15 December 2015. Access date: 4 February 2016. [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C\\_.2015.417.01.0025.01.ENG&toc=OJ:C:2015:417:TOC#ntr8-C\\_2015417EN.01002501-E0008](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2015.417.01.0025.01.ENG&toc=OJ:C:2015:417:TOC#ntr8-C_2015417EN.01002501-E0008).

<sup>47</sup> 2015 Joint Report of the Council and the Commission on the implementation of the strategic framework for European cooperation in education and training (ET 2020) — New priorities for European cooperation in education and training, European Commission (Brussels) 15 December 2015. Access date: 4 February 2016. [http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C\\_.2015.417.01.0025.01.ENG&toc=OJ:C:2015:417:TOC#ntr8-C\\_2015417EN.01002501-E0008](http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2015.417.01.0025.01.ENG&toc=OJ:C:2015:417:TOC#ntr8-C_2015417EN.01002501-E0008).

<sup>48</sup> Erasmus+ Programme Guide, European Commission (Brussels) 7 January 2016. Access date: 4 February 2016. [http://ec.europa.eu/programmes/erasmus-plus/documents/erasmus-plus-programme-guide\\_en.pdf](http://ec.europa.eu/programmes/erasmus-plus/documents/erasmus-plus-programme-guide_en.pdf).

<sup>49</sup> Erasmus+ Programme Guide, European Commission (Brussels) 7 January 2016. Access date: 4 February 2016. [http://ec.europa.eu/programmes/erasmus-plus/documents/erasmus-plus-programme-guide\\_en.pdf](http://ec.europa.eu/programmes/erasmus-plus/documents/erasmus-plus-programme-guide_en.pdf).