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Jake Ewerdt  
Director for Innovation and Intellectual Property  
Office of the United States Trade Representative  
600 17th Street, NW  
Washington, DC 20508

Dear Mr. Ewerdt,

BSA | The Software Alliance<sup>1</sup> provides the following information in response to the notice published by the Office of the US Trade Representative (USTR) seeking comments on the 2021 Special 301 review under Section 182 of the Trade Act of 1974 (Special 301).<sup>2</sup>

BSA members rely heavily on access to US trading partners' markets and the adequate and effective protection and enforcement of patents, copyrights, and trade secrets within the context of intellectual property (IP) legal frameworks abroad. BSA members also depend upon cross-border data transfers and work across global IT networks to invest in research and development (R&D) at home, acquire and enforce IP rights, and to realize a return on those investments in R&D and IP. Inadequate IP protection and enforcement abroad are a challenge, as are market access barriers that unreasonably restrict BSA members from transferring their IP, innovations, or other data across borders. BSA members also face significant challenges due to the availability and extensive use of unlicensed software products, especially unlicensed use of software products or services by governments, state-owned enterprises (SOEs), and business entities.

Many creative, technological, and scientific endeavors in today's digitized economy are cross-border in nature. Focused attention is required not only on standards of IP protection and enforcement abroad, but also on the market access barriers that impact US persons who rely on IP. For example, artificial intelligence (AI) involves the application of analytical techniques to data generated in various countries, transferred across borders, and consolidated into larger data sets. AI helped fast-track the COVID-19 vaccine, cutting timelines from years to months, as researchers analyzed drug discovery data transferred from around the world to quickly identify potential drug candidates.<sup>3</sup> Market access barriers that impede data transfers make such AI-based analysis much more difficult, if not impossible, as they prevent the consolidation of representative data sets necessary to conduct AI innovation. In this way, these trade barriers directly impede new innovations and creations that could advance human health and welfare.

Innovation- and data-related market access barriers also threaten other IP priorities – from engaging in cross-border R&D, to protecting brands, to investigating IP infringement, to conducting comprehensive prior art searches. Likewise, with so many patented or copyrighted innovations functionally dependent upon satellite or other cross-border data communications (e.g., IoT software applications in the aerospace, automotive, and agricultural machinery sectors; music and video streaming services that disseminate licensed US film or music content), the cross-border data transfer restrictions that US trading

partners impose can make it difficult, if not impossible, for US innovators and creators to sell or provide support to their IP-protected products or in foreign markets – interfering with their ability to enjoy the benefits of their IP rights abroad. In each of the foregoing examples (and many others), data-related barriers to innovation and trade harm US IP rightsholders in respect of the availability, acquisition, scope, maintenance and enforcement, and enjoyment of IP rights.

Maintaining US technology leadership is a critical goal. President Biden has promised \$300 billion in innovation funding over the next four years,<sup>4</sup> and USPTO Director Andrei Iancu has stated that,

“The United States [must] maintain... its leadership in innovation, especially in emerging technologies such as artificial intelligence (AI).”<sup>5</sup>

This goal is a national imperative. But it will not be possible to meet it without sustained attention to the growing threat that data-related barriers to innovation and trade pose to the United States and to US persons who rely on IP.

BSA supports USTR’s continued efforts to attend to the growing threat to US trade and IP priorities presented by inadequate IP protection and enforcement abroad, as well as unfair market access barriers that harm US persons who rely on IP. We look forward to your questions and comments.

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## A. Introduction

BSA is the leading advocate for the global software industry before governments and in the international marketplace. Its members are among the world’s most innovative companies, creating software solutions that spark the economy and improve modern life. With headquarters in Washington, DC, and operations in more than 30 countries, BSA pioneers IP compliance programs that promote legal software use and advocates for public policies that foster technology innovation and drive growth in the digital economy.

BSA members, comprising leading software publishers, invest heavily in creativity, innovation, technology development, and IP generation. Annual US software industry R&D investments exceed US\$80 billion,<sup>6</sup> and BSA members are counted among: (a) leading US patent recipients (accounting for roughly 75% of all US patents issued to US companies among the top 10 patent grantees)<sup>7</sup>; (b) leading US AI-related patent owners (accounting for 70% of AI-related patents owned by top 10 US companies)<sup>8</sup>; and (c) leading US copyright and trademark holders (accounting for 40% of brand value among US companies in the top 10 ranked brands).<sup>9</sup>

BSA also invests in IP enforcement to address the global problem of unlicensed and counterfeit software. Malware from unlicensed software costs companies nearly \$359 billion per year.<sup>10</sup> We partner with key stakeholders around the world to raise awareness of the risk of malware, ransomware, and other critical security threats and drive license compliance through sound IT procurement. BSA handles over 4,000 enforcement actions per year and has removed nearly 1 million infringing host-site links and over 200,000 marketplace listings.<sup>11</sup>

## B. Software, Innovation, and Intellectual Property — Statistical Overview

Over the past decade, the US software industry has become a primary driver of the global economy. As illustrated below, the US software industry has helped build stability and resilience into the US economy at a time of unprecedented economic uncertainty:

- Software drives growth: As of 2019, the US software industry (including US software exports) were responsible for \$1.6 trillion of total US value added GDP and 14.4 million jobs — jobs that pay more than twice the national average for all occupations.<sup>12</sup>
- Software drives economic opportunity: Jobs in software development, computer programming, and related fields are growing so rapidly that the US Bureau of Labor Statistics estimates 1 million computer programming jobs need to be filled in the United States.<sup>13</sup>
- Software is key to a global economic recovery: Post-2020, the shift to cloud- and software-enabled activity has accelerated. For example, the number of employees working remotely in mid-2020 is estimated to have grown (at least) four-fold over prior years,<sup>14</sup> while telehealth services are expected to grow seven-fold by 2025.<sup>15</sup>

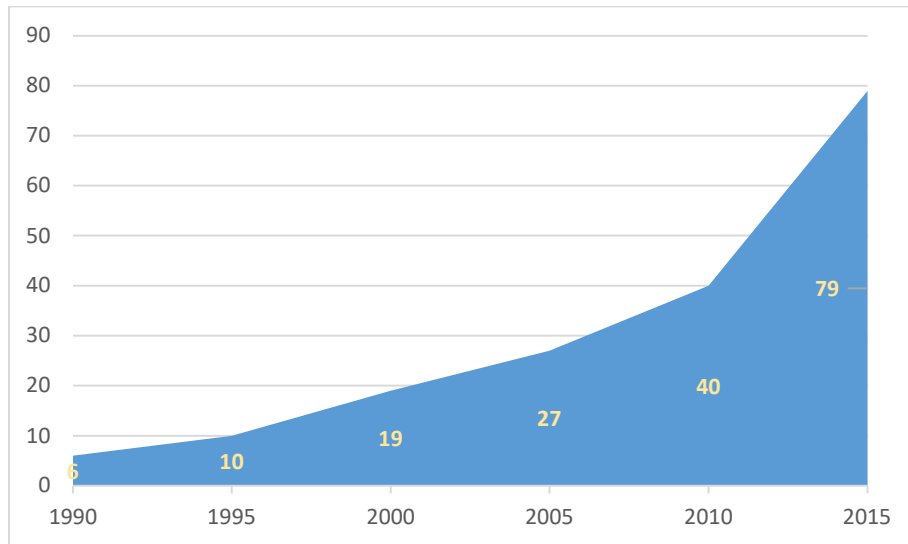
In every sector and at every stage of the production value chain, cloud- and software-enabled data transfers enable the digital tools and insights that are critical to enabling entrepreneurs and companies of all sizes to create jobs, boost efficiency, drive quality, and improve output.<sup>16</sup>

## C. Innovation- and Data-Related Market Access Barriers and the Innovation Lifecycle

Innovation and data-related market access barriers impact every stage of the innovation life cycle for US persons who rely on IP. This includes: (1) early stages of innovative and creative processes, including

basic R&D, initial conception, and design; (2) the acquisition and maintenance of IP rights; (3) the enforcement of IP rights and brand protection activities; and (4) the ongoing enjoyment and commercialization of those IP rights. These innovation and data-related market access barriers – particularly in the form of data localization mandates and cross-border data transfer restrictions – have been growing rapidly. Between 1995 and 2015, such data-related trade barriers have increased by over 800%, and the rate of increase has further accelerated in recent years, as depicted below.

Estimated Global Incidence of Data Transfer Restrictions and Data Localization Mandates<sup>17</sup>



Below we describe four ways in which such innovation and data-related barriers harm US persons who rely on IP.

### 1. Barriers to Core Innovation and R&D

Innovation and data-related market access barriers undermine basic research and scientific activity conducted by US persons who rely on IP. In every sector, cross border communication and data transfers play an integral role in basic R&D, and other core innovative and creative functions. For example, in semiconductor design as well as biopharmaceutical research, basic R&D depends upon access to globally sourced research materials from laboratories and research institutions from across the world, as well as collaboration, joint research, and the exchange of ideas and knowledge among teams of inventors, designers, authors, and other creators and innovators in different countries.

This collaborative approach to technological and creative endeavor integrates and binds together the international IP legal framework as well as scientific and artistic communities. R&D teams across universities, commercial labs, and enterprises in different countries collaborate across borders to develop new products, cures, and other advances protected by patents, trade secrets, copyrights and trademarks. Typically, such R&D also often requires the use of copyrighted software solutions and research data accessible across cloud-enabled and networked environments, as well as the application of AI-based analytical techniques to data transferred across borders and consolidated into larger data sets.<sup>18</sup>

As explained by the World Intellectual Property Organization (WIPO),<sup>19</sup> the US Patent & Trademark Office (USPTO),<sup>20</sup> and other IP authorities,<sup>21</sup> such R&D depends upon the application of AI-related tools to globally sourced data sets. Data sets consolidated across IT networks and borders can be analyzed (e.g., through machine learning or data analytical techniques) to identify meaningful insights, patterns, and

connections that can aid R&D teams in the discovery and development of novel solutions to scientific and technical challenges.

Market access barriers that impede data transfers make such AI-based analysis much more difficult for US persons who rely on IP. Such barriers prevent the consolidation of representative data sets necessary to conduct AI innovation. In this way, these trade barriers directly impede new innovations and creations by US creators, inventors and IP holders that otherwise could advance scientific and technological progress.

## **2. Barriers to IP Acquisition, Registration, and Maintenance**

Innovation- and data-related market access barriers threaten the ability of US persons who rely on IP to acquire, register, and maintain IP rights. Applicants must be able to transfer information across borders to apply for patent, copyright, trademark or other rights in a coordinated manner with IP office authorities in different countries. Access to data from multiple countries – such as prior art references – is also an integral part of the patent application examination process. They must also be able to transfer data across borders to avail themselves of WIPO-administered international registration and examination frameworks for IP rights, such as the Patent Cooperation Treaty, the Madrid Registry for trademarks, or the Hague System for the International Registration of Industrial Designs.

USPTO has studied the distortive impact of non-commercial considerations on patent and trademark application rates abroad.<sup>22</sup> It would also be relevant to review the impact of innovation- and data-related market access barriers on the ability of US persons to apply for IP rights abroad or at home – particularly where research activities occur in part outside the United States. Indeed, data localization mandates and data transfer restrictions that prohibit the transfer of large and undefined data sets deemed to be “important,” “critical,” or “sensitive” create significant uncertainty regarding the ability to transfer information and data necessary to these procedures for the acquisition, registration, and maintenance of IP rights.

## **3. Barriers to IP Enforcement and Brand Protection**

In today's global marketplace, IP infringement is increasingly complex and globalized, requiring sophisticated investigatory tools. No IP enforcement program can be effective without the ability to trace – on a cross-border basis – counterfeiting, commercial scale piracy, and other illicit activities with insights and information derived from foreign source countries, distribution hubs and networks, and end-user markets. Data localization measures and unnecessary data transfer restrictions directly interfere with the ability to investigate and counteract transnational IP infringing activities.

Innovation and data-related market access barriers can impede IP enforcement - from monitoring marketplaces, to gathering evidence of infringement in multiple locations, to researching details of illicit networks, to using administrative or judicial tools in multiple jurisdictions to preserve evidence and secure recourse. The ability to track and trace infringing activities across IT networks and borders is particularly important as many infringing acts involve an online element, whether via the offer and sale of infringing articles online; the cross-border exfiltration of source code, trade secrets or other proprietary data; the circumvention of technological protection measures; or the unauthorized and unlicensed use of copyrighted software or trademarks in an online environment.

## **4. Barriers to IP Commercialization**

Innovation and data-related market access barriers directly undermine the ability of enterprises to commercialize and enjoy the benefits of their IP rights. When a country mandates data localization or

restricts data transfers, it can easily frustrate the ability to enjoy the benefits of any IP right granted. With so many patented or copyrighted innovations functionally dependent upon satellite or other cross-border data communications (e.g., IoT software applications in the aerospace, automotive, and agricultural machinery sectors; music and video streaming services that disseminate licensed film or music content), cross-border data transfer restrictions make it difficult, if not impossible, for innovators and creators to sell or provide support to their IP-protected products or in foreign markets – interfering with their ability to secure a commercial return on, or otherwise enjoy the benefits of, their IP rights abroad.

#### D. Special 301 Report Statutory Criteria

Trade barriers and digital protectionism are growing at the very time that data-based innovation and IP generation are helping to sustain economic activity and employment. Against this background, USTR’s Special 301 review of trading partners’ barriers to IP protection and enforcement and associated market access barriers has ever greater salience.

Pursuant to the Special 301 statutory mandate, Section 182 of the Trade Act of 1974, as amended by the Omnibus Trade and Competitiveness Act of 1988 and the Uruguay Round Agreements Act of 1994 (19 USC § 2242) requires USTR to identify countries based on two separate sets of criteria:

- “Those foreign countries that **deny adequate and effective protection of intellectual property rights, or**
- **deny fair and equitable market access to United States persons that rely upon intellectual property protection**” (emphasis added).

In this submission, we address both elements of Section 182 of the Trade Act. The document highlights US trading partners with **deficiencies in protecting and enforcing intellectual property rights** and US trading partners that have erected **unfair market access barriers** that affect BSA members. For some countries, the market access barriers present the higher threat to BSA members’ ability to do business in the market. In other cases, US trading partners are deficient on both counts.

In this submission, we address both statutory elements of Section 182 of the Trade Act as they relate to the trade-related challenges that BSA members increasingly face abroad, and as they relate to the trade-related aspects of BSA’s COVID-19 Response and Recovery Agenda;<sup>23</sup> BSA’s Digital Trade Agenda;<sup>24</sup> and BSA’s Cloud Computing Scorecard.<sup>25</sup>

Drawing on these BSA resources, BSA’s Special 301 submission notes policies of concern in the following markets: **Brazil, China, India, Indonesia, South Korea, Thailand, Vietnam**, and the **European Union (EU)**. We do not propose specific country rankings on the Watch List, Priority Watch List, or Priority Foreign Country lists, and instead request that USTR and the Special 301 subcommittee take BSA’s input into account within the broader annual Special 301 review this year. We also refer the reader to BSA’s NTE submission for country-specific discussions for innovation and IP-related concerns in each of these markets.

#### E. Digital Market Access and IP Issues in Select Economies

Both to recover from COVID-19 and to realize the full potential of digital trade, it is important to establish legal frameworks that foster innovation and promote confidence in the digital economy. BSA’s Cloud Computing Scorecard examines the critical factors of such legal frameworks, including in relation to international trade, privacy, cybersecurity, IP, voluntary standard-setting, and information technology (IT) readiness. Japan, Singapore, and the United States score well in this report due to their forward-looking trade, IP, and innovation policies (including their support for rules to permit data analytics). In contrast, **China, India, Indonesia, Russia, and Vietnam** receive the lowest rankings of all countries reviewed, due to policies that undermine investment in software innovation and market access for software-enabled services and products.

## 1. Intellectual Property Issues

We outline below several IP priority issues for BSA members. Please see BSA's 2020 NTE submission for additional country-specific analysis of each of the areas noted below.<sup>26</sup>

### a. Artificial Intelligence and Machine Learning

IP frameworks are critical to data-enabled innovations, including AI, machine learning, cloud-based analytics, and the Internet of Things (IoT). US leadership in these AI-related technologies has been a priority for the US government for many years,<sup>27</sup> and will continue to be.<sup>28</sup> AI, machine-learning, and data analytics systems are “trained” by ingesting large data sets to identify underlying patterns, relationships, and trends that are then transformed into mathematical models that can make predictions based on new data inputs. Countries around the world are taking a range of approaches to modernize their legal frameworks for AI systems. This includes Japan's May 2018 Copyright Law Amendment Act and Singapore's January 2019 Copyright Review Report, which permit data analytics to be performed for both non-commercial and commercial purposes subject to requirements of lawful access.<sup>29</sup> The **EU** has also recently incorporated text and data mining exceptions to its copyright regime. Finally, in the United States, the “non-consumptive” reproductions that are necessary for the development of AI-related technologies are considered fair use. BSA urges the US government to continue promoting such AI-focused legal frameworks, including in countries like **Australia**<sup>30</sup> and **Brazil**, to foster innovation and creativity.<sup>31</sup>

### b. Copyrights

Innovation in the digital environment requires legal frameworks that provide copyright holders with the tools necessary to effectively enforce their copyrights. An effective framework for online copyright enforcement must balance the legitimate needs and interests of all parties with a role in driving innovation, including content creators, Internet service providers, online platform providers (i.e., intermediaries), and members of the public. These interests are best accommodated through safe harbor frameworks that provide online intermediaries with limitations on monetary liability for third party content in exchange for removing content upon notification of claimed copyright infringement from a relevant rights holder. Although a statutory safe harbor framework is a well-established international best practice reflected in the US and Singaporean legal systems (among others), other countries, such as **Brazil** and **Mexico**, have yet to modernize their copyright frameworks in this regard.

### c. Government and SOE Legalization

The use of unlicensed software by governments is particularly challenging to BSA members. Because BSA members rely on governments to provide protection and enforcement of their IPR, if governments are unwilling to comply with the law, there is often little that BSA or our members can do on our own. We urge the US Government to use mechanisms such as Special 301 to engage with US trading partners on behalf of US companies on this important issue.

### d. Software License Compliance

The use of unlicensed software by enterprises and governments is a major commercial challenge for BSA members. According to BSA's Global Software Survey — a global survey of more than 20,000 respondents that estimates the volume and value of unlicensed software installed on personal computers across more than 110 national and regional economies — the commercial value of unlicensed software globally is at least US\$46 billion.<sup>32</sup> Not only does the use of unlicensed software impact the revenue stream of BSA members — deterring investments in further innovation, but it also



exposes enterprises and agencies engaged in such activity to higher risks of malware infections and other security vulnerabilities.<sup>33</sup> Malware from unlicensed software costs companies worldwide nearly US\$359 billion a year. Chief information officers (CIOs) report that avoiding data hacks and other security threats from malware is the number one reason for ensuring their networks are fully licensed.

Organizations now face a one-in-three chance of encountering malware when they obtain or install an unlicensed software package or buy a computer with unlicensed software on it — threatening economic loss of proprietary and sensitive data, trade secrets, and other important intellectual property. A single malware attack can cost a company US\$2.4 million on average and can take up to 50 days to resolve. To the extent that the infection leads to company downtime, or lost business data, it can also seriously damage a company's brand and reputation. The cost for dealing with malware that is associated with unlicensed software is growing too.

BSA has engaged with US trading partners to reduce the incidence of unlicensed software use by enterprises and government entities, with varying degrees of success. These efforts include promoting voluntary compliance measures, such as effective, transparent, and verifiable software asset management (SAM) procedures, where enterprises and government agencies implement the necessary processes to efficiently manage, control, and protect their software assets and, as a result, ensure that all software is properly licensed. Governments can lead by example and adopt such measures for their own procurement and IT maintenance systems, which can send a powerful signal to enterprises in their countries.

#### e. Patents

BSA members invest enormous resources to develop cutting-edge technologies and software-enabled solutions for businesses, governments, and consumers. It is critical that countries provide effective patent protection for eligible computer-implemented inventions, in line with their international obligations.

#### f. Trade Secrets and Other Proprietary Information

BSA members rely on the ability to protect valuable trade secrets and other proprietary information to maintain their competitive position in the global marketplace. Countries with weak trade secret protection rules, or that have (or are proposing) policies requiring disclosure of sensitive information, include **China, India, and Indonesia**. In addition, countries including **China and South Korea** have implemented or proposed policies, such as sector-specific outsourcing or IT risk management frameworks, that require source code review of technologies or services. Additionally, India's proposed Non-Personal Data Governance Framework, if implemented, could require the transfer of sensitive proprietary data sets to government entities and to competitors, undermining rights holders ability to protect their trade secrets.

## 2. Digital Market Access Issues

We highlight the following digital market access issues: (a) cross-border data flows and data localization; (b) discriminatory trade barriers including discriminatory digital taxes; (c) customs requirements on electronic transmissions; (d) security; (e) standards; and (f) procurement restrictions.

#### a. Cross-Border Data Flows and Data Localization

The ability of US companies to continue leading global advances in innovative technology is under a rising threat from foreign government policies that restrict digital trade and market access. Data-related market access barriers take many forms. Sometimes the policies expressly require data to stay in-country or impose unreasonable conditions on sending data abroad. In other cases, the policies require the use of domestic data centers or other equipment, or the need for such data centers to be operated by local vendors. Sometimes these measures are based on privacy or security concerns, but too often the real

motivation appears to be protectionist, as reflected in their design and operation. For example, these measures may:

- Reflect a choice of policy tools that are significantly more trade-restrictive than necessary to achieve the stated public policy goal;
- Constitute unnecessary, unjustified, and/or disguised restrictions on data transfers across borders, or may be more restrictive of data transfers than necessary; or
- Treat cross-border data transfers less favorably than domestic data transfers.

Sustained attention to these threats is critical. Unfortunately, some markets, including **China, India, Indonesia, South Korea, and Vietnam**, have adopted, or have proposed, rules that prohibit or significantly restrict companies' ability to provide data services from outside their national territory.

Among several Chinese measures that restrict the ability to transfer data across borders, the draft 2017 Critical Information Infrastructure Protection regulations — as further elaborated in 2020 guidelines — would effectively require all cloud computing services providers (CSPs) to store data in-country.<sup>34</sup> India too has imposed data localization requirements, including through India's Directive on Storage of Payment System Data issued by the Reserve Bank of India in 2018, which imposes data and infrastructure localization requirements.<sup>35</sup> South Korea's Cloud Security Assurance Program (CSAP) requires use of local data centers for a broad range of cloud services.<sup>36</sup> The proposed implementation regulation for Indonesia's Government Regulation 71/2019 and OJK Regulation 13/2020 also contain data localization requirements. Likewise, Vietnam's 2018 Cybersecurity Law<sup>37</sup> and draft implementing regulations impose improper data localization requirements. These guidelines raise significant market access concerns for companies offering software, IT, and data services overseas.

Finally, BSA continues to monitor the application of measures in the **EU** that govern cross-border data flows, as well as the EU's bilateral and plurilateral trade negotiations and developing policies and legal jurisprudence, which could dramatically restrict cross-border data flows with third countries.

#### b. Discriminatory Trade Measures that Impact US Persons Who Rely on IP

BSA members often face discriminatory measures in trading partner markets.<sup>38</sup> These measures include rules that afford less favorable treatment:

- To innovations or creations invented or developed outside of a jurisdiction vis-à-vis their domestic analogues in respect of the ability to commercialize any resulting IP rights;<sup>39</sup>
- To the level of protection or enforcement of IP rights afforded to non-nationals vis-à-vis the level of protection or enforcement of IP rights afforded to nationals;<sup>40</sup>
- To imported digital products vis-à-vis their domestic analogues in respect of sale, use, investment, technical regulations, etc.<sup>41</sup>
- To non-national services or service providers vis-à-vis domestic counterparts.<sup>42</sup>
- To digital products created in another country or by non-national relative to a digital product created domestically or by a national.<sup>43</sup>

Similarly, such measures include discriminatory digital service taxes that would impose significant tax liability on US enterprise cloud and software providers, while effectively exempting local enterprise cloud and software providers. Such taxes would raise concerns under international trade law, inasmuch as they would appear to constitute internal taxes or charges on imported products (imposed directly or indirectly) in excess of those imposed on like domestic products,<sup>44</sup> and/or taxes and charges applied so as to afford protection to domestic production.<sup>45</sup> For example, arbitrary value thresholds, definitional scoping, and other specific features that afford protection to domestic digital products, while burdening imported digital products, raise concerns, as outlined in section 301 investigatory reports issued by the Office of the US Trade Representative in January 2021.<sup>46</sup> It will continue to be important to monitor these measures.

#### c. Customs Requirements on Electronic Transmissions

Across a broad cross-section of economic sectors, there are growing concerns about proposed domestic policies to improperly impose customs duties and other requirements on software and other electronic transmissions. Since 1998, World Trade Organization (WTO) Members have maintained a moratorium on customs duties on electronic transmissions. However, in 2018 **Indonesia** issued Regulation No.17/PMK.010/2018 (Regulation 17), which amends Indonesia’s Harmonized Tariff Schedule to add Chapter 99: “[s]oftware and other digital products transmitted electronically.”<sup>47</sup> Some countries, including **India** and **South Africa**, have also expressed support for the imposition of customs duties on electronic transmissions. If successful, these misguided efforts would increase costs of digital products and services and reduce productivity and competitiveness for local industries in the implementing countries.

#### d. Procurement Restrictions

Governments are among the biggest consumers of software products and services, yet many impose significant restrictions on foreign suppliers’ ability to serve public-sector customers. Not only do such policies eliminate potential sales for BSA members, but they also deny government purchasers the freedom to choose the best available products and services to meet their needs. US trading partners with existing or proposed restrictions on public procurement of foreign software products and services include **Australia, China, South Korea, and India**.

#### e. Security

Governments have a legitimate interest in ensuring software-enabled products, services, and equipment deployed in their countries are reliable, safe, and secure. However, some markets — including **Brazil, China, India, South Korea, and Vietnam** — are using or proposing to use security concerns to justify *de facto* trade barriers. Requiring cloud service providers to confine data in-country does not improve security but instead ultimately hinders it. First, storing data at geographically diverse locations can enable companies to maintain redundancy and resilience for critical data in the wake of physical damage to a storage location and obscure the location of data to reduce the risk of physical attacks. In addition, cross-border data transfers allow for cybersecurity tools to monitor traffic patterns, identify anomalies, and divert potential threats in ways that depend on global access to real-time data.

#### f. Standards

Technology standards play a vital role in facilitating global trade in software-enabled services and IT. When standards are developed through voluntary, industry-led processes and widely used across markets, they generate efficiencies of scale and speed the development and distribution of innovative products and services. Unfortunately, some countries have developed or are developing country-specific standards. The adoption of country-specific standards creates *de facto* trade barriers for BSA members and raises the costs of cutting-edge technologies for consumers and enterprises. As elaborated in BSA’s October 2020 NTE submission, countries adopting nationalized standards for IT products include **China, South Korea, and Vietnam**.

### F. Conclusion

BSA welcomes the opportunity to provide the foregoing brief comments to inform the development of the 2020 Special 301 Report and the US Government’s engagement with key trading partners. We look forward to working with USTR and the US agencies represented on the Special 301 Subcommittee of the Trade Policy Staff Committee to achieve meaningful progress on the issues described in this submission.

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<sup>1</sup> BSA's members include: Adobe, Atlassian, Autodesk, Bentley Systems, Box, CNC/Mastercam, DocuSign, IBM, Informatica, MathWorks, Microsoft, Okta, Oracle, PTC, Salesforce, ServiceNow, Siemens Industry Software Inc., Sitecore, Slack, Splunk, Trend Micro, Trimble Solutions Corporation, Twilio, and Workday.

<sup>2</sup> [www.govinfo.gov/content/pkg/FR-2020-12-15/pdf/2020-27515.pdf](https://www.govinfo.gov/content/pkg/FR-2020-12-15/pdf/2020-27515.pdf)

<sup>3</sup> See e.g., Ganes Kesari, *Why Covid Will Make AI Go Mainstream In 2021*, Forbes (Dec. 2020), <https://www.forbes.com/sites/ganeskesari/2020/12/21/why-covid-will-make-ai-go-mainstream-in-2021-top-3-trends-for-enterprises/?sh=1d83a3f6797a>; Arshadi et al., *Artificial Intelligence for COVID-19 Drug Discovery and Vaccine Development*, Front. Artif. Intell. (Aug. 2020), <https://www.frontiersin.org/articles/10.3389/frai.2020.00065/full>; Ungaro, et al., *Accelerating vaccine research for COVID-19 with high-performance computing and artificial intelligence*, HP Enterprise (2020), <https://www.hpe.com/us/en/newsroom/blog-post/2020/04/accelerating-vaccine-research-for-covid-19-with-high-performance-computing-and-artificial-intelligence.html>; IEEE, *Can AI and Automation Deliver a COVID-19 Antiviral While It Still Matters?* IEEE Spectrum (2020), <https://spectrum.ieee.org/artificial-intelligence/medical-ai/can-ai-and-automation-deliver-a-covid19-antiviral-while-it-still-matters>

<sup>4</sup> Wall Street Journal, *AI, Quantum R&D Funding to Remain a Priority Under Biden* (Nov. 9, 2020), <https://www.wsj.com/articles/ai-quantum-r-d-funding-to-remain-a-priority-under-biden-11604944800>; MIT Technology Review, *The Biden administration's AI plans: what we might expect* (Jan. 22, 2021), <https://www.technologyreview.com/2021/01/22/1016652/biden-administration-ai-plans-what-to-expect/>; Bloomberg, *Biden Needs an Innovation Agenda* (Jan. 25, 2021), <https://www.bloomberg.com/opinion/articles/2021-01-25/biden-needs-an-innovation-agenda>

<sup>5</sup> USPTO, *Artificial Intelligence Webpage* (2021), <https://www.uspto.gov/initiatives/artificial-intelligence>

<sup>6</sup> Software.org, *Growing US Jobs and the GDP* (Sept. 2019), [software.org/wp-content/uploads/2019SoftwareJobs.pdf](https://software.org/wp-content/uploads/2019SoftwareJobs.pdf).

<sup>7</sup> IFI Claims Patent Services, *2020 Top 50 US Patent Assignees* (as of Jan. 14, 2021) ("2020 Top 50 US Patent Assignees"), <https://www.ificlaims.com/rankings-top-50-2020.htm>

<sup>8</sup> USPTO, *Inventing AI - Tracing the Diffusion of Artificial Intelligence with US Patents*, p. 8 ("Figure 6: Top 30 U.S. AI patent owners-at-grant, 1976–2018") (Oct. 2020), <https://www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf>

<sup>9</sup> See Interbrand, *Best Global Brands Report* (2020), [learn.interbrand.com/hubs/INTERBRAND/Interbrand\\_Best\\_Global\\_Brands%202020\\_Desktop-Print.pdf](https://www.interbrand.com/hubs/INTERBRAND/Interbrand_Best_Global_Brands%202020_Desktop-Print.pdf)

<sup>10</sup> BSA Compliance Solutions Website, [bsacompliancesolutions.org](https://bsacompliancesolutions.org).

<sup>11</sup> BSA Compliance Solutions Website, [bsacompliancesolutions.org](https://bsacompliancesolutions.org).

<sup>12</sup> Software.org, *Growing US Jobs and the GDP* (Sept. 2019), [software.org/wp-content/uploads/2019SoftwareJobs.pdf](https://software.org/wp-content/uploads/2019SoftwareJobs.pdf).

<sup>13</sup> BSA | The Software Alliance, *A Policy Agenda to Build Tomorrow's Workforce* (2018), <https://www.bsa.org/files/policy-filings/05022018BSAWorkforceDevelopmentAgenda.pdf>.

<sup>14</sup> See generally, Global Data Alliance, *Cross-Border Data Transfers and Remote Work* (2020), <https://www.globaldataalliance.org/downloads/10052020cbdtremotework.pdf>. Prior to the COVID-19 crisis between five and fifteen percent of US employees worked remotely. Today, studies indicate that 50 percent or more of employees are working remotely, with even higher percentages in certain regions and certain professions.

<sup>15</sup> See generally, Global Data Alliance, *Cross-Border Data Transfers and Remote Health Services* (2020), <https://www.globaldataalliance.org/downloads/09152020cbdtremotehealth.pdf>.

<sup>16</sup> See Global Data Alliance, *The Cross-Border Movement of Data: Creating Jobs and Trust Across Borders in Every Sector* (2020), at <https://www.globaldataalliance.org/downloads/GDAeverysector.pdf>; See Global Data Alliance, *Jobs in All Sectors Depend Upon Data Flows* (2020), <https://www.globaldataalliance.org/downloads/infographicgda.pdf>.

<sup>17</sup> Martina Ferracane, *Restrictions on Cross-Border data flows: a Taxonomy*, ECIPE Working Paper (2017), <https://ecipe.org/wp-content/uploads/2017/11/Restrictions-on-cross-border-data-flows-a-taxonomy-final1.pdf>

<sup>18</sup> See Joshua Meltzer, *The impact of artificial intelligence on international trade*, Brookings Institution (2018), at: <https://www.brookings.edu/research/the-impact-of-artificial-intelligence-on-international-trade/>

- <sup>19</sup> See e.g., WIPO, *WIPO Technology Trends 2019, Artificial Intelligence* (2019), [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_1055.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_1055.pdf); WIPO, *Frequently Asked Questions: AI and IP Policy* (2021), [https://www.wipo.int/about-ip/en/artificial\\_intelligence/faq.html](https://www.wipo.int/about-ip/en/artificial_intelligence/faq.html); WIPO, *Artificial Intelligence and Intellectual Property Policy* (2020), [https://www.wipo.int/about-ip/en/artificial\\_intelligence/policy.html](https://www.wipo.int/about-ip/en/artificial_intelligence/policy.html)
- <sup>20</sup> USPTO, *Artificial Intelligence Webpage* (2021), <https://www.uspto.gov/initiatives/artificial-intelligence>; USPTO, *Public Views on Artificial Intelligence and Intellectual Property Policy* (2020), [https://www.uspto.gov/sites/default/files/documents/USPTO\\_AI-Report\\_2020-10-07.pdf](https://www.uspto.gov/sites/default/files/documents/USPTO_AI-Report_2020-10-07.pdf); USPTO, *Inventing AI - Tracing the Diffusion of Artificial Intelligence with US Patents* (Oct. 2020), <https://www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf>.
- <sup>21</sup> See e.g., Canadian Intellectual Property Office, *Processing Artificial Intelligence: Highlighting the Canadian Patent Landscape* (2020), [https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/vwapj/AI\\_Report\\_ENG.pdf/\\$FILE/AI\\_Report\\_ENG.pdf](https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/vwapj/AI_Report_ENG.pdf/$FILE/AI_Report_ENG.pdf); Japan Patent Office, *Recent Trends in AI-Related Inventions* (2019), [https://www.jpo.go.jp/e/system/patent/gaiyo/ai/document/ai\\_shutsugan\\_chosa/report-2019.pdf](https://www.jpo.go.jp/e/system/patent/gaiyo/ai/document/ai_shutsugan_chosa/report-2019.pdf); IP Australia, *Machine Learning Innovation – A Patent Analytics Report* (2019), [https://www.ipaustralia.gov.au/sites/default/files/reports\\_publications/patent\\_analytics\\_report\\_on\\_machine\\_learning\\_innovation.pdf](https://www.ipaustralia.gov.au/sites/default/files/reports_publications/patent_analytics_report_on_machine_learning_innovation.pdf); UKIPO, *Artificial Intelligence - A worldwide overview of AI patents and patenting by the UK AI sector* (2019), at [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/817610/Artificial\\_Intelligence\\_-\\_A\\_worldwide\\_overview\\_of\\_AI\\_patents.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/817610/Artificial_Intelligence_-_A_worldwide_overview_of_AI_patents.pdf); European Patent Office, *Patents and the Fourth Industrial Revolution* (2017), [documents.epo.org/projects/babylon/eponet.nsf/0/17FDB5538E87B4B9C12581EF0045762F/%24File/fourth\\_industrial\\_revolution\\_2017\\_en.pdf](https://documents.epo.org/projects/babylon/eponet.nsf/0/17FDB5538E87B4B9C12581EF0045762F/%24File/fourth_industrial_revolution_2017_en.pdf).
- <sup>22</sup> See USPTO, *Trademarks and Patents in China: The impact of non-market factors on filing trends and IP systems* (Jan. 2021), <https://www.uspto.gov/sites/default/files/documents/USPTO-TrademarkPatentsInChina.pdf>
- <sup>23</sup> BSA | The Software Alliance, *Response and Recovery Agenda* (2020), at: <https://www.bsa.org/files/policy-filings/05272020bsaresponserecoveryagenda.pdf>.
- <sup>24</sup> BSA | The Software Alliance, *Digital Trade Agenda* (2018), at: [https://www.bsa.org/files/policy-filings/05072019bsa\\_advancingdigitaltradeagenda.pdf](https://www.bsa.org/files/policy-filings/05072019bsa_advancingdigitaltradeagenda.pdf).
- <sup>25</sup> BSA | The Software Alliance, *Cloud Computing Scorecard* (2018), at: <https://cloudscorecard.bsa.org/2018/>.
- <sup>26</sup> BSA | The Software Alliance, *National Trade Estimate Submission* (2020), at <https://www.bsa.org/files/policy-filings/10292020bsa2020ntessubmission.pdf>
- <sup>27</sup> See e.g., Executive Office of the President, *Preparing for the Future of Artificial Intelligence* (2016), [https://obamawhitehouse.archives.gov/sites/default/files/whitehouse\\_files/microsites/ostp/NSTC/preparing\\_for\\_the\\_future\\_of\\_ai.pdf](https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/preparing_for_the_future_of_ai.pdf); Executive Office of the President, *Executive Order on Maintaining American Leadership in Artificial Intelligence* (2019), <https://trumpwhitehouse.archives.gov/presidential-actions/executive-order-maintaining-american-leadership-artificial-intelligence/>
- <sup>28</sup> See *infra* note 4.
- <sup>29</sup> Singapore Ministry of Law, *Singapore Copyright Review Report*, pp. 32-34 (Jan. 17, 2019), available at: <https://www.mlaw.gov.sg/content/dam/minlaw/corp/News/Press%20Release/Singapore%20Copyright%20Review%20Report%202019/Annex%20A%20-%20Copyright%20Review%20Report%2016%20Jan%202019.pdf>.
- <sup>30</sup> The copyright regime in Australia does not have an exception allowing the use of text and data mining for the purposes of develop AI algorithms. The current round of copyright reforms in Australia failed to address the private sectors' concerns and focused on non-commercial and government use exceptions. They are detailed at: <https://www.communications.gov.au/departmental-news/copyright-access-reforms>.
- <sup>31</sup> See BSA | The Software Alliance, *Comments on the Draft 2018-2022 Strategic Plan of the United States Patent and Trademark Office* (September 18, 2018), pp. 4-5, available at: [www.bsa.org/~media/Files/Policy/IntellectualProperty/09202018USPTOCommentsonDraft20182022StrategicPlan.pdf](http://www.bsa.org/~media/Files/Policy/IntellectualProperty/09202018USPTOCommentsonDraft20182022StrategicPlan.pdf).
- <sup>32</sup> See BSA Global Software Survey – In Brief (June 2018), available at: [https://gss.bsa.org/wp-content/uploads/2018/06/2018\\_BSA\\_GSS\\_InBrief\\_US.pdf](https://gss.bsa.org/wp-content/uploads/2018/06/2018_BSA_GSS_InBrief_US.pdf)
- <sup>33</sup> See *id.*
- <sup>34</sup> *Critical Information Infrastructure Protection Regulations (Draft for Comment)*, July 11, 2017 (Chinese) at: [http://www.cac.gov.cn/2017-07/11/c\\_1121294220.htm](http://www.cac.gov.cn/2017-07/11/c_1121294220.htm).

<sup>35</sup> Reserve Bank of India Storage of Payment System Data Directive (2018), <https://www.rbi.org.in/scripts/NotificationUser.aspx?Id=11244&Mode=0> and Ministry of Electronics and Information Technology Guidelines for Government Departments on Contractual Terms Related to Cloud Services, [https://www.meity.gov.in/writereaddata/files/Guidelines-Contractual\\_Terms.pdf](https://www.meity.gov.in/writereaddata/files/Guidelines-Contractual_Terms.pdf).

<sup>36</sup> See generally, BSA | The Software Alliance, National Trade Estimate Submission (2020), at <https://www.bsa.org/files/policy-filings/10292020bsa2020ntesubmission.pdf>

<sup>37</sup> Vietnam's 2018 Cybersecurity Law at: <https://luatvietnam.vn/an-ninh-quoc-gia/luat-an-ninh-mang-2018-luat-an-ninh-mang-so-24-2018-qh14-164904-d1.html#noidung>.

<sup>38</sup> See e.g., India Equalization Levy (as amended April 2020); Indonesia Electronic Transactions Tax (2020); Vietnam Tax Administration Law (July 1, 2020).

<sup>39</sup> See TRIPS Art. 3, 27.1.

<sup>40</sup> See TRIPS Art. 3.

<sup>41</sup> See GATT Art. III:4, TBT Art. 2.1, TRIMS Art. 2.1; etc.

<sup>42</sup> See GATS Art. XVII.

<sup>43</sup> See e.g., USMCA Art. 19.4.

<sup>44</sup> See GATT Art. III:2.

<sup>45</sup> See GATT Art. III:1.

<sup>46</sup> See generally, Office of the US Trade Representative, Section 301 – Digital Service Taxes, at [ustr.gov/issue-areas/enforcement/section-301-investigations/section-301-digital-services-taxes](https://ustr.gov/issue-areas/enforcement/section-301-investigations/section-301-digital-services-taxes)

<sup>47</sup> Regulation 17 purports to cover a wide array of categories, classified in Indonesia's tariff schedule between subheadings 9901.10.00 to subheading 9901.90.00, including "multimedia (audio, video or audiovisual)"; operating system software; application software; "support or driver data, including design for machinery system"; and a broad catch-all category covering "other software and digital products."