Submission to the Standing Committee on Industry, Science, and Technology on the 2018 Statutory Review of the Copyright Act

About Dessa

Founded in 2016, Dessa is a Canadian-based start-up transforming enterprises around the world with Artificial Intelligence (AI) technology. At Dessa, we empower enterprises of all sizes across industries to become owners, builders, and users of AI. Our mission is to transform AI into an industrial technology and catalyze its integration into the foundation of our society.

Since its inception, Dessa has delivered significant impact to Canadian businesses, communities, and the technology ecosystem. Since deploying the first deep learning system in Canadian banking in 2016, Dessa's portfolio of AI-powered solutions now serves over 20% of the Canadian population and over 20 million consumers worldwide. With a growing network of partners in the private and public sector, we continue to push the boundaries of what's possible by fostering an environment for the responsible and ethical use of AI in ways that benefit businesses and the general society.

Dessa is uniquely positioned to help this Committee investigate, refine, and establish a coherent framework to safeguard copyright protection, while ensuring AI remains accessible, adopted, and applied to its full potential.

Framework of Submission

Copyright laws were originally enacted to encourage learning.[1] Machine learning (ML) and AI now augment human learning. As such, this submission asks the following questions and suggests the following answers:

Should AI be permitted to use copyrighted works?
- ❖ Yes. AI should be permitted to use copyrighted works for the purposes of training.

Who owns the copyright in what AI produces?
- ❖ Users of AI will typically be authors of the works outputted by such systems.

Two policy positions inform these submissions: (1) Canada is committed to AI; and (2) technological neutrality is a fundamental principle of copyright law.

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[1] In 1710, the British Parliament passed the Statute of Anne (*Copyright Act* 1709 8 Anne c.21), the first statutory copyright protection. The full title of the act was: An Act for the *Encouragement of Learning*, by vesting the Copies of Printed Books in the Authors or purchasers of such Copies, during the Times therein mentioned. (emphasis added)

(1) Canada is Committed to AI

Dessa's vitality is reflective of the broader health of Canada's AI sector. The Government's continued effort to develop the AI sector is demonstrated by its $125 million Pan-Canadian Artificial Intelligence Strategy[2] and the $950 million it has invested in innovation superclusters.[3]

To continue achieving results, Canada's AI sector requires access to: 1) large quantities of high-quality data, and 2) confident, affordable capital markets. Both requirements are facilitated by a copyright environment that provides legal certainty, that appropriately balances the rights of copyright users and owners, and that recognizes the benefits of AI. The recommendations of this submission advance the Government's goals to foster innovation and intellectual property, and to position Canada as a global leader in AI.[4]

(2) Technological Neutrality is a Fundamental Principle of Copyright Law

New technologies, like ML and AI, are transforming how creative works are produced, reproduced and distributed. Some of these technologies provide more efficient ways for authors to create. Some of these technologies make culture more widely available to users.

Copyright should not impose burdensome costs on these efficiencies – either for authors or for users.[5] The benefits created through new technology should not accrue only to the copyright owner, but also to the users of copyrighted works.

Whatever reforms are made as a result of this consultation process, "technological neutrality" (as lauded in the previous amendment to the *Copyright Act*[6] and as affirmed by the Supreme Court of Canada[7]) should remain a foundational principle.

Technological neutrality focuses on external outcomes rather than internal processes.[8] It aims to advance the objectives of the copyright system – which are to balance access to and reward for original works[9] – across technologies and over time.

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[2] "Pan-Canadian Artificial Intelligence Strategy". *CIFAR*, 2018, https://www.cifar.ca/ai/pan-canadian-artificial-intelligence-strategy. Accessed 10 Dec 2018.

[3] For example, the Government of Canada has begun to deploy AI to Canadian agriculture via the Protein Industries Supercluster in the Prairies; see: http://www.ic.gc.ca/eic/site/093.nsf/eng/00012.html. Further examples include the Digital Technology Supercluster and AI-Powered Supply Chains Supercluster.

[4] See, e.g., the *Copyright Modernization Act* (S.C. 2012, c. 20) Preamble: "[…] And whereas Canada's ability to participate in a knowledge economy driven by innovation ...".

[5] *Entertainment Software Association v. Society of Composers, Authors and Music Publishers of Canada*, 2012 SCC 34 at para 9.

[6] The summary of the *Copyright Modernization Act*, *supra* note 4 reads: "This enactment amends the *Copyright Act* to […] (*g*) ensure that it remains technologically neutral."

[7] See, e.g., *supra* note 5 and *Society of Composers, Authors & Music Publishers of Canada v. Bell Canada*, 2012 SCC 36 at para 4.

[8] The *Copyright Modernization Act*, *supra* note 4, acknowledged this focus in its enactment of s. 30.71, which allows the creation of temporary copies as a result of technological processes, so long as the end use is non-infringing, and the copy forms an essential part of that technological process; and 30.8, which allows for a programming undertaking to fix or reproduce certain performances and works in accordance with that section.

[9] See, e.g., the Preamble to the *Copyright Modernization Act*, *supra* note 4: "Whereas the exclusive rights in the *Copyright Act* provide rights holders with recognition, remuneration and the ability to assert their rights, and some limitations on those rights exist to further enhance users' access to copyright works or

Question One – Should AI be permitted to use copyrighted works?

Like humans, machines learn by reading, viewing, or listening to works and other data. Machines create mathematical models of this input data. The useful component of any AI system is this model. The more data that the AI system ingests and the smarter it becomes, the more it can assist humans in our search for and access to knowledge: a fundamental purpose of copyright.[10]

When AI 'uses' works in this input stage, it seeks to learn about the rules and abstractions contained within those works, which are not covered by copyright.[11] This process, called <u>training</u>, consists of iteratively refining the AI's model to better capture the abstractions contained within the input data.

In most situations, AI only reads the data and performs calculations on the works; it does not permanently store the works. Although a work may be reproduced and temporarily stored during training, this reproduction is incidental to the actual activity of the system, which is to <u>learn</u> from inputs.

For this reason, we propose that the *Copyright Act* be amended to acknowledge that it is not an infringement of copyright to reproduce works for the purposes of AI <u>training</u>.[12] This amendment may be effected by amending the provision regarding temporary reproductions for technological processes.[13]

Alternatively or in addition, amendments should acknowledge that AI training is valuable by way of a new fair dealing exception for AI.[14]

In a minority of cases, an AI system is explicitly designed to reproduce works.[15] Such a system might, for example, ingest works and train on them, and <u>also</u> store those works for later reproduction. Just as a user may use AI to author works (see below), they would be responsible for using AI to intentionally copy.

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other subject-matter"; see also *Théberge v. Galerie d'Art du Petit Champlain Inc*, 2002 SCC 34 at para 30.

[10] *Ibid.*

[11] This is a fundamental tenet of copyright. An explicit statement of this is on the "About copyright" webpage of Innovation, Science and Economic Development Canada; see: https://www.ic.gc.ca/eic/site/icgc.nsf/eng/07415.html#p1.

[12] Alternatively, if licenses are required, a copyright collective society would be ill-suited to administer licenses for ML/AI. AI and ML use a variety of data, only a subset of which are subject to copyright, which fall within different categories of works (literary, dramatic, musical, etc.).

[13] *Copyright Act*, R.S.C., 1985, c. C-42 at s. 37.20.

[14] ElementAI, Microsoft, and the BSA have proposed similar amendments.

[15] For example, such an AI might be one that ingests literary works, and is designed to reproduce a copy (approximate or otherwise) of a particular such work in a given situation. The output copy is analogous to a JPEG compressed file version of an image that is the subject of copyright: although the JPEG is different from the original work (since it would contain mirror artifacts and would have less information than the original work), it would likely be a reproduction of a substantial part of the work.

Question Two – Who owns the copyright in what AI produces?

A denial of copyright protection to works created in tandem with AI would produce a chilling effect on investment and advancement in the nascent Canadian AI sector.

The *Copyright Act* provides that the author of a work shall be the first owner of the copyright therein.[16] Others in this consultation have submitted that "works created exclusively by artificial intelligence or fully computer-generated should not be eligible for copyright protection."[17] We agree. However, we caution against a presumption that works generated by systems employing AI are created exclusively by AI.

Today, many valuable copyrightable works are created using digital tools and technologies.[18] AI can be designed to create new works based on their training.[19] Human skill and judgment are almost always required to direct such systems, to pose the correct questions, and to steer the systems to produce useful answers.[20] In this way, the users of AI systems are like film directors and producers; they exercise skill and judgment to oversee the overall effort resulting in the copyrightable subject matter.[21] These are acts of authorship.

To the extent that an explicit clarification to this end is required, either within the *Copyright Act* or in a statement of legislative intent in not reforming its provisions, we urge that such clarification be made.

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[16] *Copyright Act*, *supra* note 13 at s. 13(1).

[17] Myra Tawfik et al., "Brief – Statutory Review of the *Copyright Act* submitted by Myra Tawfik on behalf of Canadian intellectual property law scholars" (October 22, 2018), submitted to the Standing Committee on Industry, Science and Technology.

[18] For example, digital cameras embedded in smartphones can automatically adjust parameters such as focus, aperture, shutter speed, stabilization, noise, white balance, depth of field, and even the precise moment of the photograph (i.e. to avoid a blinking subject). These were all once solely the purview of the human photographer. But few would argue that the human director of such digital efforts should be denied copyright protection.

[19] An example of such a system might be a model that ingests images of celebrity faces and produces new images of non-existent celebrity faces.

[20] In *CCH Canadian Ltd. v. Law Society of Upper Canada*, 2004 SCC 13, the Supreme Court of Canada defined "skill" to mean the use of one's knowledge, developed aptitude or practised ability in producing the work, and "judgment" to mean "the use of one's capacity for discernment or ability to form an opinion or evaluation by comparing different possible options in producing the work." A user of Dessa software applies their knowledge, aptitude, and judgment in crafting the eventual, valuable computer-generated outputs of the system.

[21] Canadian law is limited on the subject. But in the U.K., directors and producers are typically joint authors and first owners of copyright in a film. See Intellectual Property Office, *Ownership of copyright works.* (2018). GOV.UK. Retrieved 8 December 2018, from https://www.gov.uk/guidance/ownership-of-copyright-works. This is consistent with U.S. jurisprudence finding producers (and sometimes directors) to be the first owner of copyright in a film. *16 Casa Duse, LLC v. Merkin*, 791 F.3d 247 (2d Cir. 2015).