AMERICAN INNOVATORS:

AMERICA'S NEXT TECH

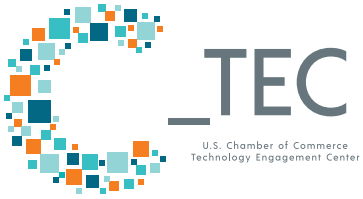
UPGRADE

DATA FOR GOOD

AND THE NEED FOR A NATIONAL DATA STRATEGY

C_TEC

U.S. Chamber of Commerce Technology Engagement Center



Our nation's future economic success, growth, and competitiveness depends on a thriving and innovative technology sector. Every company is a tech company and data-driven innovation is the foundation of businesses across the country.

The Chamber Technology Engagement Center (C_TEC) tells the story of technology's role in our economy and advocates for rational policy solutions that drive economic growth, spur innovation, and create jobs.

The U.S. Chamber of Commerce is the world's largest business federation representing the interests of more than 3 million businesses of all sizes, sectors, and regions, as well as state and local chambers and industry associations.

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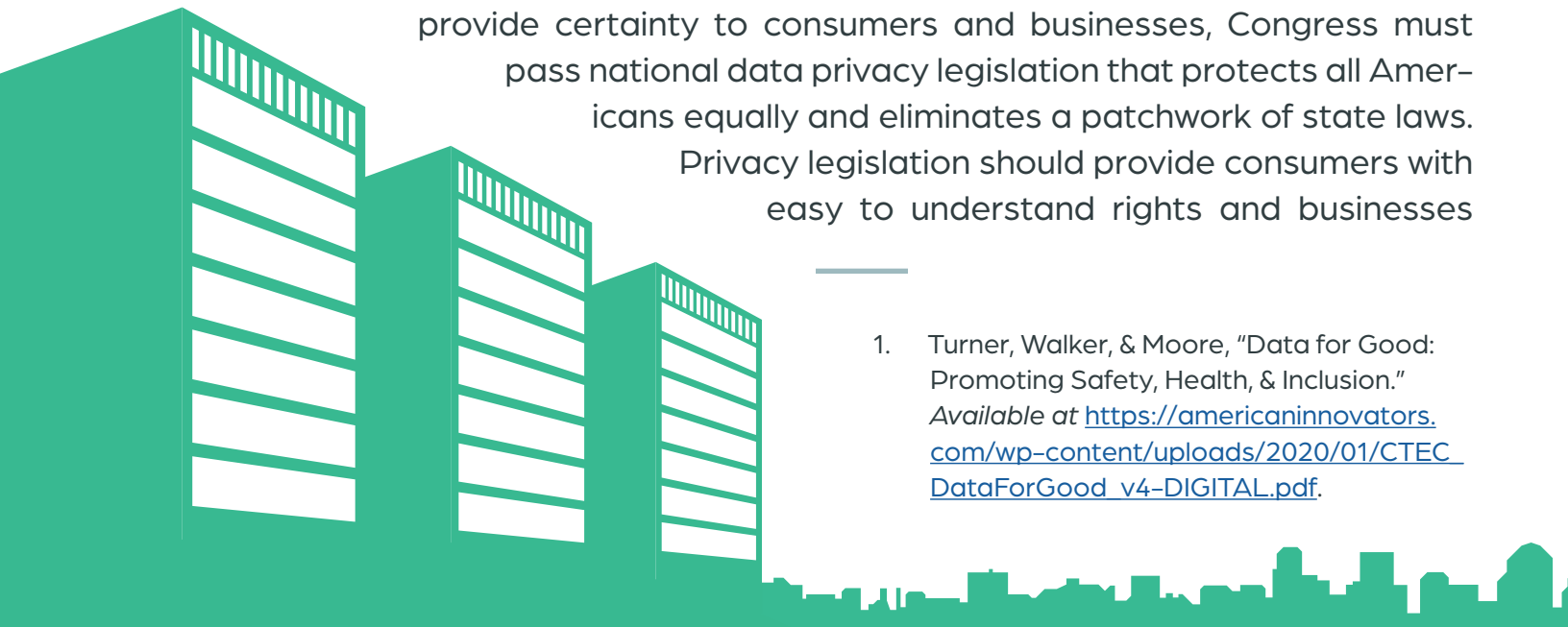
EXECUTIVE SUMMARY

Data has long been a driver of the United States' 21st century economic leadership in analytics in the areas of financial inclusion, public health, and safety.[1] The coronavirus disease 2019 ("COVID-19") has further brought to light just how important the use of data is to mitigating the effects of the virus, tracking and slowing its spread, and promoting economic recovery. In order for Americans to continue to reap these vital benefits, the Chamber Technology Engagement Center ("C_TEC") calls for a national data strategy, including the need for national privacy legislation, a robust artificial intelligence ("AI") framework, and information technology ("IT") modernization for federal, state, and local governments.

In order for Americans to continue to reap these vital benefits, the Chamber Technology Engagement Center ("C_TEC") calls for a national data strategy:

- **National Data Privacy Legislation:** In order to spur innovation and provide certainty to consumers and businesses, Congress must pass national data privacy legislation that protects all Americans equally and eliminates a patchwork of state laws. Privacy legislation should provide consumers with easy to understand rights and businesses



1. Turner, Walker, & Moore, "Data for Good: Promoting Safety, Health, & Inclusion." *Available at* https://americaninnovators.com/wp-content/uploads/2020/01/CTEC_DataForGood_v4-DIGITAL.pdf.

with clear obligations. Congress must recognize the importance that data plays in advancing key societal goals like public health, safety, and inclusion.

- **Artificial Intelligence:** The emergence of AI technologies will transform nearly every sector of the economy and improve the lives of millions of Americans. To ensure the responsible development and deployment of AI applications and position the United States as a global AI leader, policymakers must embrace commonsense regulatory approaches, invest in AI research and development and open government data, and lead in the creation of AI standards.

- **Information Technology Modernization:** Government IT systems have lagged behind the private sector in terms of modernization. Congress and the administration must take a proactive approach to providing funding to upgrade federal systems. Policymakers must facilitate a coordinated plan to ensure that agencies not only utilize resources efficiently but also develop and implement strategic planning around how government IT is procured and integrated into government operations.

The first section of this white paper authored by the PERC addresses how technology and data have been used to aid in the fight against and recovery from COVID-19. Later sections are policy proposals put forward by C_TEC for a national data strategy.

PART ONE:

DATA FOR GOOD: COVID-19 SPECIAL EDITION

ABSTRACT

Michael Turner, Patrick Walker, and Kazumi Moore

This paper examines a select sample of responses by the U.S. tech sector to public health and economic challenges associated with the COVID-19 global pandemic. It argues that the immediate and proactive large-scale tech sector mobilization has played a vital role in effectively addressing national healthcare and economic priority needs. The report further argues that but for significant and ongoing tech sector contributions, as bad as things are in the U.S. on both fronts, they likely would have been much worse. Evidence of tech sector contributions to addressing public healthcare challenges is highlighted in Section 1: Tech and Health. There, a number of use cases are cited involving social media, AI, and other tech-led approaches. Responses and solutions proffered by the tech sector to economic challenges occurring as a consequence of the response to the pandemic are featured in Section 2: Tech and the Economy. This section features a number of fintech solutions oriented toward helping small businesses and employees endure hardships resulting from responses to the pandemic. Lastly, the report offers a few key findings in Section 3: Conclusion that may be useful for policymakers when exploring data constraints on the U.S. tech sector in the context of any future national privacy legislation.

INTRODUCTION

Amidst the sea of changes wrought by COVID-19, examples of how tech has helped in the U.S. and globally are abundant. Almost immediately, online retail became the consumer portal of choice for household essential items from food and drink to clothing and diapers. You needed personal protection equipment (PPE) and local stores had none? Amazon, eBay, and others had them and would get them to your front door quickly and safely.[2] Missed interacting with beloved family members and cherished friends? Social media platforms were there to keep us in touch and help us feel less alone and more part of a larger community.[3] Who knew that "Zoom" would become such a heavily used verb and noun during the pandemic?

In addition to helping tens of millions of Americans meet their basic daily needs while keeping us all connected, tech has also played (and continues to play) a vital role in our collective fight against COVID-19. Google dedicated considerable resources to enable to scale contact tracing and make information about the virus accessible. Just weeks into the national emergency, IBM led a collaboration of tech firms to provide healthcare scientists, epidemiologists, and a range of experts with access to cutting edge computing resources in an effort to develop a treatment. Section 1 explores the role tech played in the health sciences during the pandemic, including use cases from Google, Apple, and IBM.

Of course, the healthcare crisis created (and continues to cause) considerable economic collateral damage. And while federal and state government actors, working together with the private sector, have implemented a broad range of measures designed to mitigate many of the pandemic-driven economic challenges, the tech sector has been

2. Annie Palmer, "Amazon has delivered more than 100 million pieces of protective gear to frontline workers and governments during coronavirus pandemic." *CNBC*. 19 May 2020. Accessed on 8 September 2020 at: https://www.cnbc.com/2020/05/19/amazon-has-delivered-100-million-pieces-of-ppe-during-coronavirus.html
3. Jessica Wong, "Virtual meet-ups, gradual starts, school bubbles: what university life looks like during COVID-19." *CBC*. 8 September 2020. Accessed on 8 September 2020 at: https://www.cbc.ca/news/canada/university-pandemic-back-to-school-1.5699500

on the frontlines. Financial technology ("FinTech") entities such as Kabbage have used their high-touch relationship with a range of borrowers, and their unique and deep data assets, to help administer relief funds to dislocated workers and owners of micro- and small-enterprises—the backbone of the American economy. Section 2 discusses this in more detail, highlighting the capacities of FinTech firms and why they were able to deliver funds faster, without higher fraud rates, to a range of borrowers. A use case of Kabbage is featured here.

There are many other examples of tech responses to the COVID-19 pandemic that are yielding massive social or economic benefits—including mental health apps for the millions of people struggling with anxiety and depression,[4] distance learning solutions to help safeguard the nation's children while ensuring they receive the highest quality education,[5] remote healthcare services including distance medicine and pharmacy.[6]

Clearly, the tech sector has provided some important rays of hope in dealing with changes brought about by the COVID-19 pandemic. While it might be a stretch to say that the tech sector has a halo now, it is worthwhile to note that this more positive attention does follow years of generally negative media coverage. For instance, just two years ago, "techlash" was a runner up in Oxford Dictionary's word of the year competition.[7] As such, one legacy from the current period may well be a more balanced view of the tech sector itself.

At the end of the day, it is highly likely that there will be multiple safe and effective vaccines and treatments to coronavirus developed. The current crisis will eventually be behind us and the U.S. economy will rebound. Tech, as we highlight in this report, will be integrally involved in making both happen.

4. Patrick Lucas Austin, "Slowly losing your mind in lockdown? 5 apps to boost your mental health." *Time Magazine*. 31 August 2020. Accessed on 8 September 2020 at: https://time.com/5884626/mental-health-apps/
5. Keith Bradsher et al., "Fall classes begin virtually for millions of U.S. students." *New York Times*. 8 September 2020. Accessed on 8 September 2020 at: https://www.nytimes.com/2020/09/08/world/covid-19-coronavirus.html?action=click&module=Top%20Stories&pgtype=Homepage#link-7e3d861
6. Nicol Turner Lee & Niam Yaraghi, "How to make telehealth more permanent after COVID-19." *Brookings Institution*. 4 September 2020. Accessed on 8 September 2020 at: https://www.brookings.edu/blog/techtank/2020/09/04/how-to-make-telehealth-more-permanent-after-covid-19/
7. Stanley-Becker, Isaac. "'Toxic' is Oxford Dictionary's 2018 word of the year:'Gaslighting' and 'Techlash' are among runners-up." Washington Post. 16 November 2018.

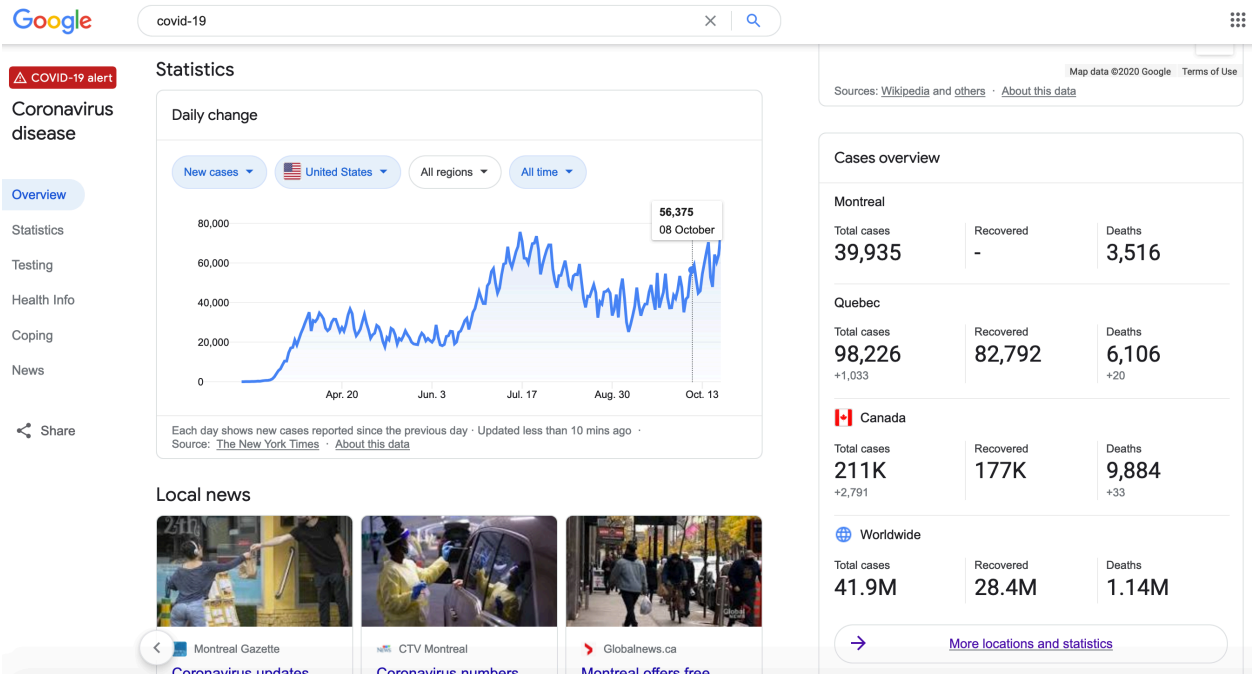
1. TECH & HEALTH

GOOGLE

Google has been joining the fight against COVID–19 in a number of ways; some are prominent and public facing, others are not.

One prominent effort is apparent when searching "COVID–19" or its variations in the Google search bar. At the time of writing, the result does not bring the user to the typical Google search results page. If the device used is a computer, then the left side of the screen has a menu of options: *Overview, Statistics, Health Info, Testing, Coping, and News* (For smartphones this menu is on the top of the screen.) The right side of the screen displays a map with updated numbers of confirmed cases, deaths, and recovered. This is also presented in a table at different levels of geography. In the main body of the results page, the *Overview* section is displayed by default. In this section, *Top stories, Local News*, and *Videos* are returned as are *Local and National resources*. This last category includes *Reopening* and *Testing* information. Below these is the *Health Information* category. This has information on Symptoms, Prevention, and Treatment.

As such, typing "COVID–19" in the Google search bar produces a COVID–19 information dashboard.



Screenshot of Google's COVID-19 Dashboard taken on October 23, 2020.

Searching Google for information about COVID-19 symptoms brings up an interactive Google COVID-19 self-assessment. It is clearly noted that this tool is for "informational purposes only" and that it does not produce a medical diagnosis. After answering questions about symptoms, underlying health conditions, risk factors, and the like, suggestions are presented such as *Call a medical provider within 24 hours, Seek immediate medical help, or No COVID-19 testing needed at this time*.

A particularly valuable data capability that Google has is its ability to analyze and synthesize location data. Location data from maps and other Google applications are used to produce anonymous, aggregate *Community Mobility Reports*. These reports are available at different levels of geography. For instance, there is a national report, state level reports, and county level reports. These show a change in mobility from a pre-Covid-19 baseline by several categories, including retail and recreations, grocery and pharmacy, parks, workplaces, and residential. These show patterns that one would expect—workplace visits are way down, but park visits are way up. They also allow for objective comparisons between locations. So, for instance, Sweden, which was considered to have had less of a shutdown compared to other countries, at least early on, actually had less mobility to workplaces than parts of the U.S. in July. This data measures *actual* behavior.

Such data can give immediate feedback on whether government efforts to decrease activity and interactions to reduce the spread of the virus are working. They can also measure the speed and degree to which activity returns to normal (the baseline) after restrictions and advisories are lifted. This is extremely valuable high-frequency, real-time data for public health purposes as well as for economic planning, monitoring, and recovery.

Models that are designed to uncover factors that accelerate the virus spread can compare infection rates by location with past mobility data to identify patterns. This then can be used to produce projections of future infection rates. Models are already using this data.[8]

In addition, Google's mobility data for specific stores and locations is typically shown in an information box when searching for the store/location or when using Google Maps. This data is shown in a histogram and labeled "popular times." Consumers can use this when they wish to social distance and avoid the busiest business hours.

And with so many working, attending school, socializing, and carrying out other activity from home, people are relying on existing Google services such as Google Classroom, Gmail, Google Meet like never before.

In addition to the more public facing efforts, Google is also a member of the COVID-19 High Performance Computing Consortium, which makes supercomputing and other computational resources available to COVID-19 researchers.[9] This will be discussed in greater detail in the *AI for Good* section.

PRIVACY-PRESERVING CONTACT TRACING

Contact tracing is a standard method for controlling outbreaks of contagious infections. If someone tests positive for an infection such as COVID-19, then public health officials would track down all those who came into contact with the infected person during the period when they were likely to have been contagious. Those people are then tested

8. https://covid19.healthdata.org
9. https://covid19-hpc-consortium.org/

and/or isolated, and contact traced as well. This has the potential to slow or halt the spread of infections and has been successfully used against COVID–19 and other contagions. There are a number of factors that would impact the efficacy of contact tracing, including (1) the asymptomatic rate of the contagion; (2) the availability, speed, and accuracy of tests; and (3) how well contacts can be traced. In addition, the degree to which the infection has spread has a real logistical impact. For instance, if only ten people are infected in a country, contact tracing can easily focus on the ten with typical public health resources. If a million are infected, ramping up resources may take too long and may not catch up to the spread of the contagion.

Google partnered with Apple to create a tool to assist with the third factor listed above, helping with the actual tracing of a person's contacts when they were contagious. Specifically, the partnership created a privacy–preserving contact tracing tool called Exposure Notifications API. Software developed for public health authorities can use this API to aid contact tracing efforts.

The Exposure Notifications tool works by having the user's phone generate and broadcast random codes via Bluetooth for a 10– to 20–minute period, while recording other such random codes from other nearby phones. This process records personal interactions (technically phone interactions) over short distances (the distance Bluetooth can be transmitted). Then if someone tests positive for COVID–19, the random codes that their phone has been transmitting are flagged in a database (but not their name or identity). Other phones periodically check this database to determine if they came in close proximity to someone that tested positive during a certain period of time (a flagged code is recorded). If so, the software would alert those individuals that they had come in close proximity to someone who tested positive for COVID–19 during a period when they were likely contagious.

This is carried out without amassing a database of those that tested positive or transmitting such information to others. Thus, it is privacy preserving. And this is not just a beneficial side feature of the tool. The privacy preserving aspect means that it is more likely that consumers would enable such a tool on their phones, making the tool more effective.

The partnership between Apple and Google is crucial since the vast majorly of the U.S. public has either an iPhone or a phone that uses Google's Android operating system. Both operating systems needed to use the same Exposure Notifications system.

The privacy-preserving contact tracing API will not be a silver bullet solution to defeating COVID-19 or even carrying out contact tracing, but it can be a powerful tool in assisting those efforts. For future outbreaks (COVID-19 and others), the tool can be readily deployed while those outbreaks are in earlier stages. As such, the tool should be maintained and improved and not simply shelved after the current crisis.

AI FOR GOOD

The COVID-19 High-Performance Computing (HPC) Consortium is a massive public-private partnership led by IBM, White House Office of Science and Technology, and the Department of Energy.[10] The Consortium matches supercomputing resources to scientists who submit research proposals related to helping the fight against the coronavirus—a little Manhattan Project of the 21st century. One supercomputer with eight petaflops can do approximately one million calculations per person in the world per second,[11] and one petaflop of computing power costs between $2 to $3 million.[12] The Consortium's collection of supercomputers has over 600 petaflops and provides it to researchers for free.[13]

This undertaking came together in less than a week, and the first project began four days after launch, largely due to existing networks.[14] This is a remarkable accomplishment that will likely go underappreciated by the general public. Members include seven Department of Energy National Labs, other government agencies, international governments, universities, and industry, some of whom are competitors, such as Google, Microsoft, Amazon, and HP.[15] Over seventy research proposals have been received since the Consortium was organized, some of which are already starting to show results.

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10. Adrian Bridgwater, "COVID-19 Research Driven by G7 International Supercomputer Pact." *Forbes*. 2 June 2020. Accessed 14 July 2020 at: https://www.forbes.com/sites/adrianbridgwater/2020/06/02/covid-19-research-driven-by-g7-international-supercomputer-pact/#553149e412f7
11. *Ibid.*
12. Kyle Wiggers, "COVID-19 HPC Consortium Pours 437 Petaflops of Compute Power Towards Virus Research." *VentureBeat*. 28 May 2020. Accessed at 14 July 2020 at: https://venturebeat.com/2020/05/28/covid-19-hpc-consortium-pours-437-petaflops-of-compute-power-toward-virus-research/
13. See COVID-19 High Performance Computing Consortium at https://covid19-hpc-consortium.org/.
14. Interview with IBM on July 1, 2020.
15. "Who We Are." *COVID-19 High Performance Computing Consortium*. Accessed 31 July 2020 at: https://covid19-hpc-consortium.org/who-we-are

The New Yorker reported on the fallacy of speed in a race to create a vaccine for a disease with still so many unknowns, including whether or not immunity is lasting.[16] Dr. Fauci contrasted the coronavirus to AIDS, saying "I thought HIV was a complicated disease. It's nothing compared to what's going on with COVID-19." The article profiled the National Emerging Infectious Diseases Laboratories (NEIDL) in Boston, stating, "the lesson learned from *w* is the value of building a protective scientific infrastructure beyond a vaccine, something that requires legions of scientists working carefully and in concert to understand the numerous ways that a virus causes disease."

The aim of the Consortium is to build the infrastructure of a national Scientific Readiness Reserve for future emergencies.[17] While supercomputers are used to accelerate some aspects of the vaccine effort, the knowledge and systems created now will have value beyond the coronavirus pandemic. As the diversity of the Consortium's membership shows, resources needed to address global threats are scattered around the scientific community, and existing collaboration will speed up the mobilization and pooling of those resources when needed. While early results from this collaboration were still unavailable at the time of this report's publication, rumours of some notable breakthroughs were bubbling, and results are soon expected. In any event, given what has been accomplished, it is imperative that this collaboration be preserved to hit the ground running in the event of a future pandemic.

Some interesting ideas being explored in the Consortium include new methods of statistical analysis for disease case count data varying in space and time,[18] and simulations of

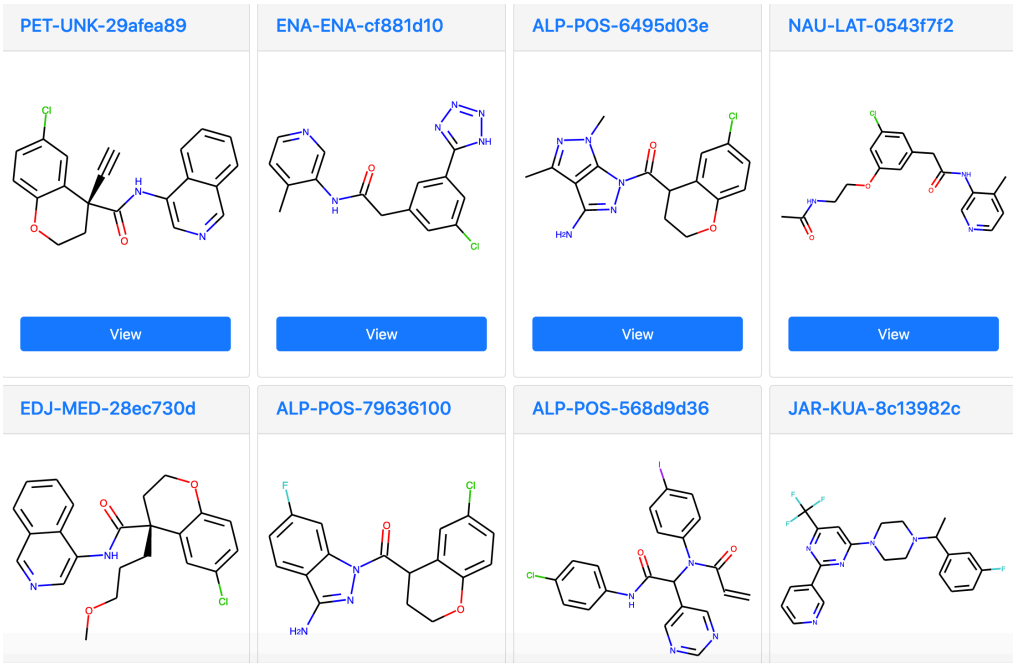
16. Jerome Groopman, "The Long Game of Coronavirus Research." *The New Yorker*. 23 July 2020. Accessed 24 July 2020 at: https://www.newyorker.com/science/medical-dispatch/the-long-game-of-coronavirus-research
17. Avi Loeb & Dario Gil, "Let's Create an Elite Scientific Body to Advise on Global Catastrophes." *Scientific American*. 30 April 2020. Accessed 13 July 2020 at: https://blogs.scientificamerican.com/observations/lets-create-an-elite-scientific-body-to-advise-on-global-catastrophes/
18. "Tensor Decomposition Methods for Statistical Analysis of Spatio-Temporal Infectious Disease Data." *COVID-19 High Performance Computing Consortium*. 8 June 2020. Accessed on 14 July 2020 at: https://covid19-hpc-consortium.org/projects/5f0784b30f3945008331082a

smartphone-assisted, privacy-preserving COVID-19 contact tracing programs to model community spread.[19] This section will explore a few use cases of the Consortium that showcase AI for good.

POSTERA

PostEra is a machine learning chemistry startup company that began the COVID Moonshot Project, a crowdsourcing platform for scientists to submit drug designs based on approximately 80 molecules identified by Chinese and British researchers that could potentially counter the coronavirus.[20] The crowdsourcing campaign resulted in over 2,000 submissions. PostEra, alerted to the HPC Consortium resources by its server provider, Amazon Web Services, used the HPC Consortium resources to speed up identification of compound combinations, which enabled work that would have taken 3 weeks to be done in 48 hours.[21] This effort culminated in databases containing global contributions of over 14 billion molecules.

19. "Agent-Based Simulation for Contact Tracing using Human Activity Data." *COVID-19 High Performance Computing Consortium*. 6 May 2020. Accessed on 14 July 2020 at: https://covid19-hpc-https://covid19-hpc-consortium.org/projects/5eb325daa1f39b007f0da730; "Privacy-Aware Contact Tracing with Knowledge Mining Mechanisms to Monitor and Understand the COVID-19 Pandemic." *COVID-19 High Performance Computing Consortium*. 6 May 2020. Accessed on 14 July 2020 at: https://covid19-hpc-consortium.org/projects/5eb325b9ae13950082637fab.
20. Bala Thekkedath & Katia Moskvitch, "PostEra Accelerates Research into COVID-19 Drugs Based on Molecular Fragments." *COVID-19 HPC Consortium Blog*. 12 May 2020. Accessed on 14 July 2020 at: https://covid19-hpc-consortium.org/blog/post-era-accelerates-research-into-covid-19-drugs-based-on-molecular-fragments
21. See 2nd COVID-19 HPC Consortium Webinar at https://www.youtube.com/watch?v=lHo-sQLSBoY&feature=youtu.be



Screenshot of chemical compound submissions taken from PostEra's website on October 23, 2020.

NASA AMES RESEARCH CENTER

Researchers are using the National Aeronautics and Space Administration ("NASA") Ames Supercomputer to analyze COVID-19 susceptibility.[22] Specifically, they are looking for subgroups at risk of Acute Respiratory Distress Syndrome ("ARDS"), an inflammatory response in the lungs to pneumonia. ARDS is COVID-19's deadliest complication. Being able to identify those at risk of developing ARDS will help predict which patients will require intensive support before severe symptoms arise, allowing for intensive care resource management, as well as provide an important test group for clinical vaccine trials. Partners on this project include NASA Ames Research Center, Northern California Kaiser, and Tempus Labs.

Dovetailing with the project above, Ames Research Center is also working on a design for a COVID-19 drug, using RNA sequencing data to identify biomarkers or gene se-

22. "Whole Genome Analysis Using the NASA Ames Supercomputer to Define Risk Groups for Severe Pulmonary Disease Associated with COVID-19 and Other Illnesses." *COVID-19 High Performance Computing Consortium*. 3 April 2020. Accessed 14 July 2020 at: https://covid19-hpc-consortium.org/projects/5e86f-de644c9d8007ff92162

quences associated with a severe case of coronavirus.[23] Afshin Behesti, a NASA scientist working on the GeneLab platform, an open-source platform for space bioscience research, began working on the project during his free time.[24] This led to the creation of COV-IRT, the COVID-19 International Research Team, which now comprises over 190 researchers. The preliminary results have been promising, with several papers in preparation for publication.

MIT-IBM WATSON AI LAB

At the MIT-IBM Watson AI Lab, researchers are modelling the effects of lockdowns and other public health measures. Using data from American and European hospitals, scholarly research from coronavirus databases, machine learning, and optimization, Dimitris Bertsimas, Associate Dean of Business Analytics, Boeing Professor of Operations Research and faculty director of the Master of Business analytics at MIT, and his team are analyzing infection and resource allocation.[25] The four projects are:

1. Tracking community spread for efficient resource allocation, particularly during surges, of supplies and resources at the front lines

2. Optimizing resources between different states with different rates of COVID-19

3. A mortality and disease progression calculator to predict a person's vulnerability to the coronavirus, and whether it would result in them needing a hospital bed or more intensive care

4. Creating a convenient test for COVID-19

23. "COVID-19: RNA-Seq Analysis to Identify Potential Biomarkers Indicative of Disease Severity." *COVID-19 High Performance Computing Consortium*. 24 April 2020. Accessed 28 July 2020 at: https://covid19-hpc-consortium.org/projects/5ea35e1096bc76008452aeb2
24. Katia Moskvitch, "A NASA Researcher Leads Efforts to Design a COVID-19 Drug." *COVID-19 HPC Consortium Blog*. 27 July 2020. Accessed 28 July 2020 at: https://covid19-hpc-consortium.org/blog/a-nasa-researcher-leads-efforts-to-design-a-covid-19-drug
25. "MIT Sloan Models Track COVID-19 Spread in Communities and Different Outcomes." *MIT Sloan Office of Media Relations*. 15 April 2020. Accessed 31 July 2020 at: https://mitsloan.mit.edu/press/mit-sloan-models-track-covid-19-spread-communities-and-predict-patient-outcomes

As an example of their work, in the second project the researchers created an app for ventilator pooling that could be used by hospitals, as well as state and federal governments.[26]

"The backbone for each of these projects is data," Dr. Bertsimas said.

Artificial intelligence is being used to accelerate scientific discovery in response to the global pandemic. But it is the High-Performance Computing Consortium that is accelerating the use of AI and acting as a blueprint for a future private-public partnership to address catastrophes. As with the privacy-preserving contact tracing app, the HPC should not be mothballed after COVID-19. This "computing tool" should be maintained in some capacity in the event it is needed in the future.

2. TECH & THE ECONOMY

While some companies are looking at alleviating the healthcare crisis, other companies are targeting the economic fallout from the coronavirus. The Paycheck Protection Program ("PPP"), to be administered by the Small Business Administration ("SBA"), was established by the Coronavirus Aid, Relief, and Economic Stimulus ("CARES") Act. The first tranche of the PPP program comprised $349 billion. [27]PPP focused on the retention of employees on payroll, basing the amount of the loan on the applicant's payroll costs, with at most 40% of the funds permitted to be used for non-payroll purposes such as rent or utilities.[28]

Drawing on years of research on economic recovery from natural disasters, PERC published key lessons applicable to the COVID-19 economic recovery[29] and evaluated the

26. See: https://www.covidanalytics.io/ventilator_allocation
27. Kimberly Weisu, "The result of PPP confusion: billions of dollars remain untapped." 14 May 2020. *Inc.* Accessed 13 June 2020, at: https://www.inc.com/kimberly-weisul/why-you-still-might-try-for-a-paycheck-protection-program-loan.html
28. Small Business Administration. "Paycheck Protection Program." *SBA.gov*. Available at: https://www.sba.gov/funding-programs/loans/coronavirus-relief-options/paycheck-protection-program
29. Michael Turner, Patrick Walker, & Kazumi Moore, *PERC Research Findings for COVID-19 Economic Recovery Efforts*. Durham: Policy & Economic Research Council (PERC), March 2020, available at: https://www.perc.net/wp-content/uploads/2020/03/C19-White-Paper_03252020_FINAL-1.pdf

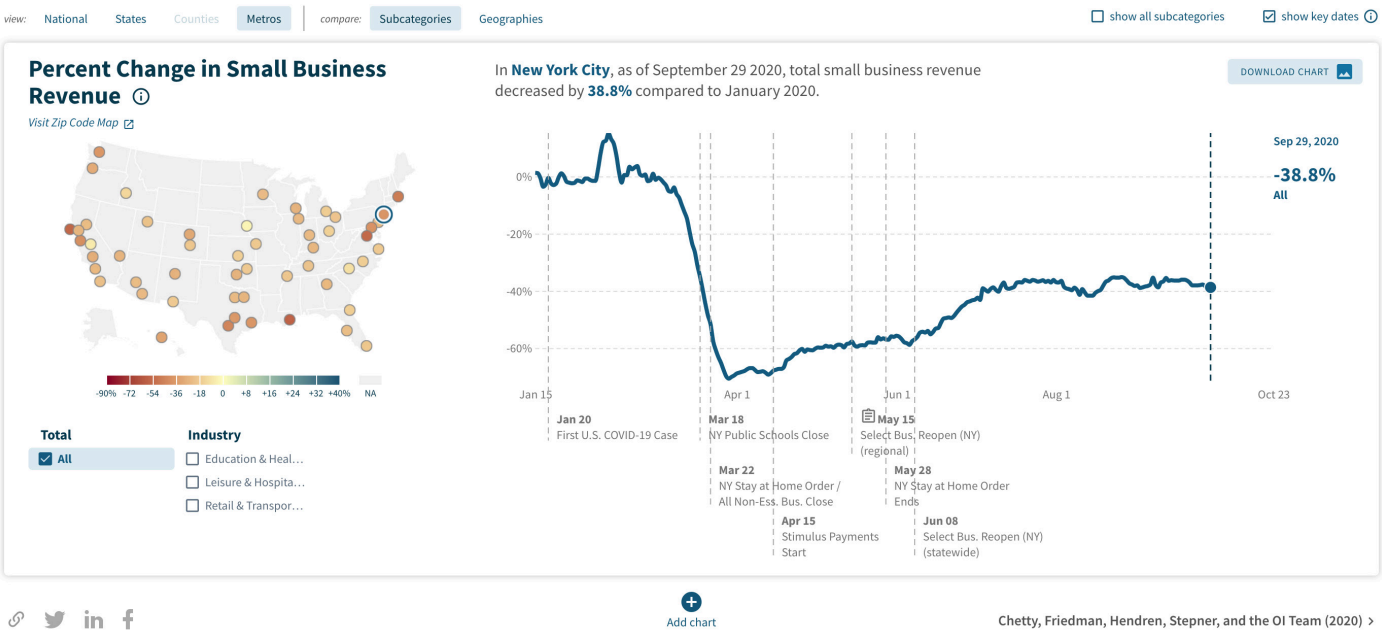
proposed PPP along these metrics.[30] The report emphasized grants as preferable to loans, and the PPP program allowed forgiveness of the loan if certain circumstances were met.

Several companies at the larger end of the small business threshold of 500 employees or less took PPP money and came under fire for taking money seemingly away from smaller businesses that needed the funds for survival. Some were publicly traded companies able to raise capital elsewhere or had paid out millions in executive compensation before applying for the loan.[31] The money returned to the program amounted to over $375 million.[32]

While the PPP was designed to get funds into the hands of businesses quickly, speed was an important factor in applying for a PPP loan, as the first tranche ran out in 14 days and had to be supplemented by a second tranche of $310 billion.[33] The demand overwhelmed the SBA website and single-employer businesses were forced to wait one week after initial PPP applications opened.[34] This concern was also related to which institutions were able to distribute PPP loans, as PERC found that local and community organizations had been able to disburse aid two months faster than the larger SBA.[35] FinTech firms and payment platforms such as Kabbage, Square, and PayPal were certified later.[36]

30. Michael Turner, Patrick Walker, & Kazumi Moore, *Ensuring the Small Business Paycheck Protection Program Works: Lessons Learned from Gulf Coasts SMEs Post-Katrina*. Durham: Policy & Economic Research Council (PERC), April 2020, available at: https://www.perc.net/wp-content/uploads/2020/04/PPA.pdf
31. Jessica Silver-Greenberg et al., "Large, troubled companies got bailout money in small business loan program." *New York Times*. 13 May 2020. Accessed 13 June 2020, at: https://www.nytimes.com/2020/04/26/business/coronavirus-small-business-loans-large-companies.html
32. https://www.nytimes.com/2020/05/04/business/live-stock-market-coronavirus.html#link-48f11fd9
33. Weisu, "The result of PPP confusion: billions of dollars remain untapped."
34. *Ibid.*
35. Michael Turner, Robin Varghese, & Patrick Walker, *Louisiana Small Businesses Five-Years Post Katrina: Assessing LDRF Program Impacts & Measuring Existing Needs*. Chapel Hill: Policy & Economic Research Council (PERC), March 2011, available at https://www.perc.net/wp-content/uploads/2013/09/LDRF_stat_report.pdf
36. Donna Fuscaldo, "As COVID-19 lenders, PayPal, Square, other FinTechs get to prove they can do it better than banks." *Forbes*. 15 April 2020. Accessed June 10, 2020, at: https://www.forbes.com/sites/donnafuscaldo/2020/04/15/as-covid-19-lenders-paypal-square-other-fintechs-get-to-prove-they-can-do-it-better-than-banks/#195c86e6587a

Data provides real-time feedback on the recovery and the effectiveness of programs aiming to stimulate it. The PERC report identified business credit files and collections as potentially useful data to track disaster recovery.[37] Chetty et al. from Opportunity Insights used a number of private data sources, including credit card processors, payroll firms, and Google's Community Reports, to create an interactive map of the underlying financial conditions of communities from the metro level to the national level during the pandemic.[38] These measures can identify the hardest-hit geographic areas and help tailor policies to address the varying impacts of the pandemic. Chetty et al. used their data to evaluate 3 policy efforts that addressed the economic impact of the pandemic: state-ordered reopenings, stimulus payments to households, and loans to small businesses (PPP).



Screenshot of tracktherecovery.org taken October 23, 2020, narrowed to the percent change in small business revenue at the New York City metro level.

37. Michael Turner et al., *Credit & Financial Impacts of Disaster: What We Can Learn From Credit File Data.* Chapel Hill: Policy & Economic Research Council (PERC), August 2008, available at https://www.perc.net/wp-content/uploads/2008/08/Financial-Impacts-of-Disaster1.pdf
38. See https://tracktherecovery.org/

PERC has also found that distributed aid money does get spent and has a multiplier effect, where for every $100 worth of aid distributed, $103 a year of wages from net new jobs would be produced, and these wages are spent locally, creating additional employment and wages, with a reasonable total estimate of 1.5, or approximately $100 worth of aid distributed resulting in $155 a year in new wages.[39] Clearly, community recovery is made harder when workers are let go, which explains the PPP's focus on employee retention.

Analysts can assess the full aggregate impact of the PPP with more time, but one thing is certain—the program provided sorely-needed relief to individual small businesses. Large banks administering the PPP were also criticized for favoring clients who owed them money over customers who were truly in need, essentially looking after their own interests,[40] but in many cases their PPP processes were manual, which limited them to existing customers.

Some companies have been successful at getting PPP to the smallest businesses most vulnerable to the pandemic by automating the processes. On June 30, 2020, Kabbage, a FinTech lender, was the second largest PPP lender in the country by volume, having loaned $7 billion to 297,000 clients, with a loan average of $23,546. Half their loans were under $13,000 and 92% were under $50,000. Square's loans also averaged less than $11,000, with 97% of loans made under $50,000, SBA's smallest tier of measurement. Square found that after receiving PPP funds, businesses running payroll increased by 70%, the number of employees paid by businesses almost doubled, and among businesses that never stopped payroll, the average number of employees paid increased by 34%.[41]

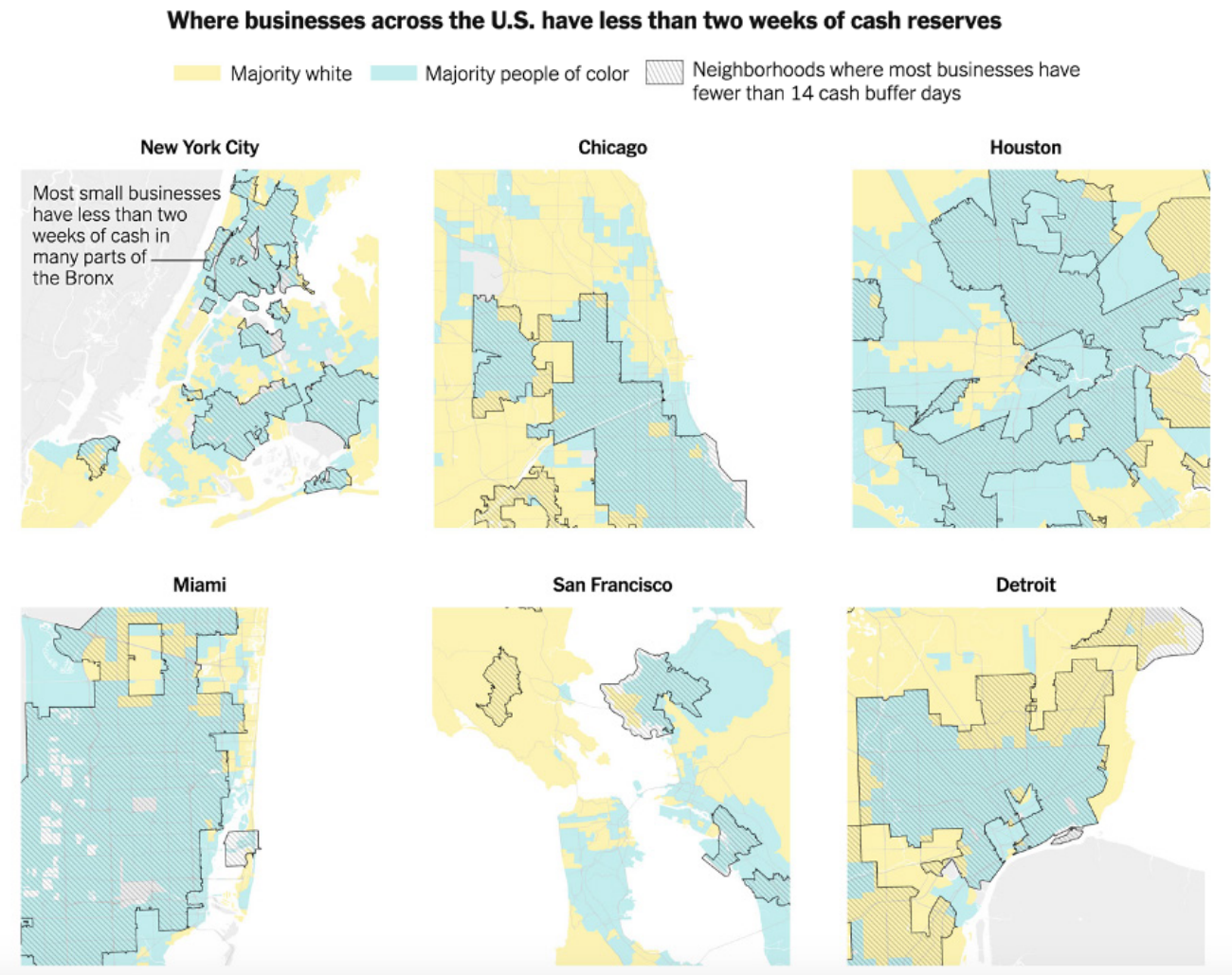
In contrast to banks that served existing customers, FinTech lenders received applications from new customers. Square opened its PPP loan process to all sellers on its plat-

39. Turner, Varghese, & Walker, *Louisiana Small Businesses Five-Years Post Katrina: Assessing LDRF Program Impacts & Measuring Existing Needs*.
40. Emily Flitter & Stacy Cowley, "Banks gave richest clients 'concierge treatment' for pandemic aid." *New York Times*. 22 April 2020. Accessed 13 June 2020, at: https://www.nytimes.com/2020/04/22/business/sba-loans-ppp-coronavirus.html
41. Square, "PPP in review: Square Capital has facilitated 76,000+ small businesses loans across all 50 states."

form,[42] whereas some banks only opened applications for certain customers.[43] Kabbage partnered with community banks and technology organizations that serve small businesses to bring in over 60,000 new customers, which represented 93% of the loans they made.[44]

Black business owners faced greater challenges even before the pandemic. PERC research on economic recovery after natural disasters found that pre-disaster economic health of small business owners matters.[45] The *New York Times* reported that neighborhoods where most businesses lacked cash to survive more than 14 days overlapped with majority people of color neighborhoods.[46] Compared to white Americans, black Americans have less wealth, earn less income, and are underserved by banks.[47]

42. Interview with Square on June 17, 2020.
43. Flitter & Cowley, "Banks gave richest clients 'concierge treatment' for pandemic aid."
44. Interview with Kabbage on July 8, 2020; Kabbage, "Kabbage PPP results: a historic feat for FinTech."
45. Michael Turner, Robin Varghese, & Patrick Walker, *Recovery, Renewal, & Resiliency: Gulf Coast Small Businesses 2 Years Later*. Chapel Hill: Policy & Economic Research Council (PERC), August 2007, available at https://www.perc.net/wp-content/uploads/2013/09/Gulf_Coast.pdf
46. Lauren Leatherby, "Coronavirus is hitting black business owners hardest." *New York Times*. 18 June 2020. Accessed on 19 June 2020 at: https://www.nytimes.com/interactive/2020/06/18/us/coronavirus-black-owned-small-business.html
47. "The Paycheck Protection Program continues to be disadvantageous to smaller businesses, especially businesses owned by people of color and the self-employed." *Center for Responsible Lending*. 27 May 2020. Accessed 14 July 2020 at: https://www.responsiblelending.org/sites/default/files/nodes/files/research-publication/crl-cares-act2-smallbusiness-apr2020.pdf?mod=article_inline



Source: JPM Chase Institute, 2018 American Community Survey five-year estimates via socialexplorer.com as found on New York Times.

This made them more vulnerable to both the economic and health effects of the coronavirus—black Americans are more likely to die from COVID-19.[48] 95% of black-owned businesses are non-employer firms,[49] which meant they had to wait an extra week for PPP to open. They are also less likely to have traditional banking partners,[50] which shut them out of PPP eligibility for banks who were only processing applications for existing

48. "The color of coronavirus: COVID-19 deaths by race and ethnicity in the US." *APM Research Labs*. 8 July 2020. Accessed 14 July 2020 at: https://www.apmresearchlab.org/covid/deaths-by-race
49. *Ibid.*
50. Center for Responsible Lending, "The Paycheck Protection Program continues to be disadvantageous to smaller businesses, especially businesses owned by people of color and the self-employed."

customers, and are more likely to be in industries like retail and restaurants that were hit hard by the pandemic.[51] One estimate found that 40% of all black-owned small businesses were expected to close due to the coronavirus.[52] Square and Kabbage both report that non-employer firms (i.e. sole proprietor) made up a majority of their PPP loans recipients.[53]

The CARES Act specifically instructed the SBA to prioritize minority- and women-owned businesses.[54] One third of Kabbage loans went to businesses in zip codes with an average household income of less than $50,000, which saved an estimated 257,000 jobs out of a total 945,000 jobs and provided over $1.9 billion to these businesses.[55] 47% of Square loans went to businesses in zip codes with an average household income of less than $50,000.[56] However, it is not clear that all PPP-administering banks received this message.[57]

Financial inclusion is of paramount importance both in terms of economic recovery from the pandemic and leveling the playing field for communities under-served by the financial system. Credit invisibility is a phenomenon affecting every 1 out of 5 Americans, but in the lowest-income census tracks, 45% of Americans are credit invisible.[58] While cash

51. Leatherby, "Coronavirus is hitting black business owners hardest."
52. Khristopher Brooks, "40% of black-owned businesses not expected to survive coronavirus." *CBS News*. 22 June 2020. Accessed 14 July 2020 at: https://www.cbsnews.com/news/black-owned-businesses-close-thousands-coronavirus-pandemic/
53. "PPP in review: Square Capital has facilitated 76,000+ small businesses loans across all 50 states." *Squareup.com*. 15 June 2020. Accessed on June 17, 2020, at: https://squareup.com/us/en/press/ppp-in-review. "Kabbage PPP results: a historic feat for FinTech." *Kabbage.com*. 13 August 2020. Accessed on 13 October, 2020 at: https://newsroom.kabbage.com/wp-content/uploads/2020/08/Kabbage-Paycheck-Protection-Program-PPP-Report.pdf
54. SBA Inspector General, *Flash Report: Small Business Administration's Implementation of Paycheck Protection Program Requirements*. Washington D.C.: SBA Inspector General, May 2020, available at: https://www.sba.gov/sites/default/files/2020-05/SBA_OIG_Report_20-14_508.pdf
55. Kabbage, "Kabbage PPP results: a historic feat for FinTech."
56. Square, "PPP in review: Square Capital has facilitated 76,000+ small businesses loans across all 50 states."
57. SBA Inspector General, *Flash Report: Small Business Administration's Implementation of Paycheck Protection Program Requirements*.
58. Kenneth Brevoort, Philipp Grimm, & Michelle Kambara, *Data Point: Credit Invisibles*. Washington D.C.: Consumer Financial Protection Bureau, May 2015, available at https://files.consumerfinance.gov/f/201505_cfpb_data-point-credit-invisibles.pdf

continues to disappear at a rapid pace in favor of contactless cards,[59] 8.4 million American households still do not have bank accounts.[60] PERC has long advocated for the use of proven payment data (utilities, telecommunications, and rent payment data) to expand financial inclusion to those who may not have a mortgage, car loan, or credit card.[61] Kabbage is one FinTech firm using internal credit data analytics to meet unmet needs.[62]

Kabbage created an automated process for PPP loan applications in two weeks that extracted data from uploaded documents, which approved over 75% of all applications, as well as over 90% of self-employed applications.[63] However, the PPP was not without its share of fraud, with some arrests already being made, and lending companies stating that they caught many inauthentic documents through their automated processes. Kabbage said that the verification process would have been enhanced with API access to Internal Revenue Service (IRS) data.[64]

In Part II of the U.S. Data Ecosystem, PERC found that the incidence of identity theft could not be explained by the incidence of data breaches,[65] and in Part III, PERC explored the role data played in combatting identity fraud, rather than contributing to it.[66] Real-time access to databases that can confirm identities has helped prevent identity theft, and the PPP is another example where it would have been useful. Data is the solution, not the problem, and the government should consider making accessible databases that help enforce laws and regulations.

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59. Square, *Making Change: Payments and the Pandemic*, 2020. Accessed at: https://squareup.com/us/en/making-change/covid
60. FDIC, *2017 FDIC National Survey of Unbanked and Underbanked Households*. Washington D.C.: Federal Deposit Insurance Corporation, 2017, available at: https://www.fdic.gov/householdsurvey/2017/2017report.pdf
61. Michael Turner & Alyssa Lee, *Give Credit Where Credit is Due: Increasing Access to Affordable Mainstream Credit Using Alternative Data*. Washington, DC: The Brookings Institution, December 2006, available at http://www.perc.net/wp-content/uploads/2013/09/alt_data.pdf
62. Jeremy Quittner, "Why banks are missing the point." *Inc.com*. 23 January 2014. Accessed 14 July 2020 at: https://www.inc.com/jeremy-quittner/kabbage-growth-numbers-address-gap.html
63. Kabbage, "Kabbage PPP results: a historic feat for FinTech."
64. Interview with Kabbage on July 8, 2020.
65. Turner, Walker, & Moore, *Data, Technology Flows, and the Need for National Privacy Legislation*.
66. Turner, Walker, & Moore, *Data for Good: Promoting Safety, Health, & Inclusion*.

Data is the solution, not the problem, and the government should consider making accessible databases that help enforce laws and regulations.

It is now clear that long-term efforts will be needed to address the pandemic's effect on the economy. Data can supply real-time feedback that should be used to monitor assistance programs and inform policymakers on where and how those programs should be structured. Small businesses will be crucial to economic recovery, and lessons should be learned from success stories of those who have managed to help the businesses most in need.

CONCLUSION

Neither the global health crisis nor the economic collateral damage have run their final course—and both may endure for months or years yet—but evidence from the first 6 months of the pandemic demonstrates the significant role tech has played in confronting the challenges of COVID-19 on both fronts. While it is impossible to prove the counter-factual, there are good reasons to believe that but for the aggressive and proactive actions of many actors in the tech sector, the situation in the U.S. likely would have been much worse. Further, to the extent that a safe and effective vaccine and/or therapeutic treatment are soon released, almost certainly tech will have played a significant role in expediting the development.

One of the key findings from this analysis is that the tech industry answered the bell when it was so needed. Not only did tech play early and ongoing vital roles during the lock-down period, but they came together with a diverse range of actors to create and introduce innovative tools to overcome challenges created by the public health and economic crises. Given the near certainty of future pandemics and natural disasters, the tools created during the COVID-19 pandemic—including contact tracing, the computer consortium, and others—must be preserved for future emergencies.

The use cases featured in this report represent a small sample of the myriad roles played by various tech firms during the pandemic to date. The breadth and diversity of positive impacts tech has had thus far serve to underscore the importance of the tech sector in the American economy and society, and hopefully provide people a more balanced view of the sector. Were this sector to be substantially constrained or allowed to be diminished, outcomes in both the public health and economic spheres almost certainly would have gone sideways. Imagine if the U.S. were largely dependent upon other nations' tech solutions to this pandemic. A strong, U.S.-based tech sector is necessary for a resilient economy and society. The continued global leadership of the U.S. tech sector mitigates risks associated with pandemics and other exogenous shocks and has proven as much during the COVID-19 crisis.

Lastly, if nothing else, the past six months have shown the tech sector can do well by doing good. Tech is bringing together communities and helping them cohere during very trying times. Whether through social media outlets, supply chain and distribution channels, or through public sector/private sector partnerships such as the computer consortium, the U.S. tech sector has proven to be a bedrock for managing both the healthcare and economic crises.

PART TWO:

C_TEC'S NATIONAL DATA STRATEGY

A NATIONAL DATA PRIVACY LAW

Consumers deserve to have their privacy protected, and businesses need certainty to provide the best products and services, including those specifically designed to improve public health and promote economic recovery. All of this should happen nationally, to avoid disparate laws and standards for treatment of the same data across state boundaries and to provide more assurance for consumers and businesses alike. A national standard should also promote the free flow of data internationally, which is essential to U.S. innovation in all industry sectors in the 21st digital economy and to overcoming the current pandemic.

The development of state privacy laws has had mixed results so far. In 2018, California passed the nation's first privacy law broadly applicable to personal information—the California Consumer Privacy Act ("CCPA"). Prior to CCPA's enactment, privacy generally had been regulated and enforced under sectoral laws like the Gramm-Leach-Bliley Act ("GLBA" financial institutions), the Health Insurance Portability and Accountability Act ("HIPAA" healthcare), the Children's Online Privacy Protection Act ("COPPA"), the Fair

Credit Reporting Act ("FCRA"), and federal and state "unfair and deceptive trade practices" statutes.[67]

CCPA's regulations are estimated by a report commissioned by the California Attorney General to cost up to $55 billion in compliance costs for California companies.[68] Small businesses employing 20 or fewer employees are projected to bear costs up to $50,000.[69] Californians will also vote on a ballot initiative in November 2020 that would add sweeping new requirements to the CCPA and create a new data protection agency.[70]

Other states like Washington nearly passed legislation in early 2020 but failed after considering the inclusion of a private right of action.[71] Nearly 20 other states considered their own comprehensive privacy bills with differing frameworks during the beginning of 2020.[72] In addition to comprehensive privacy legislation, states are considering proposals that would significantly regulate the use of digital contact tracing under the aegis of privacy that would further complicate a state patchwork.[73]

Data knows no boundaries, as information constantly crosses state lines among hundreds of millions of Americans. Although the goal of the various state legislatures of protecting consumer privacy is laudable, a state patchwork of privacy laws that employ differing or conflicting approaches could be detrimental to enabling America's technological leadership. Data is core to business models across all industry sectors in the 21st digital economy and is an invaluable resource to overcoming the current pandemic. A patchwork of state privacy laws would slow down technological innovation and create consumer confusion on rights and remedies. The chilling effect to innovation would oc-

67. See e.g. 15 U.S.C. § 45 (Section 5 of the Federal Trade Commission Act).
68. State of California Department of Justice, "Standardized Regulatory Impact Assessment: California Consumer Privacy Act of 2018 Regulations" at 11 (August 2019) *available at* http://www.dof.ca.gov/Forecasting/Economics/Major_Regulations/Major_Regulations_Table/documents/CCPA_Regulations-SRIA-DOF.pdf.
69. *Id.*
70. https://www.oag.ca.gov/system/files/initiatives/pdfs/19-0021A1%20%28Consumer%20Privacy%20-%20Version%203%29_1.pdf
71. https://app.leg.wa.gov/billsummary?BillNumber=6281&Initiative=false&Year=2019
72. https://americaninnovators.com/wp-content/uploads/2019/12/CTEC_Privacy2020_HeatMap.pdf
73. https://americaninnovators.com/wp-content/uploads/2020/08/Chamber-AB1782-and-AB660-Letter.pdf

cur because companies would face unprecedented uncertainty as to which laws apply and how to comply with potentially conflicting laws. For consumers, confusion weakens an individual's ability to exercise their rights.

Many in Congress recognize the critical need for a national privacy law. Republicans including Senate Commerce, Science, and Transportation Committee Chairman Roger Wicker (R-MS) and Senator Jerry Moran (R-KS) introduced proposals that pre-empt state law and rely on enforcement by the Federal Trade Commission ("FTC") of consumer rights.[74] Democratic lawmakers like Senator Maria Cantwell (D-WA) and Sherrod Brown (D-OH) proposed creating a federal privacy floor for regulating data protection while enabling states to continue enacting new regimes.[75]

To encourage consumer protection, instill business certainty, and promote innovation, C_TEC calls on Congress to pass national privacy legislation that gives consumers the right to know how data is used, collected, and shared; delete personal information; and opt out of the sharing of personal data that does not have a legitimate purpose. Rights to delete and opt out should take into consideration a business's need to retain and use information as necessary to conduct operations and meet other state and federal requirements such as record retention laws. Privacy legislation should focus solely on personal information that directly identifies a person or can reasonably be used to identify a person.

In September 2018, C_TEC led efforts by the U.S. Chamber of Commerce to be the first national trade association to release privacy principles[76] and model privacy legislation[77] after the CCPA was signed into law.

74. https://americaninnovators.com/wp-content/uploads/2020/10/CTEC_RepFedPrivacyProposals_v1-1.pdf
75. https://americaninnovators.com/wp-content/uploads/2020/10/CTEC_DemFedPrivacyProposals_v1.pdf
76. https://www.uschamber.com/sites/default/files/9.6.18_us_chamber_-_ctec_privacy_principles.pdf
77. https://www.uschamber.com/sites/default/files/uscc_dataprivacymodellegislation.pdf

C_TEC calls on Congress to pass national privacy legislation that gives consumers the right to know how data is used, collected, and shared; delete personal information; and opt out of the sharing of personal data that does not have a legitimate purpose.

National privacy legislation should incorporate the following principles:

- **One National Framework:** Consumers and businesses benefit when there is certainty and consistency on regulations and enforcement of privacy protections. They lose when they must navigate a confusing and inconsistent patchwork of state laws. While the United States already has a history of robust privacy protections, Congress should adopt a strong pre-emptive federal privacy framework on matters concerning data privacy in order to provide certainty and consistency to consumers and businesses alike.

- **Risk-Focused and Contextual Privacy Protections:** Privacy protections should be considered in light of the benefits provided and the risks presented by data and by the manner in which it is used. These protections should be based on the sensitivity of the data and informed by the purpose and context of its use and sharing. Likewise, data controls should match the risk associated with the data and be appropriate for the business environment in which it is used. For instance, similar to

the CCPA's approach, personal information collected and otherwise used in an employment and business-to-business context should be exempted from the scope of a national privacy law.

A national privacy law should enable legitimate uses and promote uses of data that are a net societal benefit and should not hamper critical data processing. For example, privacy legislation should:

- Permit commercial credit reporting, a service which can be a lifeline for small businesses during COVID-19.
- Respect First Amendment-protected activities and not inhibit the use and sharing of publicly available data.
- Facilitate activities to combat malicious or illegal activity like financial crimes, fraud, identity theft, and money laundering; prevent shoplifting; and mitigate security threats. The private sector should continue to be able to aid law enforcement in addressing violations of federal, state, and local laws.

- **Transparency:** Businesses should be transparent about the collection, use, and sharing of consumer data and provide consumers with clear privacy notices that businesses will honor. Legislation should not cause the required level of transparency to undermine or eliminate existing trade secret protections.

- **Industry Neutrality:** These privacy principles should be applied consistently to all industry sectors that handle consumer data and are not specific to any subset of industry sectors. The U.S. Chamber of Commerce believes that consumers benefit from the responsible use of data. Technology and the data-driven economy serve as the 21st century's great democratizer by empowering and enabling increased access to educational, entrepreneurial, healthcare, and employment opportunities for all Americans.

- **Flexibility:** Technology evolves rapidly. Privacy laws and regulations should be flexible and not include mandates that require businesses to use specific technological solutions or other mechanisms to implement consumer protections.

In addition, a federal privacy law should incorporate FTC-approved safe harbors, encourage company-led accountability, and other incentives to promote the development of adaptable, consumer-friendly privacy programs. For example, COPPA provides the FTC with the ability to approve and oversee industry-led codes of conduct for children's privacy.[78] And Ohio enacted in 2018 the Ohio Data Protection Act that offers an affirmative defense to security breaches if a company is following an industry standard.[79] Federal privacy legislation should include similar certifications for companies acting in good faith and following FTC-approved guidelines.

- **Harm-Focused Enforcement:** Enforcement provisions of a federal data privacy law should focus on addressing concrete harm to individuals.

- **Enforcement Should Promote Efficient and Collaborative Compliance:** Consumers and businesses benefit when businesses invest their resources in compliance programs designed to protect individual privacy. In order to provide certainty and utilize already-existing expertise, federal data privacy legislation should not be enforced by newly created data protection agencies. The FTC should be the nation's primary enforcer, and other comparable agencies should continue to enforce privacy laws, not a new bureaucracy in the form of a massive new data agency.

  Congress should encourage a collaborative as opposed to an adversarial enforcement system. A reasonable opportunity for businesses to cure deficiencies in their privacy compliance practices before government takes punitive action would encourage greater transparency and cooperation between businesses and regulators. To facilitate this collaboration, a federal privacy framework should not create a private right of action for privacy enforcement, which would divert company resources to litigation that does not protect consumers. Enforcement authority for a federal privacy law should belong solely to the appropriate state or federal regulator.

78. 15 U.S.C. § 6503.
79. https://www.legislature.ohio.gov/legislation/legislation-documents?id=GA132-SB-220

According to a report by the U.S. Chamber's Institute for Legal Reform, a private right of action would have negative impacts and:[80]

- undermine appropriate agency enforcement and allow plaintiffs' lawyers to set policy nationwide, rather than allowing expert regulators to shape and balance policy and protections;
- result in inconsistent and dramatically varied, district-by-district court rulings;
- lead to grossly expensive litigation and staggeringly high settlements that disproportionately do not benefit individuals whose privacy interests may have been infringed; and
- hinder innovation and consumer choice by threatening companies with frivolous, excessive, and expensive litigation, particularly if those companies are at the forefront of transformative new technology.

- **International Leadership:** Congress should adopt policies that promote the free flow of data across international borders for consumer benefit, economic growth, and trade. A national privacy framework should bolster continued U.S. leadership internationally and facilitate cross-border data flows.

  The ability to move data across borders and access information is essential to U.S. companies of every size and in all sectors to compete in an increasingly digital global economy. Worldwide, the flow of data over the internet rose roughly 1,500-fold over the first 2 decades of the 21st century, making digital commerce a powerful driver of global economic growth.[81] This digital revolution is one reason why services trade is expanding 60% more rapidly than the international trade in goods.[82] Today, 63% of U.S. services exports can be delivered digitally to customers overseas.[83] A national

80. https://instituteforlegalreform.com/research/ill-suited-private-rights-of-action-and-privacy-claims/
81. https://unctad.org/en/PublicationsLibrary/der2019_overview_en.pdf
82. https://www.mckinsey.com/featured-insights/innovation-and-growth/globalization-in-transition-the-future-of-trade-and-value-chains
83. https://apps.bea.gov/scb/2019/10-october/pdf/1019-international-services-tables.pdf

privacy law that affirms the U.S.'s open approach to international data transfers will bolster U.S. exports abroad and hasten its post-pandemic economic recovery.

- **Encouraging Privacy Innovation:** Incorporating privacy considerations into product and service design plays an important role in an effective privacy strategy and benefits all consumers. A national privacy framework should encourage stakeholders to recognize the importance of consumer privacy at every stage of the development of goods and services.

  Many established privacy laws, including Europe's GDPR and current federal privacy proposals like Senator Jerry Moran's (R-KS) S. 3456, the "Consumer Data Privacy and Security Act of 2020", recognize the importance of enabling companies to engage in practices like anonymizing and pseudonymizing data.[84] Data privacy legislation should encourage the use of such processes without imposing liability for their use. Safe harbors should encourage the anonymization of such data. Most of the privacy proposals in some way do not impose obligations for deidentified data.

- **Data Security:** As part of any national privacy framework, Congress should include risk-based data security provisions that protect personal information. Keeping information secure is a top industry priority. Security is different for individual businesses and one-size-fits-all approaches are not effective; therefore, companies should have flexibility in determining reasonable security practices. Pre-emptive federal data security requirements would provide consumers with consistent protections and would also reduce the complexity and costs associated with the compliance and enforcement issues resulting from different laws in the 50 states and U.S. territories.

84. Pseudonymized information is data processed in such a manner that it can no longer be attributed to a specific consumer without the use of additional information, provided that such additional information is kept separately and is subject to technical and organizational measures to ensure that the personal information do not identify, or cannot reasonably identify, a natural person.

PRIVACY IN THE TIME OF CORONAVIRUS

The COVID–19 pandemic has spurred concerns about data privacy. According to one survey, "[t]hree in four Americans (75 percent) are thinking more about data privacy issues amid COVID–19, yet most are willing to share their personal information to keep others safe and to return to work faster."[85] With over 7 million Americans infected and 200,000 perishing because of COVID–19, the nation must utilize data to keep Americans safe and provide economic stability. At the same time, companies are working to develop digital tools that protect privacy and monitor the spread of the virus.

Evidence shows that contact tracing can have a significant impact on reducing the transmission of COVID–19.[86] Contact tracing is also central to former Vice President Joe Biden and Senator Kamala Harris' plan to reopen America.[87] Accordingly, most American companies plan to utilize some form of contact tracing to protect their employees during the pandemic.[88]

85. "Most Americans willing to forgo personal data privacy to combat spread of COVID–19 and return to work faster," Security Magazine (June 25, 2020) *available at* https://www.securitymagazine.com/articles/92687–most–americans–willing–to–forego–personal–data–privacy–to–combat–spread–of–covid–19–and–return–to–work–faster.
86. Mijam Kretzschmar and Janneke van de Wijgert, "Impact on delays on effectiveness of contact tracing strategies for COVID–19: a modelling study," *The Lancet* (July 16, 2020) *available at* https://www.thelancet.com/journals/lanpub/article/PIIS2468–2667(20)30157–2/fulltext.
87. https://joebiden.com/reopening/
88. Caroline Humer, "Over half of U.S. companies plan virus contact tracing for employees: survey," *Reuters* (July 22, 2020) *available at* https://www.reuters.com/article/us–health–coronavirus–usa–contacttracing/over–half–of–u–s–companies–plan–virus–contact–tracing–for–employees–survey–idUSKCN24N2SN.

Several proposals for protecting privacy related to COVID-19 have been proposed in Congress.[89] Additionally, states like California considered legislation that could have exposed companies working to protect employees to lawsuits.

Lawmakers can protect sensitive health data by enacting robust national privacy legislation. We strongly believe that federal legislation should not supplant the well-established and workable HIPAA privacy and security rules which have been a cornerstone in protecting the collection, use, and disclosure of protected health information. States and federal legislators should avoid imposing mandates that would make it difficult for companies and schools acting in good faith to return to work. For example, privacy rules should generally exclude data held by companies about employees but in particular should enable companies to retain data necessary to keep the workplace safe. For example, California's legislature and Governor recognized the importance of differentiating the treatment of consumer and employee data by enacting AB 1281[90] which would exempt certain employee data from enforcement under the CCPA.

Finally, research will be critical to developing treatments and eventually a vaccine for COVID-19. Comprehensive privacy legislation should enable companies to continue conducting research and measurement under secured methods without incurring liability.

89. https://americaninnovators.com/wp-content/uploads/2020/09/CTEC_COVID_Side-by-Side_v4.pdf
90. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200AB1281

UNITED STATES LEADERSHIP IN ARTIFICIAL INTELLIGENCE

INTRODUCTION

The continued advancement of artificial intelligence (AI) technologies promises to be a force for good to improve human productivity, promote data-driven innovation, and expand economic and other opportunities for all of society. Over the course of a few short years, the perception of AI has transformed from a futuristic concept to real-world applications in our workplaces, schools, and daily lives.

While there is no singular, agreed upon definition, AI generally involves the simulation of intelligent human behaviors—such as problem-solving, speech, visual recognition, and other functions—by computers systems and machines. Rather than wholly displacing human functions, AI technologies are mainly designed to assist the everyday tasks of individuals, businesses, and governments.

AI is already having a major impact on certain industries ranging from healthcare to transportation and will ultimately affect businesses and workers in every sector of the

economy. A report from McKinsey & Company found that AI is projected to add $13 trillion to global economic activity by 2030, representing a 16% increase in gross domestic product (GDP).[91] Also, AI applications can provide significant benefits to all levels of government such as improving the delivery of public services and enabling more efficient government operations.

Despite these benefits, policymakers face two primary sets of challenges arising from AI. First, how does the United States maintain its global leadership position on AI vis-à-vis our global competitors? Second, how can we mitigate any risks stemming from AI to engender trust in the technology?

The United States is already facing stiff competition when it comes to global AI leadership. China, for example, has charted a course to become an "AI superpower" by 2030 and is investing billions of dollars in research and AI startups, and continues to compile data from its citizens that will support its AI systems.[92] The European Union (E.U.) is set on taking a lead in writing the rules of road for regulating AI.

The U.S. has several competitive advantages to leading the world in AI. Our educated workforce, world-class universities, private sector investment, and system of intellectual property protections are unrivaled on the world stage. Policymakers and the private sector in the United States must work together to draw upon these resources over the next decade to sustain and grow our competitive advantages.

Fostering public trust in AI technologies is critical to advance the responsible development, deployment, and use of AI. Given its disruptive nature and dependence on the collection and use of data, some AI applications can potentially pose a risk to individuals. As AI technologies continue to proliferate through the public and private sectors,

91. Jacques Bughin et al., "Notes from the AI frontier: Modeling the impact of AI on the world economy," *McKinsey Global Institute* (Sept. 4, 2018), *available at* https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Artificial%20Intelligence/Notes%20from%20the%20frontier%20Modeling%20the%20impact%20of%20AI%20on%20the%20world%20economy/MGI-Notes-from-the-AI-frontier-Modeling-the-impact-of-AI-on-the-world-economy-September-2018.ashx.
92. Thomas Davenport, "China is overtaking the U.S. as the leader in artificial intelligence," *MarketWatch* (March 7 2019), *available at* https://www.marketwatch.com/story/china-is-overtaking-the-us-as-the-leader-in-artificial-intelligence-2019-02-27.

they must be utilized in a manner that promotes transparency, fairness, robustness, explainability, and accountability. The speed at which AI applications are being integrated into the global economy and society means that governments alone will not be able to create a trustworthy environment. Government at all levels must partner with the private sector, academia, and the general public to navigate and address concerns associated with AI. Fortunately, to date many such forums have been established to take on these challenges and ensure that AI benefits individuals across the United States and respects human rights and individual privacy.

As AI technologies continue to proliferate through the public and private sectors, they must be utilized in a manner that promotes transparency, fairness, robustness, explainability, and accountability.

For the last year, C_TEC has worked closely with the private sector and all levels of government to promote the responsible advancement of AI technologies, and last September the Chamber released comprehensive artificial intelligence policy principles.[93] To address the challenges and opportunities posed by AI, C_TEC proposes that policymakers consider policy recommendations that fall into five categories: strategic planning and American leadership, research and development, open government data and models, standards development, and responsible regulation of AI applications.

93. See U.S. Chamber of Commerce Principles on Artificial Intelligence (Sept., 2019), *available at* https://www.uschamber.com/sites/default/files/chamber_ai_principles_-_general.pdf.

COMPREHENSIVE ENGAGEMENT ON AI ACROSS THE FEDERAL GOVERNMENT

As countries seek to harness AI to successfully compete economically, technologically, and militarily, American global leadership in AI is not guaranteed. It is therefore essential that the United States retain its edge in AI through policies that are pro-growth and imbued with American values. Considering that AI touches a wide range of sectors and a diverse set of stakeholders, engagement on AI-related issues and integration of AI-focused technologies requires comprehensive planning, multi-stakeholder engagement, and sustained commitment to leverage AI in government.

In recent years, many countries have taken significant strides to achieve these goals. Close to 50 countries have developed national AI strategies that prioritize resources and take a whole-of-government approach to compete more effectively in the AI race.[94] [95]Several of these include:

- **China**—The Chinese government has put forward a strategy, the *New Generation Artificial Intelligence Plan*, for China to become the global leader in AI by the year 2030, with a goal of making the AI industry in China worth $150 billion. China is already home to some of the world's largest technology companies, which work closely with the government to invest in AI technologies and to collect significant amounts of data to power the development of AI applications. The Chinese government is also open about its view of AI as a means to increase the country's military and geopolitical influence over the next decade.

94. Global AI Strategy Landscape, Holon IQ. *Accessible at* https://www.holoniq.com/wp-content/uploads/2020/02/HolonIQ-2020-AI-Strategy-Landscape.pdf.
95. OECD Policy Observatory. *Accessible at* https://oecd.ai/

- **Russia**—Russian President Vladimir Putin has stated his belief that the country that "becomes the leader in [AI] will become the ruler of the world."[96] Whether or not that is the case, Russia is serious about developing its AI capabilities, particularly from a military standpoint. The country wants 30% of its military equipment to be robotic by 2025 and Putin has put forward Russia's National Strategy for the Development of Artificial Intelligence, which outlines the country's AI development plans for the next decade.

- **European Union**—While several individual European countries are pursuing their own AI strategies, the European Commission (EC), through its Horizon 2020 program, has increased its AI investment to roughly €1.5 billion.[97] Under President Ursula von de Leyen, the European Commission has prioritized digital transformation, including through the formulation of an "EU Strategy for Data" and the publication of a white paper on artificial intelligence that will serve as the basis for future legislation.

The United States has taken some important steps to demonstrate a government-wide commitment to AI during both the Obama and Trump administrations. In October 2016, the Obama Administration's White House Office of Science and Technology Policy ("OSTP") released a detailed report analyzing the key issues related to AI and provided 23 policy recommendations on next steps to ensure the responsible development and use of AI technologies.[98] The Obama Administration also released reports on a comprehensive AI research and development strategy and on the impact of AI and automation on labor markets.[99]

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96. Kathleen Walch, "Why the Race for AI Dominance is More Global than You Think," *Forbes* (February 2020), *available at* https://www.forbes.com/sites/cognitiveworld/2020/02/09/why-the-race-for-ai-dominance-is-more-global-than-you-think/#3141b178121f.
97. AI4EU consortium, https://www.ai4eu.eu/,
98. See "Preparing for the Future of Artificial Intelligence," (Oct. 2016), *available at* https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/preparing_for_the_future_of_ai.pdf.
99. See "The National Artificial Intelligence Research and Development Strategic Plan," (Oct. 2016), *available at* https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/national_ai_rd_strategic_plan.pdf; "Artificial Intelligence, Automation, and the Economy," (Dec. 2016), *available at* https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/Artificial-Intelligence-Automation-Economy.PDF.

The Trump Administration has also made AI a priority through the promulgation of Executive Order 13859, Maintaining American Leadership in Artificial Intelligence, which prioritized federal engagement in areas including education and workforce, standards, research and development, and responsible regulation of AI.[100] In January 2020, the Office of Management and Budget ("OMB") issued a draft memorandum providing guidance to federal agencies on the regulatory approach towards AI.[101] The OMB memorandum came on the heels of the 2019 report from the National Institute of Standards and Technology ("NIST")[102] which called for identifying key AI standards and expanded public-private partnerships.

Finally, Congress has increasingly expressed interest in ensuring that the United States has a comprehensive AI strategy. The FY2019 National Defense Authorization Act established the National Security Commission on Artificial Intelligence ("NSCAI") to study and provide recommendations on accelerating the responsible use of AI in the national security space.[103] This year, lawmakers reintroduced the Fundamentally Understanding the Usability and Realistic Evolution of Artificial Intelligence ("FUTURE of AI") Act, a bipartisan and bicameral legislation that established a multi-stakeholder advisory committee to address key issues arising from greater adoption of AI technologies.[104] Also Also, this fall, Representatives Will Hurd and Robin Kelly introduced a concurrent resolution calling for a national AI strategy.[105]

100. E.O. 13859 "Maintaining American Leadership in Artificial Intelligence" (February 2019), *available at* https://www.federalregister.gov/documents/2019/02/14/2019-02544/maintaining-american-leadership-in-artificial-intelligence
101. Draft Memorandum to the Heads of Executive Departments and Agencies, "Guidance for Regulation of Artificial Intelligence Applications," 85 Fed. Reg. 1825 (Jan. 13, 2020) ("OMB AI Guidance")
102. U.S. Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools, National Institute of Standards and Technology, (August 2019), *available at* https://www.nist.gov/system/files/documents/2019/08/10/ai_standards_fedengagement_plan_9aug2019.pdf
103. National Security Commission on Artificial Intelligence, *available at* https://www.nscai.gov/home.
104. FUTURE of Artificial Intelligence Act, S. 3771, 116th Cong. (2020).
105. Mila Jasper, "Hurd, Kelly Introduce Resolution to Encourage Governmentwide Vision of Artificial Intelligence," *Nextgov* (Sept. 23, 2020), *available at* https://www.nextgov.com/emerging-tech/2020/09/hurd-kelly-introduce-resolution-encourage-governmentwide-vision-artificial-intelligence/168655/.

These actions, among others, represent key steps for how the United States can take the lead in AI and to help our economy maintain a competitive edge. However, C_TEC believes that further actions are necessary to sustain a comprehensive and whole of government approach to successfully address AI's long-term challenges and opportunities.

RECOMMENDATIONS

A comprehensive national AI strategy spearheaded by the OSTP should be developed and updated regularly.

- Building off the existing work of the current and previous administrations, Congress should direct the administration to develop a regularly updated national AI strategy. The development of the strategy should be spearheaded by OSTP, with consultation from public and private stakeholders, and should be centered around American values such as the need for trustworthy AI. At a minimum, the strategy should include components related to workforce, education, research and development, standards, and national security and foreign policy considerations.

The Chamber supports a number of multi-stakeholder initiatives that are intended to ensure a wide spectrum of stakeholder input regarding the development of AI. Some of these include:

- The NSCAI, which was established by Congress in 2019 to "consider the methods and means necessary to advance the development of artificial intelligence, machine learning, and associated technologies to comprehensively address the national security and defense needs of the United States." The NSCAI is expected to release final recommendations in March 2021.

- The FUTURE of AI Act of 2020 (S. 3771/H.R. 7559), which would require the Secretary of Commerce to form a Federal advisory committee consisting of a diverse range of stakeholders to study and issue recommendations on high priority AI-related issues.

Policymakers should support the development and implementation of government-centric initiatives, which demonstrate and accelerate U.S. leadership in AI through government adoption, at all levels, of AI applications.

- Congress should enact and ensure the effective implementation of the AI in Government Act (H.R. 2575/S. 1363), which would increase coordination amongst Federal agencies on issues related to AI and encourage the Federal government to develop ways to use AI responsibly and to benefit the general public.

A COMMON-SENSE REGULATORY APPROACH FOR AI APPLICATIONS

Like any emerging technology, AI can pose a number of risks and raises novel legal and regulatory issues. However, unlike most emerging technologies, AI has a diverse number of applications, such as automated vehicles, medical devices, and consumer lending tools, which presents a wide range of different risk levels. In general, existing regulations are likely to apply to AI technologies, such as the National Highway Traffic Safety Administration's Federal Motor Vehicle Safety Standards for automated vehicles and the Fair Credit Reporting Act's adverse action notices, but further interpretive guidance may be required to apply existing laws and regulations in an AI context. The same principle applies to the state level; the McCarran-Ferguson Act empowers states to regulate the practices of the insurance industry in the United States to prevent unfair trade practices and anti-competitive pricing and underwriting.

It would be both challenging and ill-advised to impose a one-size-fits all approach to regulating AI applications. Instead, policymakers should carefully consider a variety of approaches to properly mitigate any risks stemming from AI applications, not just regulations. For example, sector-specific guidance or frameworks, voluntary consensus-based standards, pilot programs, and safe harbors can all serve as effective alternatives to new regulations.

The United States recently took an important step in the right direction on this issue. Last January, OMB published a draft memorandum on the Guidance for Regulation

of Artificial Intelligence Applications ("OMB AI Guidance") that serves as an effective framework to evaluate risks stemming from AI applications and provides for a consistent, government-wide approach.[106] Considering OMB's responsibility to review all executive agency regulatory actions and formulate government-wide regulatory policy, OMB will play a critical role in laying the path forward on AI regulatory issues.

It would be both challenging and ill-advised to impose a one-size-fits all approach to regulating AI applications. Instead, policymakers should carefully consider a variety of approaches to properly mitigate any risks stemming from AI applications, not just regulations.

American leadership has proven essential in promoting common sense approaches to AI governance in multilateral forums abroad, including the Organization for Economic Cooperation and Development, the Global Partnership on AI, the G7, and the G20. At the same time, the United States is at significant risk of failing to write the rules of road for AI. Most prominently, the E.U. has taken a series of substantial actions to lead the world in AI governance. In 2018, the European Commission formed a High-Level Expert Group on Artificial Intelligence, which subsequently issued substantial recommendations on ethics, policy, and investment. In early 2020, the European Commission issued a "White Paper on Artificial Intelligence—A European Approach to Excellence and Trust"

106. OMB AI Guidance.

that outlines options for governing AI applications. These proposals include a sweeping categorization of many AI applications as "high risk," a conformity assessment regime, and requirements on training data, among other proposals. The White Paper, which the Chamber provided substantial comments on, will serve as the basis of formal legislation, expected in early 2021. [107]

Ceding ground to others around the globe would adversely impact American competitiveness and limit the ability for innovators to develop and deploy novel AI applications abroad. Given the cross-border nature of the digital economy, the United States should play a leadership role in advancing an AI regulatory framework that supports AI innovation while protecting vital public interests.

The following recommendations highlight several key overarching principles to regulate AI applications, strengthen OMB's role in AI regulation, engage internationally, and express concern with proposals that would hinder AI innovation.

RECOMMENDATIONS

Policymakers should adhere to a pro-innovation regulatory framework that effectively balances any risks stemming from AI with the substantial benefits that AI brings to the American people. When weighing policy options, policymakers should carefully consider the following principles of sound AI regulation:

- When appropriate, preference should be given to informal regulatory approaches such as sector-specific policy guidance and frameworks, pilot programs and experiments, and voluntary consensus standards. These governance mechanisms should be considered first before advancing less flexible, more interventionist approaches, such as rulemakings or new laws.

- Account for existing legal and regulatory frameworks that can be effectively applied to a particular AI application and provide interpretive guidance, as required. Laying new, and potentially unnecessary, legal requirements on top of existing ones

107. Evangelos Razis, "Our Response to Europe's AI Proposals," *Above the Fold* (June 18, 2020), *available at* https://www.uschamber.com/series/above-the-fold/our-response-europe-s-ai-proposals.

could create confusion for businesses, consumers, and regulators. For example, some sectors, such as insurance rating and underwriting, have a historical and robust legal framework at the state level that would effectively apply to AI.

- Prevent a patchwork of state and local laws regulating AI applications, which would hinder business innovation and create uncertainty for consumers.

- Ensure that legal requirements are risk-based and focused on concrete and empirical harms, as well as the likelihood and severity of those harms. Risk is complex, so it would be inappropriate to create simplistic "high risk" v. "low risk" categories. Additionally, policymakers should focus policy objectives on risk mitigation efforts, rather than pursuing the difficult and arguable impossible task of wholesale elimination.

The OMB AI Guidance should serve as the basis to consider how best to regulate AI applications. OMB should also take further steps to ensure a consistent approach across the federal government.

- All federal agencies, including independent agencies, should implement relevant regulatory efforts align with the OMB AI Guidance. Also, OMB should consider requesting updated agency implementation plans on a periodic basis as new AI use cases arise and regulatory barriers are identified.

- OMB should consider providing guidelines to federal agencies to further define and assess the levels of risk posed by AI applications. Guidelines would help agencies better understand risk, prevent wide disparities in how risks are evaluated at different agencies, and ultimately provide certainty for the stakeholders in the AI ecosystem. Those guidelines should be specific and narrowly tailored and include a governance process to assess and manage risk. Any guidelines should also consider factors such as safety and human life, impact on critical infrastructure, sector-specific concerns such as impacts on financial market stability, and the capability to cause concrete harm to individuals. Finally, it should take a holistic approach to risk that considers the risk of the AI application compared to a baseline (non-AI) scenario.

- OMB should assess and consider modifying regulatory cost-benefit analyses to ensure that regulators compare an AI application to systems, including human-based systems, already in use, and account for the opportunity cost of not implementing an AI system.

Encourage robust U.S. diplomacy to promote an open, evidence-based, and light-touch approach to AI governance.

- Relevant federal agencies such as the Department of State, the Department of Commerce, and the U.S. Trade Representative should exercise American AI leadership internationally and should consider two objectives. First, advance American values on AI, and second, ensure that foreign AI governance regimes do not serve as barriers to trade or inhibit the development of AI applications in the United States. Tools to achieve these objectives include state-of-the art trade agreements, engaging in multilateral forums and bilateral dialogues, and supporting the adoption and mapping of American approaches on other jurisdictions.

Oppose onerous and counterproductive regulatory approaches, including:

- Government-mandated algorithmic impact assessments. These assessments are duplicative or in conflict with ongoing standards work at NIST and other entities. Moreover, some industry stakeholders have voluntarily adopted similar assessments. Voluntary efforts by industry is a more appropriate approach than government-mandates.

- Permanent bans or temporary moratoriums on specific AI applications. Policymakers should instead focus on mechanisms to mitigate potential risks from those applications.

STRENGTHENING FEDERAL AI RESEARCH AND DEVELOPMENT

Over the last half-century, major technological breakthroughs including the internet, search engines, and Global Positioning System ("GPS") have all been supported by public-private partnerships and Federal R&D investment. AI is likely to be equally as a transformational technology, and its proliferation will have countless applications across all industries. As such, Congress and the Federal government should prioritize R&D investments in AI in collaboration with the private sector.

While AI R&D has gained attention and become a priority for Congress and the Obama and Trump Administrations, the level of government R&D in the United States remains a concern compared to other countries, specifically China. A recent report noted that China's share of the growth in global R&D spending now outpaces the United States, and China is on track to eclipse the U.S. in terms of total R&D investments.[108] Funding for startups in China also eclipsed the U.S in 2018, with Chinese firms making up 48% of the total money raised for AI startups during that year.[109] According to a 2019 report from Bloomberg, annual unclassified Federal spending on AI R&D was $4.9 billion, including about $850 million in AI research combined between the Department of Energy ("DOE"), National Science Foundation ("NSF"), and NIST.[110]

108. Bipartisan Policy Center "Cementing American Artificial Intelligence Leadership: AI Research & Development (August 2020), *available at* https://bipartisanpolicy.org/report/ai-research-development/
109. CB Insights "China is Starting to Edge Out the U.S. in AI Investment" (February 2019), *available at* https://www.cbinsights.com/research/china-artificial-intelligence-investment-startups-tech/
110. Chris Cornillie, "Finding Artificial Intelligence Money in the Fiscal 2020 Budget," *Bloomberg Government* (Mar. 28, 2020), *available at* https://about.bgov.com/news/finding-artificial-intelligence-money-fiscal-2020-budget/.

Policymakers have offered a number of proposals to increase federal investments in AI R&D. The Trump Administration's Fiscal Year 2021 Budget proposes doubling non-defense AI R&D spending by 2022.[111] In addition, there are a number of bills introduced and in Congress that would authorize additional funding and programs for AI R&D activities. Most notably, Division E of the House of Representative's FY21 National Defense Authorization Act includes H.R. 6216, the National Artificial Intelligence Initiative Act, a bipartisan legislation that authorizes new AI R&D spending at NIST, the DOE, and NSF, in addition to several other provisions.[112]

RECOMMENDATIONS

Develop a strategy to coordinate Federal AI research and development investments.

- Considering numerous federal agencies and entities are engaged in AI research and development, OSTP should develop and implement a strategy to effectively prioritize and coordinate Federal AI R&D activities. This should build on the Obama Administration's 2016 National Artificial Intelligence Research and Development Strategic Plan and the Trump Administration's American Artificial Intelligence Initiative. Moreover, policymakers should maximize interagency coordination as necessary to effectively leverage federal AI investments.

Prioritize public-private partnerships to advance AI research and development.

- The United States private sector leads the world in research and development of trustworthy AI. The Federal government should leverage existing and future AI research and development activities with industry through public-private partnerships to efficiently allocate resources and facilitate cross-pollination of ideas and approaches. Policymakers should consider tools such as pilot programs, public-private institutes, and regulatory "sandboxes" to foster these types of partnerships.

111. Jory Heckman, "Trump budget projects doubling federal AI research spending by FY 2022," *Federal News Network* (Feb. 11, 2020), *available at* https://federalnewsnetwork.com/artificial-intelligence/2020/02/trump-budget-projects-doubling-federal-ai-research-spending-by-fy-2022/.
112. National Artificial Intelligence Initiative Act, H.R. 6216, 116th Cong. (2020).

Strengthen Federal government AI research and development capacity.

- Congress should bolster the ability of Federal agencies to conduct AI R&D activities by increasing resources for existing programs, authorizing new programs, and providing sufficient and sustained increases in appropriations for these activities. While many agencies will engage in AI research and development, policymakers should prioritize resources for the following agencies to be leaders in AI research and development: DOE, NSF, NIST, and the Department of Defense.

Establish and sustain a National AI Research Cloud.

- Policymakers should establish and sustain a National AI Research Cloud, a public–private partnership that enables industry, academia, and the federal government to share computational resources and datasets to conduct cutting-edge AI research. As a first step, Congress should enact the National AI Resource Task Force Act of 2020 (H.R. 7096/S. 3890), which establishes a task force that includes representatives from industry, federal agencies, and academia to examine how best to establish a national AI cloud.

LEVERAGE FEDERAL DATA AND MODELS TO ADVANCE AI

Effective AI applications often require a substantial quantity of data to properly train the algorithm. While the private sector possesses a significant amount of data necessary for this purpose, governments also collect and retain data such as population demographics, traffic and transportation patterns, crime metrics, emergency response information, agricultural statistics, and public health information. This data can be leveraged by the private sector and other stakeholders to develop innovative AI tools and address national and global challenges, such as combatting COVID–19, bettering healthcare outcomes for veterans, and improving climate change models.

Unfortunately, many barriers exist to collecting and processing government data, including on the quality, usability, and availability of the data. Moreover, there can be sig–

nificant privacy, security, and other concerns with utilizing some types of data, such as health data. In 2019, Congress took a crucial step to address these barriers through the enactment of the Foundations for Evidence-Based Policymaking Act, which included in the OPEN Government Data Act as Title II of the legislation. The OPEN Government Data Act primarily requires federal agencies to identify and publish their datasets in a machine-readable format.[113]

While the OPEN Government Data Act is critical, policymakers can do more to ensure the full and continued implementation of the Act, increase the accessibility of other resources such as AI models, and incentivize state and local governments to make their data sets more accessible and usable.

RECOMMENDATIONS

Continue existing efforts to increase accessibility to Federal government data.

- Federal agencies should continue existing efforts to increase data quality and availability by ensuring that datasets are accessible in a structured, commonly used, and machine-readable format. This includes the further implementation of the OPEN Government Data Act.

- Federal agencies should prioritize including activities to increase accessibility and quality of federal government data in their annual budget requests to Congress. Likewise, Congress should provide sufficient appropriations to allow for federal agencies to continuously increase the accessibility and quality of their data.

- In collaboration with private sector stakeholders, policymakers should encourage the development of mechanisms to facilitate the efficient and voluntary sharing of public and private sector data. As part of this effort, federal agencies should engage users of open government data to identify opportunities to improve the availability and quality of the data and models and provide a single point of contact at the agency on open data related issues.

113. *See* Title II of Foundations for Evidence-Based Policymaking Act, Pub.L. 115–435.

Policymakers should actively consider additional steps to better use government resources to facilitate AI innovation. These include:

- Leverage federal resources to incentivize opening up state and local government data and models. This could include providing federal technical expertise and/or providing grants and incentives to state and local governments.

- In addition to increasing accessibility to government data, policymakers should encourage federal agencies to disclose non-sensitive and unclassified AI models.

ENSURE UNITED STATES LEADERSHIP IN AI STANDARDS

The Chamber continues to support the development of voluntary, consensus-based standards, which are an effective way to accelerate the responsible use of AI throughout the global economy. Voluntary standards are preferable to regulatory mandates, providing both the government and private sector the necessary flexibility to adapt to rapidly evolving technological developments, commercial deployments, and new and emerging business models.

For robust voluntary standards to develop and be effective, the views of a diverse spectrum of stakeholders must be incorporated. Accordingly, the Chamber has supported several domestic and international forums that are intended to create stakeholder consensus and foster trustworthy AI. These forums can also help identify any gaps or flaws in existing systems and correct them in a more efficient manner than governments can do on their own.

In 2019, NIST finalized a "U.S. Leadership in AI: A Plan for Federal Engagement in Developing Technical Standards and Related Tools" (hereafter, "the Plan") that was developed in response to Executive Order 13859 and was informed by significant public and private sector input. The Plan notes that "standards should be complemented by related tools to advance the development and adoption of effective, reliable, robust, and

Voluntary standards are preferable to regulatory mandates, providing both the government and private sector the necessary flexibility to adapt to rapidly evolving technological developments, commercial deployments, and new and emerging business models.

trustworthy AI technologies."[114] The NIST plan provides a well-informed roadmap for how the federal government can successfully help AI technologies develop. In addition, NIST has held a series of workshops on critical topics including bias and trustworthiness, and released a draft publication on AI explainability in August 2020.[115]

Congress has also expressed significant interest in strengthening NIST and advancing AI standards. Several bills have been introduced and are at various stages in the legislative process that, in general, direct the administration and NIST to prioritize standards and authorize programs to engage in additional AI standards activities.[116]

The following recommendations build upon and support a number of proposals that bolster the federal government's work in supporting the development of AI-related standards and ensure that these standards can serve as an example for other jurisdictions.

114. Plan for Federal Engagement in Developing Technical Standards and Related Tools.
115. Jonathon Phillips et al., Four Principles of Explainable Artificial Intelligence (NISTIR 8312), the National Institute of Standards and Technology (Aug. 2020), *available at* https://nvlpubs.nist.gov/nistpubs/ir/2020/NIST.IR.8312-draft.pdf.
116. See the National Artificial Intelligence Initiative Act (H.R. 6216) and the Advancing Artificial Intelligence Research Act of 2020 (S. 3891).

RECOMMENDATIONS

Policymakers should ensure that NIST has the resources and strategic direction necessary to advance United States leadership in AI standards

- The Chamber strongly supports the NIST's Plan and believes that NIST should regularly update the Plan to include timelines on key lines of work and modify the contents of the Plan based on ongoing consultations with stakeholders.

- Congress and Federal agencies should ensure that NIST continues to implement the Plan and should authorize and appropriate additional funding so that NIST can sufficiently execute its standards activities related to AI.

- Congress should direct NIST, in partnership with relevant stakeholders, to develop responsible and ethical AI frameworks. This should include the development of an AI Risk Management Framework, which would be a voluntary, consensus-based process that seeks to mitigate risks throughout the lifecycle of an AI application.

The Federal government should regularly engage in international forums regarding the development of AI standards. Specifically, the Federal government should take the following actions to exercise leadership internationally:

- Create a strategy to demonstrate global leadership in and support initiatives to develop AI standards.

- Devote greater resources to the promotion of industry leadership in the development of standards.

- Play a convening role with the private sector to ensure appropriate industry representation at standards-setting bodies and organizations.

CONCLUSION

AI has the potential to be one of the most transformational technologies in modern history and can help improve the lives of individuals, help businesses become more efficient, and optimize governments' ability to deliver crucial public services more effectively. Yet, in order for those outcomes to be achieved, governments at all levels—domestic and international—must establish appropriate public policies that encourages innovation and promotes trustworthy AI. C_TEC looks forward to continuing our work with policymakers on developing policy solutions to advance the responsible development and deployment of AI applications.

AMERICA'S GOVERNMENT INFORMATION TECHNOLOGY UPGRADE

For government to effectively lead in generating economic growth, it must fully embrace cutting-edge technology and data analytics. The private sector is already doing this,[117] but government can also take steps. Prior to the COVID-19 pandemic both federal and state information technology ("IT") infrastructure woefully lagged the private sector. In fact, during the last decade, government agencies such as the Defense, Treasury, and Veterans' Affairs Departments continued to use legacy hardware and software from over 40 years ago.[118]

117. COVID-19 has brought to light new ways of doing business. For example, outdated laws make it difficult to sign documents in a virtual environment. Legislation such as the E-Sign Act and Secure Notarization Act are steps being taken to address this issue.
118. Dr. Gregory S. Dawson, "A Roadmap for IT modernization in Government," at 11 (2018) *available at* http://www.businessofgovernment.org/sites/default/files/A%20Roadmap%20for%20IT%20Modernization%20in%20Government_1.pdf.

According to a report from the Government Accountability Office,[119]

> "The federal government plan[ned] to spend over $90 billion in fiscal year 2019 on IT. About 80 percent of this amount is used to operate and maintain existing IT investments, including aging (also called legacy) systems. As they age, legacy systems can be more costly to maintain, more exposed to cybersecurity risks, and less effective in meeting their intended purpose."

As state and federal governments focus their attention on maintaining outdated systems, the challenge grows for them to innovate and meet the demands of new crises. The COVID-19 pandemic has further exacerbated and brought to light the need to institute a robust strategy to upgrade government technology systems. On a federal level for example, the Small Business Administration's loan processing system crashed twice in April.[120] States have also not been immune from problems stemming from archaic data systems. For example, state agencies have struggled to implement relief to citizens in the following ways:[121]

- Connecticut's website was unable to handle more than 8,300 unemployment benefits applications, "a fraction of the applications coming in."
- New Jersey had to put out a request for volunteers who know programming language from the 1950s that runs the state's employee benefits system.
- In the District of Columbia, it took weeks to remove outdated programming language that held up distributing unemployment benefits.

119. Government Accountability Office, "Information Technology: Agencies Need to Develop Modernization for Critical Legacy Systems," at 1 (June 2019) *available at* https://www.gao.gov/assets/700/699616.pdf.
120. Alec Stapp, Michael Mandel, Elliott Long, "What It Takes: Modernizing Government IT to Meet 21st Century Challenges," Progressive Policy Institute (September 25, 2020) *available at* https://www.progressivepolicy.org/publication/what-it-takes-modernizing-government-it-to-meet-21st-century-challenges/.
121. Policy Papers, "Modernizing Government Information Technology," (May 15, 2020) *available at* https://www.rpc.senate.gov/policy-papers/modernizing-government-information-technology-.

Congress has attempted in the past to address the issue of outdated government technology. President Trump in 2018 signed into law the National Defense Authorization Act, which included the Modernizing Government Technology Act ("MGT Act").[122] The MGT Act authorization the creation of IT system modernization and working capital funds for specific government agencies to improve, retire, or replaced existing systems; to transition legacy systems to cloud computing and "other innovative commercial platforms and technologies"; and to assist efforts to improve information security. The MGT Act also established a $25 million Technology Modernization Fund.

In March 2020, Congress responded to the massive challenges presented by the emerging COVID-19 pandemic by passing the Coronavirus, Aid, Relief and Economic Security Act ("CARES Act") to provide financial assistance to government agencies, small businesses, and provide temporary individual assistance.[123] Funding in the CARES Act for IT modernization has been described as "relatively modest, such as $500 million for public health data modernization [and] $12 million to digitize federal employee retirement processing currently done by hand."[124]

America is home to the world's leading technology companies and its government should draw upon these resources. Congress should appropriate funding to transform the types of technology government agencies rely upon to those such as cloud computing, state of the art data centers, artificial intelligence, and an enhanced private sector-led communications infrastructure that connects all Americans. A long-term and not a piecemeal year-by-year approach is necessary for the IT modernization moonshot needed to help government agencies tackle 21st century public health, employment, and security challenges. Congress should significantly expand IT modernization capital funds and the Technology Modernization Fund instituted by the MGT Act.

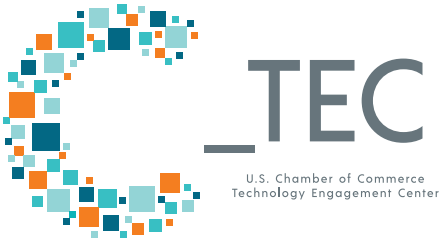
122. Public Law 115-91 §§ 1077-78 (December 12, 2017)
123. Public Law 116-136 (March 27, 2020).
124. Gordon Bitko & David Logsdon, "IT modernization in the time of COVID-19: How government investment in critical IT systems can enhance citizen services," Federal News Network (June 1, 2020) *available at* https://federalnewsnetwork.com/commentary/2020/06/it-modernization-in-the-time-of-covid-19-how-government-investment-in-critical-it-systems-can-enhance-citizen-services/.

Funding alone will not address the government IT modernization gap. Policymakers must facilitate a coordinated plan to ensure that agencies not only utilize resources efficiently but also develop and implement strategic planning around how government IT is procured and integrated into federal operations. Increased collaboration between the private sector and government will be necessary to address emerging needs. Additionally, federal agencies should consider whether commercial off-the-shelf products better equip them as opposed to department-specific solutions. While the efforts of Congress in the past have been laudable, it's time for the federal government to adopt a forward-looking national IT modernization plan that makes the nation more resilient against future crises.

ABOUT

C_TEC

The U.S. Chamber of Commerce is the world's largest business federation representing the interests of more than three million businesses of all sizes, sectors, and regions. Four years ago, the U.S. Chamber of Commerce launched the Chamber Technology Engagement Center (C_TEC) to advance technology's role in strengthening business by leveraging tech innovations that drive economic growth in the United States. C_TEC promotes policies that foster innovation and creativity and sponsors research to inform policymakers and the public.



ABOUT

PERC

PERC is a non-profit (501c3), non-partisan research and development organization headquartered in Durham, NC. Founded in 2002, PERC has undertaken projects in over 25 countries on 6 continents, and has contributed to national policy changes in over 10 countries. PERC's mission is to increase financial inclusion through the responsible use of information and information solutions. Our constituency includes the 45 million Credit Invisibles in the US and the billions worldwide.

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Dr. Turner has worked on projects in over 25 countries on six continents, and is a global thought leader on consumer and commercial credit information sharing. He has worked on projects for the OECD, the Inter-American Development Bank (BID), the International Finance Corporation, the Consultative Group to Assist the Poor, and US AID among others. He also launched the Asia-Pacific Credit Coalition and has collaborated with the Asia Pacific Economic Cooperation (APEC) Business Advisory Council to establish the Asia Pacific Financial Forum (APFF) to promote financial inclusion among the 21 member economies of the APEC. He is a core group member of the APFF and serves as the credit information sharing "Sherpa."

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Moore recently joined PERC Canada. She develops and maintains PERC's information resources on everything from theoretical economic models on credit rationing to government reports on data policy. She contributes quantitative and qualitative data and analysis to PERC reports. She studied International Business and International Relations at McGill University in Canada and Kyoto University in Japan. Moore has past experience in journalism and market research.

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