

2. INTERNATIONAL OBLIGATIONS REGARDING TECHNOLOGICAL PROTECTION MEASURES AND THEIR EFFECTS ON EDUCATION: THE CASE OF COLOMBIA

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ABSTRACT

Countries around the world are incorporating technology in education with the purpose of giving new learners the abilities they need for the 21st century. For developing countries, such as Colombia, the use of Information and Communication Technology (ICT) in education also presents the opportunity to solve the problems plaguing its educational system and fix social disparities. Colombia is therefore undertaking significant efforts to develop a policy for the incorporation of technology in education. However, its half-hearted attempt to implement the obligations related to technological protection measures (TPM) laid down in the United States (US) Free Trade Agreements (FTAs) may act as a barrier for the fruition of these policies.

Although scholars have studied the effects that the United States FTAs' copyright provisions have on developing countries, the potential effects of these provisions on education in Colombia have not been investigated, perhaps because this FTA entered into force only recently. Therefore, there is a need for scholarship on this specific aspect of US-Colombia FTAs. This paper argues that an inadequate implementation of the TPM provisions, as has been the case with Colombia so far, can be detrimental for Colombia's policies on TIC and education.

In order to contextualise the argument, this paper first explains the incorporation of technology in education focusing on Colombia. Secondly, it describes the US-Colombia FTA's obligations regarding TPM. Thirdly, it argues that Colombia's attempted implementation of the US-Colombia FTA's TPM provisions may act as a barrier for the incorporation of technology in education. Finally, it proposes a solution for the Colombian case.

Keywords: Colombia, Free Trade Agreement, United States, Technological Protection Measures, Education, Technology, Developing Countries, Internet

1. INCORPORATION OF TECHNOLOGY IN EDUCATION: THE CASE OF COLOMBIA

Technology is being incorporated in the learning process around the world. This idea of incorporating technology in

education goes beyond merely using laptops to replace typewriters and the Internet to replace printed material.¹ It also goes beyond a typical conception of distance education, where educational activities happen as they do inside a classroom but where students and teachers are separated by time and location.² Instead, incorporating ICT in education means making technology the main element of education rather than a tool to enhance it.³ This incorporation transforms the learning process⁴ via the use of new educational methodologies and activities such as collaboration, life-long learning, and a model of always-on learning, among other things.

This incorporation has two purposes: *firstly*, to provide children who do not know a world without tablets and the Internet⁵ relevant skills in a more effective manner; and

¹ See UNESCO, 'Open and distance learning: trends, policy and strategy considerations' (2002) 66 <<http://unesdoc.unesco.org/images/0012/001284/128463e.pdf>> accessed 7 June 2016.

² See Steven A. Armatas, *Distance Learning and Copyright: A Guide to Legal Issues* (1st ed., American Bar Association, 2008) 5 ("The advent of digital technologies has enabled more teacher-to-student and student-to-student interaction... As a result of these advances, distance programs may now offer experiences more closely paralleling face-to-face teaching").

³ See UNESCO, *Technologies for Education* (Wadi D. Haddad & Alexandra Draxler ed., 2002) 8-9. <<http://unesdoc.unesco.org/images/0011/001191/119129e.pdf>> accessed 7 June 2016 ("In this new paradigm, ICTs are not a substitute for schooling. They constitute one integral element of this education model-supplementing and enriching traditional institutions, delivery systems, and instructional materials. In this sense, ICTs contribute to the whole system of knowledge dissemination and learning."); Jonathan Anderson, *ICT Transforming Education: a Regional Guide* (2010) 33 <<http://unesdoc.unesco.org/images/0018/001892/189216e.pdf>> accessed 1 June 2017 (... [W]hen the transforming stage is reached, the whole ethos of the institutions is changed: teachers and other support staff regard ICT as a natural part of everyday life of their institutions, which have become centres of learning for their communities").

⁴ See Jonathan Anderson, *ICT Transforming Education: A Regional Guide* (2010) 6 tbl. 1.1. - 1.2. <<http://unesdoc.unesco.org/images/0018/001892/189216e.pdf>> accessed 1 June 2017 (describing the new roles of teachers and students when the learning process is transformed thanks to the use of technology).

⁵ See Ivan Kalaš et al., 'ICT in Primary Education' (UNESCO, 2012) 16 <<http://iite.unesco.org/pics/publications/en/files/3214707.pdf>> accessed 7 June 2016 ("One of the most significant changes over the past decade is this: at primary school we nowadays deal with children of the digital or net generation, that is, with children that

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secondly, to prepare them to be useful for the new knowledge-based economy.⁶

These new educational methodologies and activities are possible thanks partially to Web 2.0 tools such as wikis, blogs, and user-generated content platforms, which promote access, communication, and the transformation of knowledge.⁷ Collaboration, for example, seeks to promote cooperation between students and teachers toward the creation of new knowledge⁸ and between teachers, students, and experts around the world through learning communities.⁹ Blogs and wikis, among other things, allow everyone to be a participant in a discussion and exchange resources, tips, and opinions. Technology has facilitated and promoted lifelong learning by allowing formal institutions to open their courses to the public and individuals to engage in teaching.¹⁰ Finally, a model of

were born into a world where breath-taking technologies have become commonplace.”)

⁶ See Robert B. Kozma, & Isaacs Shafika, *Transforming Education: The Power of ICT Policies*, (UNESCO, 2011) 22 <<http://unesdoc.unesco.org/images/0021/002118/211842e.pdf>> accessed 7 June 2016 (stating that a transformed education has implications in a knowledge-based economy and society where everyone is able and needs to produce and consume knowledge products)

⁷ See Jonathan Anderson, *ICT Transforming Education: A Regional Guide* (2010) 72 <<http://unesdoc.unesco.org/images/0018/001892/189216e.pdf>> accessed 1 June 2017 (describing the characteristics of Web 2.0 tools and their use in education)

⁸ See Robert B. Kozma, & Isaacs Shafika, *Transforming Education: The Power of ICT Policies*, (UNESCO, 2011) 22 <<http://unesdoc.unesco.org/images/0021/002118/211842e.pdf>> accessed 7 June 2016 (stating that technology allows collaboration between students and teachers, promoting the creation of their own knowledge products)

⁹ *ibid*; See UNESCO, *Technologies for Education* (Wadi D. Haddad & Alexandra Draxler ed., 2002) 65 <<http://unesdoc.unesco.org/images/0011/001191/119129e.pdf>> accessed 7 June 2016 (“With ICTs, sharing knowledge resources is enhanced many times over. Putting information on the Web makes it available immediately to anyone in the world with suitable connection. Teachers can share lesson plans with their colleagues in their own jurisdictions and with those far removed from their jurisdictions. Students from all over the world can undertake joint projects, exchange findings, analyze data collectively, and draw reasoned conclusions.”).

¹⁰ See William W. Fisher III et al., ‘The Digital Learning Challenge: Obstacles to Educational Uses of Copyrighted Material in the Digital Age. A Foundational White Paper.’ (2006) §§ 1-1.1 <<http://cyber.law.harvard.edu/media/files/copyrightandeducation.html#TOC>> accessed 7 June 2016 (arguing that technology allows traditional institutions to be open to the public and also allows individuals to engage in teaching and learning activities).

always-on learning seeks to promote continuity in learning by promoting learning outside the classroom.¹¹ This model is implemented through the use of blogs and cloud storage in education, which are accessible anytime and anywhere.

These methodologies and activities respond to the realities of 21st-century society. Collaboration is a crucial skill at a time when employers seek people who are able to create and work together.¹² Lifelong learning becomes necessary in a society where people need to continuously evolve to be valuable for the global market,¹³ and a model of always-on learning responds to the fact that new learners are constantly accessing information.

The purpose of incorporating technology in education for developing countries goes beyond giving new children new skills or transforming the educational process. These countries are counting on the ability of technology to solve serious problems in their educational system¹⁴ such as issues of access, lack of educational resources or qualified teachers. This is the case in Colombia as well.

Colombia has engaged in the process of incorporating technology in education with the strong belief that this incorporation will provide the ability to solve the present crises in its educational system and achieve social inclusion. Therefore, Colombia developed several plans and programs in order to incorporate technology in

¹¹ See UNESCO, *Technologies for Education* (Wadi D. Haddad & Alexandra Draxler ed., 2002) 10 <<http://unesdoc.unesco.org/images/0011/001191/119129e.pdf>> accessed 7 June 2016 (“Technology’s capacity to reach learners in any place and at any time has the potential to promote revolutionary changes in the educational paradigm. Such capacity eliminates the premise that learning time equals classroom time.”)

¹² *Ibid* 36 (“Globalization, creativity, and collaboration are key words in the modern workplace, where employers and employees are expected to share knowledge and work together toward common goals.”)

¹³ See Diego Ernesto Leal Fonseca, ‘Iniciativa Colombiana de Objetos de Aprendizaje: Situación Actual y Potencial para el Futuro’ (2008) 8(8) Apertura 76, 78 <<http://www.redalyc.org/pdf/688/68811215006.pdf>> accessed 1 June 2017 (stating that lifelong learning is a requirement of current society).

¹⁴ See Carolina Rossini, ‘Green-Paper: The State and Challenges of OER in Brazil: From Readers to Writers?’ (Berkman Research Publication No 2010-01, 2010) 11 (...[D]eveloping nations in particular look to use the Internet to replace outdated and insufficient educational systems...”) see also Robert B. Kozma, & Isaacs Shafika, *Unesco, Transforming Education: The Power of ICT Policies* (UNESCO, 2011) 4 <<http://unesdoc.unesco.org/images/0021/002118/211842e.pdf>> accessed 7 June 2016.

education.¹⁵ These included providing hardware and connectivity,¹⁶ promoting collaboration and the creation and exchange of new educational resources called ‘Colombia Aprende’,¹⁷ training teachers in the use of ICT and the development of new methodologies in connection with technology.¹⁸ Thus, in spite of the scarcity of economic resources at its disposal,¹⁹ it is clear that Colombia has begun implementing a comprehensive strategy directed to achieve a total incorporation of technology in education.

2. THE US-COLOMBIA FREE TRADE AGREEMENT: NEW OBLIGATIONS REGARDING TECHNOLOGICAL PROTECTION MEASURES

In 2003, Colombia informed the United States that it wished to enter into commercial negotiations. Colombia’s motivations to sign an FTA with the US were motivated by economic reasons. *Firstly*, the US was Colombia’s major

trading partner. *Secondly*, having an FTA with the United States would provide it access to the American market.²⁰ After negotiations and ratification by the US, the agreement entered into force in May 2012.²¹

Regarding intellectual property rights (IPRs), the United States, following its international policy in the matter, incorporated detailed IP provisions in Chapter 16.

These IPR obligations incorporated in US FTAs have several characteristics. *Firstly*, they are TRIPS-Plus standards.²² *Secondly*, the US introduces these provisions as a template²³ and negotiates on a take-it-or-leave-it basis. *Thirdly*, such provisions tend to closely follow US legislation.²⁴ As a result, most US trading parties acquired very similar obligations regarding IPRs,²⁵ especially because most of them lack bargaining power to promote

¹⁵ The Colombian government has addressed the goals in this field mainly in two plans: Vision 2019 for Education [Visión 2019 para la Educación] and the National ICTs Plan [Plan Nacional de TIC]. These plans are being developed in connection with other plans like the the National Development Plan [El Plan Nacional de Desarrollo], National Competition Policy [Política Nacional de Competitividad]; The Science and Technology Plan [Plan de Ciencia y Tecnología] and The Program of Strategic Use of Media and Information and Communication Technology for Education [Programa Estratégico de Uso de Medios y Tecnologías de la Información y Comunicaciones (MTIC) en la Educación] among others. See Ministerio De Comunicaciones, ‘Plan Nacional De Tecnologías De La Información Y De Las Comunicaciones’ (2008) <www.eduteka.org/pdfdir/ColombiaPlanNacionalTIC.pdf> accessed 8 June 2016 [hereinafter Plan Nacional TIC].

¹⁶ See Ministerio Nacional de Educación, ‘Programa Nacional de Nuevas Tecnologías’ (Colombia Aprende (n.d)) <www.colombiaprende.edu.co/html/home/1592/article-102549.html> accessed 8 June 2016 (describing the goals regarding hardware and connectivity)

¹⁷ See Ministerio de Educación Nacional, *www.colombiaprende.edu.co La Nueva Red del Conocimiento (2004)* 29 ALTABLERO No 29 <www.mineducacion.gov.co/1621/article-87398.html> accessed 8 June 2016.

¹⁸ See Ministerio de Tecnologías de la Información y las Comunicaciones, ‘Informe de Rendición de Cuentas’ (2014) 44 <www.mintic.gov.co/portal/604/articles-4323_recurso_1.pdf> accessed 8 June 2016 (describing the program for training teachers)

¹⁹ See Ministerio de Tecnologías de las Información y las Comunicaciones, ‘Barreras que Impiden la Masificación del Internet’ (Vive Digital Colombia, (n.d)) <www.mintic.gov.co/portal/vivedigital/612/w3-article-1519.html> accessed 8 June 2016 (stating that due to the Colombian reality the Colombian government has scarce resources to invest in infrastructure).

²⁰ See Nancy R. Rueda E., ‘TLC Colombia-Estados Unidos Y Sus Implicaciones En El Turismo’ (2012) XIII ANUARIO TURISMO Y SOCIEDAD 265, 270 <<http://papers.ssrn.com/abstract=2269164>> accessed 1 June 2017 (Stating that an FTA with the US was seemed as a great opportunity for Colombia’s development);

²¹ See Ministerio de Comercio, Industria y Turismo, ‘Acuerdo de Promoción Comercial entre la República de Colombia y Estados Unidos de América’ (Mincit (n.d)) <www.mincit.gov.co/tlc/publicaciones.php?id=14853> accessed 8 June 2016.

²² TRIPS-Plus standards are those standards of protection that either exceed the level of protection incorporated in TRIPS agreements or are not included in TRIPS at all. See Peter Drahos, ‘Bits and Bips Bilateralism in Intellectual Property’ (2001) 4 J. World Intell. Prop. 791,792-3 (explaining the TRIPS-plus concept) see also David Vivas-Eugui, ‘Regional and Bilateral Agreements and TRIPS-Plus World: the Free Trade Area of the Americas (FTAA)’ (TRIPS Issues papers 1, 2003) 4 <www.quono.org/sites/default/files/resources/FTAs-TRIPS-plus-English.pdf> accessed 1 June 2017.

²³ See Peter Drahos, ‘Bits and Bips Bilateralism in Intellectual Property’ (2001) 4 J. World Intell. Prop. 791,792-4 <www.quono.org/sites/default/files/resources/FTAs-TRIPS-plus-English.pdf> accessed 1 June 2017 (explaining that in order to reduce costs of bilatelarism, the United States brings to the negotiation an already prepared text that follows the standards of a model treaty ratified by the Senate)

²⁴ See Jakkrit Kuanpoth, *TRIPS-Plus rules under Free Trade Agreements: An Asian Perspective*, in INTELLECTUAL PROPERTY & FREE TRADE AGREEMENTS (Christopher Heath & Anselm Kamperman Sanders eds., Hart Publishing ed., 2007) 28.

²⁵ See Peter Drahos, ‘Bits and Bips Bilateralism in Intellectual Property’ (2001) 4 J. World Intell. Prop. 791,792-4 <www.quono.org/sites/default/files/resources/FTAs-TRIPS-plus-English.pdf> accessed 1 June 2017 (stating that the U.S has incentives to search for standardization of bilaterals in this way. For example, free trade agreements negotiated with Jordan “will serve as a model for other FTAs being negotiated with Chile and Singapore.”).

their intellectual property goals and end up accepting IPR obligations that may not benefit them.²⁶

In the case of Colombia, its strong desire to enter into a commercial agreement with the United States played a critical role during the negotiations of the IP chapter. Colombia was not happy with the incorporation of IP obligations in the text of an FTA. The obligations regarding patent protection and biodiversity, in particular, were topics of national concern.²⁷ Regardless, the US commission rejected Colombia's proposals on the subject, and consequently, the patent provisions became a hurdle to the successful conclusion of the agreement. Therefore, the Colombian government, in order to close the agreement, decided that the "technical negotiations" were finished and that the "political negotiations" were on to take the final decision.²⁸

The Colombian negotiation commission's discontent with the US proposal was not as strong on the copyright provisions as it was in the case of patents or biodiversity. Few concerns were raised²⁹ and as a consequence, the final text of the USCO incorporated several US-proposed obligations regarding copyright protection in the digital environment.

Therefore, the USCO's copyright provisions, like previous agreements on the subject, are based on the principle of

"national treatment".³⁰ The FTA clarifies that its terms are minimum standards³¹ and apply retroactively.³² As for copyright provisions, the FTA begins by mandating ratification of the Convention Relating to the Distribution of Programmed-Carrying Signals Transmitted by Satellite (1974),³³ the WCT,³⁴ and the WPPT.³⁵ Moreover, the USCO affirms the obligations acquired under the Berne Convention,³⁶ and clarifies that the application of the reproduction right to cover temporary reproductions³⁷ includes the wording of the distribution (without mentioning the right to determine the exhaustion) and public communication rights included in the WCT.³⁸ It also increases the general rule of copyright duration established in Berne to 70 years after an author's death,³⁹ and provides that initial ownership shall vest in the author.⁴⁰

Moreover, the USCO establishes common obligations for copyright and related rights to "ensure that no hierarchy is established between rights of authors, on the one hand, and rights of performers and producer of phonograms on the other hand".⁴¹ It also mandates the application of article 18 of the Berne Convention,⁴² and ratifies the transferability of the economic rights of the author and neighbouring rights.⁴³ Furthermore, it incorporates a system for limiting the liability of Internet service providers.⁴⁴

Regarding technological protection measures, the USCO contains detailed provisions based on the US Digital Millennium Copyright Act (DMCA). Article 16.7.4 requires the trade parties to sanction with criminal penalties and civil remedies the three acts prohibited by the DMCA, which are (1) circumventing access-control measures; (2) anti-trafficking provisions of circumventing devices and services of an access-control measure; and (3) anti-trafficking provisions of circumventing devices and services

²⁶ See Peter K. Yu, 'Currents and Crosscurrents in the International Intellectual Property Regime' (Michigan State University College of Law Research paper No.02-12, 2004) 44-5 <<http://ssrn.com/abstract=578572>> accessed 1 June 2017 (stating that less developed countries do not have bargaining power to negotiate better agreements and end up accepting intellectual property provisions that might not benefit them).

²⁷ See Ministerio de Comercio, Industria y Turismo, 'La Negociación Del TLC de Colombia Con Los Estados Unidos' (n.d) 19-20 www.mincit.gov.co/tlc/publicaciones.php?id=747 accessed 1 June 2017 (follow 1. La Negociación del TLC de Colombia con los Estados Unidos) (stating that biological piracy and access to medicine are sensitive topics for Colombia).

²⁸ See Johanna von Braun, 'La Negociación en Propiedad Intelectual en los Tratados de Libre Comercio de los EE.UU con Colombia y Perú' (ICTSD, 2012) <<http://ictsd.org/i/news/puentes/132572/#sthash.GXvyHtic.dpuf>> accessed 8 June 2016 (describing the position of Colombia's government of finishing "technical negotiation" and starting "political negotiations")

²⁹ See concerns at Dirección Nacional de Derecho de Autor Unidad Administrativa Especial Ministerio Del Interior y de Justicia, 'Informe XIII Ronda de Negociaciones Tratado de Libre Comercio Andinos- Estados Unidos' (2005) <[---

³⁰ See Free Trade Agreement, US- Colom., Nov. 22, 2006, art.16.1.8<\[www.ustr.gov/trade-agreements/free-trade-agreements/colombia-fta/final-text\]\(http://www.ustr.gov/trade-agreements/free-trade-agreements/colombia-fta/final-text\)> accessed 1 June 2017.](http://www.aplicaciones-mcit.gov.co/mcit_tlc/> (typing in the search bar derechos de autor) accessed 7 June 2016</p></div><div data-bbox=)

³¹ Ibid art. 16.1.7.

³² Ibid art. 16.1.11.

³³ Ibid art. 16.1.2(a).

³⁴ Ibid art. 16.1.2(c).

³⁵ Ibid art. 16.1.2(d).

³⁶ Ibid art. 16.5.1.

³⁷ Ibid art. 16.5.2.

³⁸ Ibid art. 16.5.3, 16.5.4.

³⁹ Ibid art. 16.5.5.

⁴⁰ Ibid art. 16.5.6.

⁴¹ Ibid art. 16.7.1.

⁴² Ibid art. 16.7.2.

⁴³ Ibid art. 16.7.3.

⁴⁴ Ibid art. 16.11.29.

of an copy-control measure.⁴⁵ Additionally, the USCO incorporates specific characteristics of the US model, including seven confined exceptions⁴⁶ with instructions about application to the different prohibited acts,⁴⁷ a stand-alone provision,⁴⁸ a no-mandate rule,⁴⁹ and a TPM definition.⁵⁰ The USCO also requires that the parties create a process for additional exceptions to the act of circumvention,⁵¹ as the DMCA requires. The USCO permits the parties to develop this as either an administrative or a legislative procedure.

Thus, the USCO's TPM obligations have become the new international standard on this aspect of technology incorporation for Colombia.

3. COLOMBIA'S ATTEMPTED IMPLEMENTATION OF THE USCO'S TPM PROVISIONS AND ITS IMPACT

Colombia's desire to have an FTA with the United States played a central role⁵² in its fast-track implementation of the copyright provisions⁵³ vide law 1520 de 2012 in order to bring the agreement in force. It did not attempt to rebalance the existing legal framework, which was disrupted as a consequence of the incorporation of new

provisions.⁵⁴ Moreover, Colombia did not focus on establishing a user-friendly implementation of the FTA obligations to continue promoting the use of the technology in education. Instead, the attempted implementation of the TPM obligations followed an FTA-Plus system and a DMCA-plus model which, as explained in the following subsection, can pose problems for its program of incorporation of technology in education.

A. THE ATTEMPTED IMPLEMENTATION

Before law 1520 of 2012, Colombia had a TPM legislation in force. The original legislation on TPM was part of the Criminal Code as a result of the WIPO Copyright Treaty's implementation. Article 272 of the Criminal Code⁵⁵ prohibited both the circumvention of copy-control technological measures⁵⁶ and trafficking on devices to circumvent a copy-control⁵⁷ measure. Violation of these provisions was punishable by fines. However, the law had some deficiencies. For example, neither did it require the TPM to be an "effective" TPM,⁵⁸ nor did it provide a definition for TPM.⁵⁹ It also did not require commercial scale or an intent to profit; and finally, it did not create any exceptions.⁶⁰

The Criminal Code's TPM provisions were modified as a result of the USCO even before the USCO was ratified. After the negotiation stage of the USCO, the Colombian Congress – with the purpose of lobbying in favour of the USCO⁶¹ – amended the TPM provisions by increasing the punishment of both the act of circumvention on copy-control and the act of trafficking on devices to circumvent a copy-control. This fact evidences the commercial desire that motivated the implementation. The new amendment left the substantive text of the previous provision

⁴⁵ Ibid art. 16.7.4(a).

⁴⁶ Ibid art. 16.7.4(e).

⁴⁷ Ibid art. 16.7.4(g).

⁴⁸ Ibid art. 16.7.4(d).

⁴⁹ Ibid art. 16.7.4(c).

⁵⁰ Ibid art. 16.7.4(b).

⁵¹ Ibid art. 16.7.4(f).

⁵² See Carolina Botero Cabrera, 'Ley Lleras 2 es Inconstitucional' (El Espectador, 31 January 2013) <www.elespectador.com/opinion/ley-lleras-2-inconstitucional-columna-402262> accessed 8 June 2016

⁵³ See Camilo Romero, 'Ley Lleras 2.0 en Riesgo los Derechos a la Igualdad, a la Libertad de Expression, y a la Intinidad' (n.d) 2 <www.asleyes.com/descargas/pdf/comentario/ley_lleras.pdf> accessed 8 June 2016 (the Congressman Camilo Romero criticizes the process given to Ley Lleras 2.0 stating that it came to Congress as an urgent matter and the Congress did not make a public debate for the subject). See also Editorial El Espectador, 'Los Problemas de la 'Ley Lleras 2.0'' (El Espectador, 11 April 2012) <www.elespectador.com/opinion/editorial/los-problemas-de-ley-lleras-20-articulo-337685> accessed 8 June 2016 (stating that law 1520 was criticized because of its fast enactment in order to have it as a present for the visit of president Obama); see also Juliana Vargas Prieto, 'Responsabilidad de los Prestadores de Servicio de Almacenamiento de Datos por Infracciones a Derechos de Autor' (2013) 10 Revista de Derecho, Comunicaciones y Nuevas Tecnologías 5, 25 <https://derechoytics.uniandes.edu.co/components/com_revista/archivos/derechoytics/ytics134.pdf> accessed 1 June 2017 (stating that law 1520 was enacted quickly with the purpose of having it ready for the "Summits of the Americas").

⁵⁴ See Text of Ley 1520 de 2012 (incorporating the FTA's obligations regarding TPM; it does not rebalance the current legal framework)

⁵⁵ See Código Penal (Colom.).

⁵⁶ Ibid art. 272(1) (Colom.).

⁵⁷ Ibid art. 273(3) (Colom.).

⁵⁸ Ibid art. 272, 272(1) (Colom.). See also Jhonny Pabón, 'Los Riesgos de la Tecnología. Medidas Tecnológicas de Protección: el Caso de los DVD' (2008) 12 Propiedad Inmaterial, 121, 131 (stating that the Colombian legislation does not require a Technological Protection Measure to be "effective").

⁵⁹ See Jhonny Pabón, 'Medidas Tecnológicas de Protección en el Tratado de Libre Comercio con los Estados Unidos de Norteamérica' (2007) 10-11 Propiedad Inmaterial, 93, 104 (stating that the Colombian legislation does not provide a TPM definition).

⁶⁰ See Código Penal art. 272(Colom.) (see article 272 is not subject to exceptions).

⁶¹ See Ernesto Rengifo, 'Un Nuevo Reto del Derecho en la Edad de la Información' (2008) 12 Propiedad Inmaterial 105, 116 (stating that law 1032 of 2006 that increased the punishment for the circumvention of the technological protection measures was promoted as a lobby for the USCO).

unchanged but increased the punishment against the circumvention of TPM to imprisonment between four and eight years and a fine between 26.66 to 1000 times the minimum wage.⁶² As the substantive part of the law remained unchanged, the provision did not require commercial scale or an intent to profit or private gain and did not establish any limitation and exception despite its severe punishment. This is the law currently in force.

After Colombia ratified the USCO, there was another amendment to the TPM provisions in order to actually implement USCO's obligation in that respect. Law 1520 of 2012 implemented the anti-circumvention measures provisions of the USCO in addition to other copyright provisions. As mentioned above, the attempted implementation did not seek to re-balance the existing copyright law. Additionally, the implementation went beyond the minimum obligations incorporated in the USCO generating an FTA-Plus regime and a DMCA-Plus model.

Law 1520 practically added the text of the USCO to the existing TPM provisions. Article 14 established civil liability for the circumvention of a technological protection measure.⁶³ This was a new aspect to Colombian law because the previous regulation on the subject established only criminal sanctions. This article prohibited four acts: (1) the trafficking on devices and services to circumvent a copy-control measure; (2) the trafficking on devices and services to circumvent an access-control measure⁶⁴ (3) the circumvention of an access-control measure, as the USCO required; and (4) the circumvention of a copy-control measure, as the previous law stated.⁶⁵ Finally, the law clarified that the civil liability for circumventing a technological protection measure is a standalone provision.⁶⁶ This type of implementation outlawing four acts, went beyond the minimum requirements of USCO, which required only sanction for circumventing an access-control measure⁶⁷ and trafficking on devices of both type

of measures. Also, it went beyond the DMCA model, which outlaws only the circumvention of an access-control measure.⁶⁸

In Article 15, law 1520 implemented the exceptions to the act of circumventing an access-control measure by closely following the text of the USCO. The text of the law confined these exceptions to the seven exceptions allowed by the treaty.⁶⁹ No exception was created for circumvention of a copy-control measure. In deciding whether to provide a legislative or administrative procedure to create additional exceptions, Colombia created a legislative procedure and put the Government in charge of determining the need to present a bill of law to the Congress to deliberate the enactment of further exceptions.⁷⁰ Finally, the law established a no-mandate rule,⁷¹ as the USCO provided.

This type of implementation neither provided a user-friendly implementation of USCO, nor took advantage of the flexibilities of the treaty. For example, providing a legislative procedure for the creation of new exceptions to circumvent an access control measure may be too long and cumbersome to meet the needs of technology users. Moreover, failing to create exceptions to the circumvention of a copy-control measure goes beyond the treaty obligations, which are silent about protection against the circumvention of a copy-control TPM in the first place. Additionally, this type of implementation provides a model more restrictive than that set out in the DMCA, which involves an administrative procedure that kicks in every 3 years.⁷²

As for criminal liability, Article 17 closely followed the wording of Article 14 imposing civil liability but is not a standalone provision. The Colombian Congress exercised the ability granted by the USCO to establish either civil or criminal provisions as a standalone measure.⁷³ The criminal prohibition also sanctioned four circumventing acts,⁷⁴ although in some aspects it narrowed the scope of the previous criminal legislation. *Firstly*, the law sanctioned only the acts that were not authorized by the copyright holder or the law. Therefore, it sets some limits to the anti-circumvention provisions.⁷⁵ *Secondly*, the law

⁶² See Ley 1032 de 2006, junio 22, 2006 DIARIO OFICIAL [D.O] art. 3. (Colom.).

⁶³ See Ley 1520 de 2012 art. 14 (Colom.).

⁶⁴ Ibid art. 14(b) in connection with the definition of technological protection measure established in article 2.

⁶⁵ Ibid Art. 14(a).

⁶⁶ The USCO allowed the possibility of making the protection against circumvention either a civil or criminal standalone provision. Ley 1520 de 2012 seems to choose the first possibility. Article 14 of Ley 1512 de 2012 expressly established the standalone nature of the civil remedies against the circumvention of a TPM. Article 17 of Ley 1520 de 2012, regarding the criminal penalties, does not expressly state it.

⁶⁷ See Free Trade Agreement, US- Colom., Nov. 22, 2006, 16.7.4(a) <www.ustr.gov/trade-agreements/free-trade-agreements/colombia-fta/final-text> accessed 1 June 2017.

⁶⁸ See 17 USC §1201(a)(1)(A).

⁶⁹ See L. 1520 de 2012 art. 15.

⁷⁰ Ibid art. Art. 15(g) paragrafo.

⁷¹ Ibid art. 14 paragrafo.

⁷² See 17 USC § 1201 (a)(1)(C).

⁷³ See Free Trade Agreement, US- Colom., Nov. 22, 2006, 16.7.4(d) <www.ustr.gov/trade-agreements/free-trade-agreements/colombia-fta/final-text> accessed 1 June 2017 (stating that the standalone provision can be either civil or criminal).

⁷⁴ See Ley 1520 de 2012 art. 17(1)-(2).

⁷⁵ Ibid art. 17.

requires the purpose of commercial advantage or private financial gain in order to be a punishable act. *Thirdly*, it exempted from criminal liability non-profit libraries, archives, educational institutions, and public non-commercial broadcasting entities,⁷⁶ as the USCO requires.⁷⁷

Therefore, although the scope of implementation of criminal liability was narrower than that in the previous legislation, the implementation provided an FTA-plus and DMCA-plus model, thereby creating a more restrictive regime. Like civil liability, law 1520 outlawed more acts of circumvention and further restricted the availability of exceptions.

B. THE EFFECTS OF THE ATTEMPTED IMPLEMENTATION ON A TRANSFORMED LEARNING PROCESS

TPM regulation enacted under law 1520 created a more restrictive regime than the one required by USCO and the DMCA. This new regulatory scenario creates barriers for a country attempting to use ICT in education to solve salient problems of its system and bring about social inclusion.⁷⁸

The implementation did not provide a more user-friendly implementation to promote the use of ICT in education and may end up creating difficulties for the actual transformation of the learning process with the use of technology.

This legislation can make it difficult to engage in the new types of methodologies and activities needed for a transformed learning process in several ways. *Firstly*, legislation that outlaws circumvention of both copy and access-control measures does not allow users to engage in permitted uses. For example, a Colombian professor would not be allowed to circumvent a copy-control TPM in order to make a quotation. However, an American professor would be allowed to circumvent such TPM if he were technologically knowledgeable. This is especially true when the protection of copy-control measures is not subject to exceptions and the exceptions that do exist to circumvent access control measures are narrow, as in Colombia's attempted regulation. Engaging in permitted uses is what allows and promotes collaborative activities and learning communities where every participant of the process should be able to bring resources and information for knowledge creation.⁷⁹ Such activity is hindered when permitted uses are restricted by legislation.

Secondly, narrowing exceptions to the act of circumventing an access-control measure may leave important non-infringing uses for a transformed learning process behind, as happened in the United States. For

example, a model of always-on learning⁸⁰ cannot be adopted where data synchronization, a process where two different data storage devices can have the same information at a given time, can be inhibited by TPM and the law does not provide a solution.

TPM can prevent the synchronization of information such as that available from research articles, pictures, or songs with different devices, even if legal access to the work has been acquired or the work is in the public domain.⁸¹ In the United States, copyright holders have used TPM protection not only to prevent access or exercise an exclusive right but also to attach the content to a specific device or software.⁸² For example, software programs such as Adobe digital editions,⁸³ only allow the sharing of content between two devices if certain conditions are met, such as when both devices have been activated with the same ID.

Such a situation has arisen in the United States because access-TPMs are protected and subject to very narrow exceptions. For example, the reverse engineering exception covers only program-to-program interoperability,⁸⁴ leaving outside its scope program-to-data interoperability as software to content. This situation may well be replicated under the Colombian legislation, which, as mentioned above, did not provide a more user-friendly implementation than the DMCA.

Thirdly, the creation of learning communities can be affected especially on the subject of encryption research, where researchers may be afraid to share their results online due to the narrow scope of the encryption research exception. This has already become a problem in the US. In one case, the Dutch cryptographer Neils Ferguson identified some flaws in Intel's HDCP video encryption system.⁸⁵ Instead of sharing this information, Ferguson chose to self-censor and did not upload his findings on his

⁸⁰ See *supra* for explanation about a model of always-on learning.

⁸¹ See *infra*.

⁸² See Gwen Hinze, Brave New World, 'Ten Years Later: Reviewing The Impact of Policy Choices in The Implementation of the WIPO Internet Treaties' Technological Protection Measures Provisions' (2006-2007) 57 Case W. Res. L. Rev. 779, 800 (stating that, in practice, TPM restrict uses of e-books such the number of copies and the ability to print. Also, TPM can determine the device where the e-book will be read)

⁸³ See Adobe e-book Platform, 'Adobe Digital Editions/FAQ,Content Portability' (Adobe, (n.d)) <<http://www.adobe.com/mx/products/digital-editions/faq.html>> accessed 1 June 2017("6. If the permission limits the books to be viewed on only one device, the copied books will not be able to be opened").

⁸⁴ See 17 USC § 1201 (f).

⁸⁵ See Electronic Frontier Foundation, 'Unintended Consequences: Fifteen Years under the DMCA' (EFF, 2013) <www.eff.org/pages/unintended-consequences-fifteen-years-under-dmca> accessed 8 June 2016.

⁷⁶ *Ibid* art. 17 paragraph.

⁷⁷ *Ibid* 16.7.4.

⁷⁸ See *supra* for the purposes of incorporating technology in education.

⁷⁹ See *supra* for explanation for collaborative activities.

website. His stated reason for this self-censoring was his fear of prosecution under the DMCA anti-circumvention provisions in one of his trips to the United States.⁸⁶ The situation could be worse in Colombia, where the encryption research exception is as narrow as in the United States, but criminal sanctions are higher.

Thus, the attempted regulatory scenario may set back all the investment and efforts that the Colombian government is putting in to develop its policy of ICT in education. Fortunately, the Constitutional Court struck down this law, which means that Colombia still has the opportunity to attempt a better approach to implementation. Unfortunately, its second attempt at implementation (the bill was eventually tabled) sought to present the same type of legislation.⁸⁷ This situation thus merits the need for greater discussion about the consequences of such legislation for Colombia's ICT policy with regard to education.

4. SOLUTIONS

Any new implementation of the law needs to take into account, promote, and allow the use of technology in education. These goals are particularly important for the implementation of a policy crucial for the betterment of Colombian society.

In order to achieve this, some key points must be kept in mind. *Firstly*, there is a need to stay within the minimum requirements of the USCO which are already characterized as a TRIPS-plus standard. *Secondly*, Colombia needs to take advantage of USCO's flexibilities to achieve a more user-friendly implementation of the treaty. For instance, in the choice between a legislative or administrative procedure for creating new exceptions to the circumvention of an access control measure, Colombia should select an administrative procedure. A legislative procedure is more likely to be affected by time or political decisions. Finally, it must be understood that the USCO is not a statutory text but an international treaty that needs to be adapted to local needs. Colombia must therefore carry out implementation according to its desired policy of assimilating technology in education.

The text of the treaty is flexible enough to achieve a different implementation. In order to do so, Colombia could take advantage of other countries' experiences in implementing their US FTAs. For instance, Australia narrowed down the definition of TPM to link the use of such measures to the exercise of copyright.⁸⁸ In addition,

Australia also limited the terms "importation" and "manufacturing" to allow private importation and manufacturing to limit the scope of the anti-trafficking provision.⁸⁹ It also provided for action against groundless threats of TPM procedure⁹⁰ to avoid censoring researchers, as often happens in the case of encryption research.

Finally, Colombia should establish a procedure that controls the effects of TPM on permitted uses. This procedure could be similar to other consumer rights procedures or the TPM complaints process from the United Kingdom. It can, for example, establish a procedure allowing the user who owns a legal copy of a TPM-protected work to contact the copyright holder when TPM protection is not allowing him or her to engage in a permitted use. In case the user does not get a prompt resolution, the system should provide an action against the copyright holder that could result in the imposition of a fine. Such solutions could help users, and especially the academic community, in continuing to enjoy permitted use and engage in new methods.

5. CONCLUSION

Technology opens up a broad set of possibilities when it is incorporated in education. This incorporation creates the possibility to not just broaden access to educational resources but also to engage in new types of methodologies directed at new learners. Moreover, technology provides tools for developing countries such as Colombia to overcome social disparities and educational crises. Therefore, Colombia is looking to develop different public policies and plans on the subject and has invested a large amount of money for this purpose.

On the other hand, Colombia is bound by the provisions of the USCO. USCO's TPM obligations need to be carefully implemented otherwise they can hinder the engagement and development of new methods, even if there is no copyright infringement. So far, however, Colombia has not attempted a flexible and user-friendly implementation of those obligations during its different attempts at implementation. Instead, the attempted implementation of TPM obligations has gone beyond the obligations of these bilateral agreements and established a more restrictive model that will create barriers for incorporating the use of technology in education. This approach has potentially harmful social consequences for Colombia due to the important objectives of these policies. However, with the Colombian Constitutional Court striking down the earlier legislation, there is still an opportunity for Colombia

⁸⁶ Ibid.

⁸⁷ See B.L Cámara 306 de 2013, mayo 15, 2013 <www.imprenta.gov.co/gacetap/gaceta.mostrar_documento?p_tipo=05&p_numero=306&p_consec=36125> accessed 1 June 2017.

⁸⁸ See Copyright Amendment Bill 2006. Explanatory Memorandum Sch 12 Item 1 Subsec. 10(1) 12.6 explaining subparagraph (a)(ii)

(Austl.)

www.austlii.edu.au/au/legis/cth/bill_em/cab2006223/memo_0.html accessed 1 June 2017.

⁸⁹ Ibid Sch 12 Item 9 Subsec. A 12.64.

⁹⁰ See *Copyright Act 1968* 202A (1) (Austl.)

to adopt a more user-friendly implementation of its TPM obligations which could facilitate its ICT-education policy.

BIBLIOGRAPHY

Adobe e-book Platform, 'Adobe Digital Editions/FAQ, Content Portability' (Adobe, (n.d)) www.adobe.com/solutions/ebook/digital-editions/faq.html

Armatas SA, *Distance Learning and Copyright: a Guide to Legal Issues* (1st ed., American Bar Association, 2008)

Botero Cabrera C, 'Ley Lleras 2 es Inconstitucional' (El Espectador, 31 January 2013) <www.elespectador.com/opinion/ley-lleras-2-inconstitucional-columna-402262> accessed 8 June 2016

Corte Constitucional de Colombia [C.C.] [Constitutional Court], enero 23, 2013, M.P A. J.Estrada, Sentencia C-011/13 (Colom.)

Dirección Nacional de Derecho de Autor Unidad Administrativa Especial Ministerio Del Interior y de Justicia, 'Informe XIII Ronda de Negociaciones Tratado de Libre Comercio Andinos- Estados Unidos' (2005) <http://www.aplicaciones-mcit.gov.co/mcit_tlc/>

Drahos P, 'Bits and Bips Bilateralism in Intellectual Property' (2001) 4 J. World Intell. Prop. 791

Editorial El Espectador, 'Los Problemas de la 'Ley Lleras 2.0'' (El Espectador, 11 April 2012) www.elespectador.com/opinion/editorial/los-problemas-de-ley-lleras-20-articulo-337685

Electronic Frontier Foundation, 'Unintended Consequences: Fifteen Years under the DMCA' (EFF, 2013) < www.eff.org/pages/unintended-consequences-fifteen-years-under-dmca>

Fisher W. et all., 'The Digital Learning Challenge: Obstacles to Educational Uses of Copyrighted Material in the Digital Age. A Foundational White Paper.' (2006) <<http://cyber.law.harvard.edu/media/files/copyrightandeducation.html#TOC>>

Free Trade Agreement, US- Australia, May. 18, 2004, 43 ILM 1248 <www.ustr.gov/trade-agreements/free-trade-agreements/australian-fta>

Free Trade Agreement, US- Colom., Nov. 22, 2006 <www.ustr.gov/trade-agreements/free-trade-agreements/colombia-fta/final-text>

Free Trade Agreement, US-CAFTA-DR, Aug. 5, 2004 <<http://www.ustr.gov/trade-agreements/free-trade-agreements/cafta-dr-dominican-republic-central-america-fta>>

Hinze G, 'Brave New World, Ten Years Later: Reviewing The Impact of Policy Choices in The Implementation of the WIPO Internet Treaties' Technological Protection

Measures Provisions' (2006-2007) 57 Case W. Res. L. Rev. 779

Jonathan Anderson, *ICT Transforming Education: a Regional Guide* (2010) 72 <<http://unesdoc.unesco.org/images/0018/001892/189216e.pdf>>

Kalaš I et al., 'ICT in Primary Education' (UNESCO, 2012) <<http://iite.unesco.org/pics/publications/en/files/3214707.pdf>>

Kozma R & Shafika I, *Transforming Education: The Power of ICT Policies*, (UNESCO, 2011) <<http://unesdoc.unesco.org/images/0021/002118/211842e.pdf>>

Kuanpoth J, *TRIPS-Plus rules under Free trade Agreements: An Asian Perspective*, in Intellectual property & free trade agreements (Christopher Heath & Anselm Kamperman Sanders eds., Hart Publishing ed., 2007)

Leal Fonseca DE, 'Iniciativa Colombiana de Objetos de Aprendizaje: Situación Actual y Potencial para el Futuro'(2008) 8(8) Apertura 76, <www.redalyc.org/pdf/688/68811215006.pdf>

Ley 1032 de 2006, junio 22, 2006 Diario Oficial [D.O]

Ley 1520 de 2012

Ministerio de Comercio, Industria y Turismo, 'Acuerdo de Promoción Comercial entre la República de Colombia y Estados Unidos de América' (Mincit (n.d)) www.mincit.gov.co/tlc/publicaciones.php?id=14853

Ministerio de Comercio, Industria y Turismo, 'La Negociación Del TLC de Colombia Con Los Estados Unidos' (n.d) www.mincit.gov.co/tlc/publicaciones.php?id=747

Ministerio De Comunicaciones, 'Plan Nacional De Tecnologías De La Información Y De Las Comunicaciones' (2008) <<http://www.eduteka.org/pdfdir/ColombiaPlanNacionalTI.C.pdf>>

Ministerio de Educación Nacional, www.colombiaaprende.edu.co La Nueva Red del Conocimiento (2004)29 Altablero No 29 <<http://www.mineducacion.gov.co/1621/article-87398.html>>

Ministerio de Tecnologías de la Información y las Comunicaciones, 'Informe de Rendición de Cuentas' (2014) < http://www.mintic.gov.co/portal/604/articulos-4323_recurso_1.pdf>

Ministerio de Tecnologías de las Información y las Comunicaciones, 'Barreras que Impiden la Masificación del Internet' (Vive Digital Colombia, (n.d))<<http://www.mintic.gov.co/portal/vivedigital/612/w3-article-1519.html>>

Ministerio Nacional de Educación, 'Programa Nacional de Nuevas Tecnologías' (Colombia Aprende (n.d))<<http://www.colombiaaprende.edu.co/html/home/1592/article-102549.html>>

Pabón J, 'Los Riesgos de la Tecnología. Medidas Tecnológicas de Protección: el Caso de los DVD' (2008) 12 *Propiedad Inmaterial*, 121

Pabón J, 'Medidas Tecnológicas de Protección en el Tratado de Libre Comercio con los Estados Unidos de Norteamérica' (2007) 10-11 *Propiedad Inmaterial*, 93

Palacio Puerta M, *Derechos de Autor, Tecnología y Educación para el Siglo XXI: El tratado de Libre Comercio entre Colombia y Estados Unidos* (forthcoming)

Rengifo E, 'Un Nuevo Reto del Derecho en la Edad de la Información' (2008) 12 *Propiedad Inmaterial* 105<<http://revistas.uexternado.edu.co/index.php?journal=propin&page=article&op=view&path%5B%5D=626>>

Romero A, 'Colombia-USA Free Trade Agreement' (2006) VII (2) *Tendencias* 29 <<http://papers.ssrn.com/abstract=957133>>

Romero C, 'Ley Lleras 2.0 en Riesgo los Derechos a la Igualdad, a la Libertad de Expression, y a la Intinidad' (n.d) <www.asleyes.com/descargas/pdf/comentario/ley_lleras.pdf>

Rossini C, 'Green-Paper: The State and Challenges of OER in Brazil: From Readers to Writers?' (Berkerman Research Publication No 2010-01, 2010)

Rueda NR, 'TLC Colombia-Estados Unidos Y Sus Implicaciones En El Turismo' (2012) XIII *Anuario Turismo y Sociedad* 265, 270 <<http://papers.ssrn.com/abstract=2269164>>

Silva LC, 'El Proceso de Negociación del TLC Colombia-Estados Unidos' (2007) 65 *Colombia Internacional* 112<<http://dialnet.unirioja.es/servlet/articulo?codigo=2345401>>

UNESCO, *Technologies for Education* (Wadi D. Haddad & Alexandra Draxler ed., 2002) <<http://unesdoc.unesco.org/images/0011/001191/119129e.pdf>>

UNESCO, 'Open and distance learning: trends, policy and strategy considerations' (2002) <<http://unesdoc.unesco.org/images/0012/001284/128463e.pdf>> accessed 7 June 2016

Vargas Prieto J, 'Responsabilidad de los Prestadores de Servicio de Almacenamiento de Datos por Infracciones a Derechos de Autor' (2013) 10 *Revista de Derecho, Comunicaciones y Nuevas Tecnologías* 5, <https://derechoytics.uniandes.edu.co/components/com_revista/archivos/derechoytics/ytics134.pdf>

Vivas-Eugui D, 'Regional and Bilateral Agreements and TRIPS-Plus World: the Free Trade Area of the Americas (FTAA)' (TRIPS Issues papers 1, 2003) <www.quno.org/sites/default/files/resources/FTAs-TRIPS-plus-English.pdf>

Von Braun J, 'La Negociación en Propiedad Intelectual en los Tratados de Libre Comercio de los EE.UU con Colombia y Perú' (ICTSD, 2012) <<http://ictsd.org/i/news/puentes/132572/#sthash.GXvyHtic.dpuf>>

Yu PK, 'Currents and Crosscurrents in the International Intellectual Property Regime' (Michigan State University College of Law Research paper No.02-12, 2004) 44-5 <<http://ssrn.com/abstract=578572>>