

**BOSTON TECH HUB FACULTY WORKING GROUP**

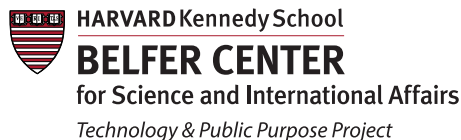
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# **What is the Right Approach for Sharing Intellectual Property Around Emerging Technology?**

BRIEF BY:

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# What is the right approach for sharing intellectual property around emerging technology?

The Boston Tech Hub Faculty Working Group, hosted by former Secretary of Defense and Harvard Kennedy School Belfer Center Director **Ash Carter** and Harvard SEAS Dean **Frank Doyle**, will convene its third session of the spring semester. This session will explore the limits and advantages of intellectual property (IP) sharing for emerging technologies.

For the purposes of this discussion, we are referring to IP broadly defined: proprietary algorithms, data collected, a complete developed product, etc. This brief focuses on tech companies, research centers, and labs that decide to limit access to certain types of IP in the name of protecting overall public good. This brief uses artificial intelligence (AI) algorithms as a primary example, but we expect discussion to encompass other technologies as well. This session will also examine the implications of alleged Chinese theft of emerging tech IP.

## Context:

- **Menu of Approaches for Limiting Access to IP:** There are an array of different methods and tools that companies, universities, governments, and individuals can use to protect or limit access to IP for emerging technologies. These include withholding research or data from publication, classifying projects and methods so only individuals with specific security clearances can access them, applying for copyrights or patent protections, requiring that employees or researchers sign non-disclosure agreements, implementing certain privacy and differential access protocols, and introducing government policies that place strategic limits on tech transfer or exports of certain technology products or processes. (An example of this final approach is the Department of Commerce's recent efforts to develop criteria for emerging technologies that are critical to national security and might therefore be included in future export control regulations.)
- **Arguments in Support of Limiting Access to IP:** Those who want to limit access to emerging technologies often cite concerns about national security, 'bad actors' misusing technology for nefarious purposes, or the threat a technology could pose to a specific value du jour, such as privacy, defending against fake news, etc. (Many companies also cite business or economic reasons for wanting to protect their IP, but this concern is not the focus of this discussion.)

Several organizations within the AI community, for instance, have recently taken steps to intentionally limit access to IP due to some of these concerns. Most recently, OpenAI announced that they would not release their trained model text generator, citing concerns about the "malicious

applications” of the technology.<sup>1</sup> Instead, the research company released a much smaller model and a technical paper. Last November, the Machine Intelligence Research Institute (MIRI) announced a shift to a “nondisclosed-by-default” research policy. Under this policy, MIRI will only publish research after an active decision to do so—usually based on an anticipated safety upside resulting from publication. When making this announcement, MIRI cited concerns about potential existential risk posed by future AI research, as well concerns about researchers’ ability to accurately predict/forecast what research could be most dangerous for society at this relatively early stage. Several private sector companies are also limiting IP around AI: in January, Google released a policy paper announcing limits on sharing their AI research software and code (due to fears of misuse), and Alphabet and Microsoft are now including warnings in their annual reports to investors about the potential ethical and legal complications that AI might cause.

- **Arguments Supporting Open Access to IP:** Proponents of maintaining widespread sharing of emerging technology IP often make several key arguments. They counter concerns of bad actors misusing a technology by arguing that making research, code, etc. public allows other researchers, journalists, and ethicists to examine the technology and identify possible issues (and help develop countermeasures). Many also suggest that research advancements happen more quickly when academics and other researchers share their work. There are also economic development arguments in support of open access to tech IP: new technology can create entire new industries when shared, and tech advancements can be harnessed or adapted to benefit emerging economies and countries. Numerous people have argued that limiting access to IP is ineffective. They suggest that another group will figure out a way to develop the same technology and release it, or an individual/group who disagrees with the decision to limit access could relatively easily release the information on the internet.

Many universities and federal agencies that fund research have open access policies. Such policies are underpinned by the understanding that part of the mission of universities is to generate and disseminate knowledge. Thus, the policy of these universities is to ensure that their research (peer-reviewed journal articles) are available for anyone to “read, download, copy, distribute, print, search, or link to the full texts of these articles, crawl them for indexing, pass them as data to software, or use them for any other lawful purpose.” Similarly, these universities emphasize that code should be open-source and that data should be “findable, accessible, interoperable, and reusable.”<sup>2</sup> MIT and Harvard both have open access policies. Some government agencies have similar open access or public access policies—the National Institutes of Health (NIH) is a prominent example.

- **China and Emerging Tech IP:** There has recently been substantial international focus on China and emerging tech IP. Technological progress is a major tenant of China’s long-term strategy—some

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1 “Better Language Models and Their Implications,” OpenAI, February 14, 2019. [Accessible online.](#)

2 “About Open Access,” MIT Open Access Task Force. [Accessible online.](#)

believe that appropriating made-in-America tech is a key component of this strategy. China seeks to acquire foreign tech IP through some illegal tactics, including industrial espionage and cyber theft, but also through legal tactics such as acquisitions and early-state investments in start-ups. China also forces joint ventures: companies that want to produce or sell in the Chinese market are often encouraged or required to form a joint-venture with a Chinese firm. This process results in foreign companies turning over tech IP to Chinese partners. In November 2018, China passed a cybersecurity law that required data localization, providing China with access to foreign data, encryption, and source codes. China's tech IP acquisition efforts are largely focused on AI, robotics, augmented and virtual reality, and financial tech.

In an effort to counter Chinese tech IP acquisition, the U.S. passed the Foreign Investment Risk Review Modernization Act (FIRRMA) in August 2018. FIRRMA expanded the jurisdiction and powers of the Committee on Foreign Investment in the United States (CFIUS), the U.S. interagency committee that conducts national security reviews of foreign investment, to include review of U.S. businesses working on critical technologies. Specifically, CFIUS now has the ability to restrict Chinese investment in U.S. tech companies, including start-ups. The Trump Administration has also been publicly critical of China's unfair practices surrounding tech IP.

## Discussion Questions:

- Are there categories of IP for which access should generally be limited? What characteristics of such IP make it potentially threatening to public good?
- Who is responsible (and best positioned) to evaluate which technology IP should be limited to protect public good? Government agencies that fund research? Researchers? Patent holders? The company that leverages the technology to produce a product for the market?
- What is the government's role in ensuring that the process of tech transfer continues to serve public good?
- Is limiting tech IP enough to protect public purpose? If not, what are the other processes that need to accompany it and who is responsible for those other needed steps?

## Readings:

“Draft Recommendations of the MIT Ad Hoc Faculty Task Force on Open Access to MIT’s Research,” MIT Open Access Task Force, March 16, 2019. [Accessible online.](#)

Mak, Aaron. “When Is Technology Too Dangerous to Release to the Public?” *Slate*, February 22, 2019. [Accessible online.](#)

Soares, Nate. “2018 Update: Our New Research Directions” [Excerpt], Machine Intelligence Research Institute, November 22, 2018. [Accessible online.](#)

Tucker, Patrick. “This Pentagon Paper Explains Why the Trump Administration Is Reigning In Tech Trade with China,” *Defense One*, April 6, 2018. [Accessible online.](#)