A TECHNO-ECONOMIC AGENDA FOR THE NEXT ADMINISTRATION

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The next administration needs to place innovation, productivity, and competitiveness at the core of its economic policy. To that end, this report offers a comprehensive techno-economic agenda with 82 actionable policy recommendations.

KEY TAKEAWAYS

- Given the anemic productivity growth of recent years and a hollowing out of advanced technology manufacturing sectors to China, the United States needs a much more robust techno-economic policy agenda.
- That will only happen with presidential leadership. Yet, neither "middle-out" "Bidenomics" nor inward facing "America First" economics is sufficient.
- Regardless of who the next president is, they should set a goal to re-establish unparalleled U.S. national techno-economic power while limiting China's relative advancement.
- This requires policies to support faster productivity growth, a faster pace of innovation and innovation adoption, and a much larger U.S. share of global advanced-industry production.
- To contribute to this effort, this report enumerates 82 specific steps toward such a techno-economic policy agenda, organized around 13 key policy areas.
- The most critical initial step is to create a National Competitiveness Council within the White House, akin to the NSC and NEC. Without that, there is no "nerve center" for this agenda in government.

SUMMARY OF RECOMMENDATIONS

Overall Strategy

1. Establish a National Competitiveness Council.

Budget Policy

2. Support increasing taxes to cover 70 to 80 percent of the budget deficit shortfall to eliminate the budget deficit.
3. Support cutting some spending, especially entitlements to the elderly, to cover around 20 to 30 percent of the shortfall.
4. Increase federal investment by at least $100 billion to $200 billion annually to support enterprise capabilities for innovation, productivity, and competitiveness, and a more robust international techno-economic strategy.

Tax Policy

5. Double the R&D tax credit and restore first-year expensing.
6. Restore first-year expensing on capital equipment.
7. To increase revenues, tax qualified dividends as normal income and establish a modest carbon tax.
8. Institute a “Super Chips” tax credit.

Foreign Policy

9. Create a techno-economic alliance of key partners.
10. Limit foreign aid to nations that don’t play by the rules.
11. Press international aid bodies that the United States supports to adopt similar policies.
12. Operationalize existing allied technology-production and trade alliances.
13. Increase U.S. leadership on tech policy to protect U.S. interests, not just U.S. values.

Trade Expansion

14 Reset and restart America’s bilateral trade agenda.

15 Join the Comprehensive and Progressive Transpacific Partnership Agreement (CPTPP).

16 Renew efforts to make the WTO moratorium on digital duties permanent.

17 Develop a more integrated North American production system.

18 Include measures to reduce border barriers and encourage “innovation corridors” along the border.

19 Develop and promote an “Innovation Trade Agreement” that would have zero tariffs on goods across all high-tech industries.

20 Lead initiatives and negotiate new agreements to build an open, rules-based system for the free flow of data among like-minded partners.

Trade Enforcement

21 Direct the U.S. Trade Representative (USTR) to work with willing allies to develop a full “China Bill of Particulars” report.

22 Ensure new tariffs are reciprocal to our trading partners.

23 Urge Congress to reform Section 337 of the Tariff Act to allow the U.S. International Trade Commission (USITC) to better respond to unfair Chinese imports.

24 Impose export controls judiciously.

25 Develop a new multilateral export control regime.

26 Support multilateral efforts to limit technology transfer to China and other forms of free-riding on U.S. and allied-nation technology.

27 Ramp up efforts to limit Chinese cyber-IP theft and espionage.

28 Increase federal efforts to disrupt the global flow of counterfeits.

29 Broaden the Committee on Foreign Investment in the United States (CFIUS).

30 Urge Congress to institute a tariff floor on rare earth minerals, ideally with U.S. allies.

31 Expand exports to China.

Export Promotion

32 Support EXIM reauthorization and expansion.

33 Use foreign trips as an opportunity to promote U.S. exports.

34 Charge the Commerce Department with developing and integrated national export assistance system.

Regulatory Policy

35 Create a unit within the Office of Management and Budget's (OMB's) Office of Information and Regulatory Affairs (OIRA) to systematically consider how proposed agency regulations impact innovation and competitiveness.

36 Establish an executive order that calls on all agencies to embrace size neutrality when it comes to all federal policies.

37 Create an innovation-friendly AI regulatory approach to artificial intelligence (AI) and promote it globally.

38 Require the Federal Railroad Administration (FRA) to design regulations to support innovation and automation in the commercial freight industry.

39 Require the Federal Aviation Administration (FAA) to expedite its rulemaking on key drone issues.

40 Press other nations to stop free-riding on America for drug development through their drug price controls.

41 Reform the National Environmental Policy Act (NEPA) to allow more building, especially in metropolitan areas.

42 Push back against other nations weakening standards essential patents (SEPs).

43 Stop treating broadband like a public utility.

Antitrust Policy

44 Appoint a Federal Trade Commission (FTC) chair who will withdraw the 2023 DOJ-FTC Merger Guidelines, the Section 5 policy statement, and the Orange Book statement.

45 Continue to ignore enforcement of the flawed Robinson Patman Act (RPA)—or work with Congress to repeal it.

46 Support legislation preventing the FTC from enacting unfair methods of competition rulemakings.

47 Scale back competition enforcement at the FTC.

48 Approve strategic transactions between the defense industrial bases of NATO countries.

49 Support the addition of a competition chapter at the WTO.

Digital Policy

50 Refocus broadband policies on finding and implementing policies that benefit consumers.

51 Appoint agency heads whose interest is innovative, efficient use of the airwaves.

52 Push for passage of federal data privacy legislation.

53 Create a national AI roadmap for adoption.

54 Support state preemption on digital policies.

55 Support expanding Section 230 liability protection to cover AI-based online services.

56 Charge the federal chief technology officer (CTO) with working with agencies to establish digital transformation strategies for industries they affect.

R&D, Technology, and Manufacturing Policy

57 Defend the Bayh-Dole Act.

58 Task the Commerce Department with conducting detailed industry analysis and strategy for key industries, including semiconductors, pharmaceuticals, aerospace, software, machinery, and others.

59 Require the Defense Department to conduct a thorough review of our nation’s defense and dual-use industrial base to identify and ameliorate non-allied foreign dependencies.

60 Support passage of legislation like the CHIPS Act for the biopharmaceutical industry.

61 Launch a joint industry-university-government R&D partnership to reduce the cost of drug development and production.

62 Limit low-wage immigration while enabling immigrants with graduate degrees in physical sciences, computer science, and engineering to remain in the United States.

63 Expand STEM initiatives to include a focus on industrial skills (“STEMI”).

64 Appoint a director of the National Science Foundation (NSF) willing to push the agency to play a stronger role in advancing and commercializing research critical to U.S. advanced-industry capabilities.

65 Support building out the Manufacturing USA network closer to the network of 45 institutes originally intended.

66 Support the establishment of at least one national research institute focused on industrial research related to U.S. advanced-industry competitiveness.

67 Establish a national commission on corporate short-termism.

68 Support the establishment of an advanced manufacturing scale-up capital program.

69 Hold national labs to stronger performance standards for tech transfer to firms in the United States.

70 Ban Chinese funding of research at U.S. universities.

71 Hold universities and colleges accountable for biasing admissions and grading against STEM students.

Clean Energy Innovation Policy

72 Select technologies that have both the possibility of reaching P3 and a substantial impact on emissions.

73 Pressure other nations to boost clean energy R&D.

Government Organization and Operation

74 Set robust AI adoption milestones in federal agencies that result in reduced headcounts.

75 Replace slow and costly legacy government IT systems.

76 Focus on improving service delivery and customer experience.

77 Offer an optional federal electronic identification (e-ID).

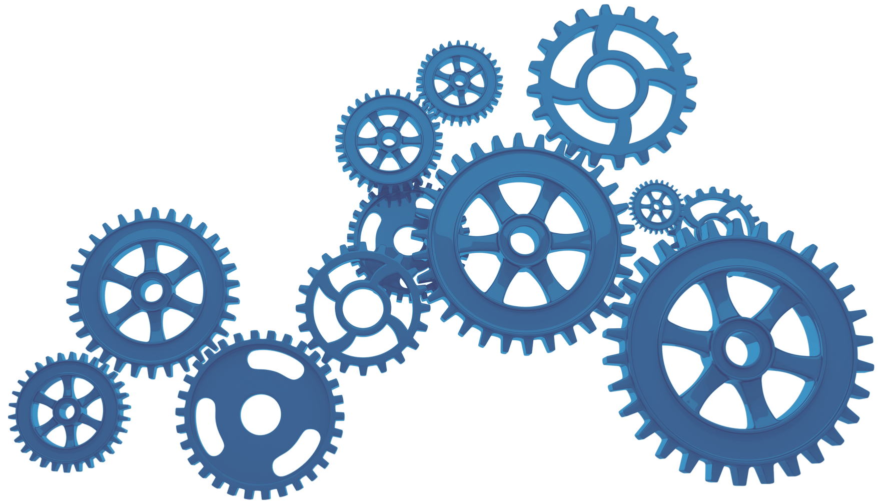
78 Use the federal government as a testbed for piloting new technologies.

79 Restructure the Council of Economic Advisors (CEA) as the Council of Economic and Enterprise Capabilities Advisors (CEECA).

80 Require each major agency to develop an innovation strategy.

81 Hold department deputy secretaries responsible for "cleaning out the cobwebs" so agencies move at a much faster pace.

82 Direct key federal agencies to incorporate productivity growth into their missions.



INTRODUCTION

Given America's poor productivity growth, a deep hollowing out of its advanced technology manufacturing sectors (especially to China), and anemic application of innovation across all sectors of the economy, the United States is in desperate need of a robust techno-economic policy agenda. And this can only happen with presidential leadership and initiative. Both major party candidates want to strengthen America's economy; however, neither Bidenomics (which emphasizes public spending, growing the middle class through redistribution, advancing equity, deconcentrating markets, and driving the "green" transition) nor the "America First" agenda (which emphasizes smaller government, an unease with "Big Tech," deregulation, and higher tariffs) will do the job. And while recent policy initiatives, such as the CHIPS and Science Act, are steps in the right direction, they don't go nearly far enough.

Given America's increasingly polarized politics and ideological policy debates, the choice of who occupies the White House after inauguration day 2025 will have significant implications for the direction of a host of public policy areas. However, regardless of who the next president is, we believe they should make re-establishing unparalleled U.S. national techno-economic power and constraints on China's techno-economic advancement their top goal. This means putting in place an array of policies to support faster productivity growth, a significantly more robust pace of innovation and innovation adoption, and a much larger U.S. share of global advanced-industry production. The Information Technology and Innovation Foundation (ITIF) is releasing this techno-economic policy agenda to help the next administration advance that effort. The agenda is organized around an overall strategy plus 12 key policy areas—82 specific policy recommendations in all—for the administration to both operationalize and urge Congress to enact.

OVERALL STRATEGY

Perhaps the single most important step for the next administration is to establish consensus around the right economic goal: restoring unprecedented U.S. advanced-industry leadership. The aim should not be to restore manufacturing output and jobs per se. Indeed, this could be achieved with much more low-skill, commodity-based manufacturing, but that would not further U.S. techno-economic power.

Similarly, the goal should not be to eliminate the trade deficit per se. For example, this could be achieved by exporting more food and oil and boosting tourism; but again, neither of these supports U.S. techno-economic power.

Nor should the goal be to grow the middle class. If that is achieved with expanded re-distributional policies (either tax breaks or spending increases) that are not merely a short-term middle-class "sugar high," it would take funding away from policies needed to restore U.S. techno-economic power. There is, in fact, only one way to sustainably grow the middle class (as well as the working class and the poor), and that is to boost the rate of productivity growth, ideally to 2.5 to 3 percent a year.

The goal should be to reverse America's loss of techno-economic power to China, as well as to surpass China's continued advancement in advanced industries, to ensure that a decade from now, the United States leads in most advanced industries, both critical and emerging.

A final point: Boosting U.S. techno-economic power cannot be achieved without prosperous large corporations. Rather than the enemy that must be broken up, unfairly regulated, or browbeaten, big, technologically sophisticated corporations are the sine qua non of winning the global technology race, spurring innovation, and driving productivity growth.[1]

RECOMMENDATION 1: ESTABLISH A NATIONAL COMPETITIVENESS COUNCIL

At the end of the day, the problem is not so much knowing what to do, but rather having people in the White House with the incentives and ability to solve America's innovation, productivity, and competitiveness challenges. But we certainly have not seen that during this century. The Council of Economic Advisors is the home for conventional neoclassical economists, focused largely on overall macroeconomic policy. The National Security Council, while having had some focus on these issues, sees them through the lens of national security, intelligence, and foreign policy. And the National Economic Policy team focuses largely on broad domestic economic policy issues, often related to social policy, business regulation, infrastructure, college debt, inflation, and small business.

What is needed is a National Competitiveness Council (NCC) focused on formulating and coordinating advanced-industry competitiveness policy across the federal enterprise. We believe that this is so important that it deserves its own recommendation. The NCC would oversee analysis of U.S. advanced-industry capabilities, especially vis-à-vis China. It would assess Chinese policies designed to erode U.S. advanced-industry leadership. It would identify key sectors needed for U.S. leadership and organize a whole-of-government approach to advance that on the sectoral level (e.g., semiconductors, biopharmaceuticals, aerospace, autonomous systems, AI, etc.) The NCC should be staffed not by economists who focus principally on price-mediated markets, but rather by "productionists": analysts who have a deep understanding of firm, industry, and technology dynamics.

RECOMMENDATIONS 2–4: BUDGET POLICY

From a budget perspective, the U.S. government has largely become an insurer and provider of income support for the elderly, and that crowds out needed investment. As such, unless the budget deficit is significantly reduced, there will be no funding available for critical tax and budget investments, including expanding U.S. military capabilities and the needed expenditures to boost productivity and win the techno-economic competition with China. Absent that, policymaking will be a fight over rearranging the deck chairs.

We are not naïve about the political realities of budget politics. Most American voters want a free lunch and don't mind passing their debt on to their children. They oppose virtually all tax increases and most all spending cuts, especially on entitlements. Republicans refuse to raise taxes. Democrats refuse to cut spending. As a result, true investment—either in the form of direct spending or tax expenditures—is slowly squeezed. China is going in the opposite direction, boosting investment in advanced industries with truly staggering amounts.

The reality is that nothing short of a default on the national debt will likely provide the political cover for the budget "castor oil" that has to be administered. But by the time that happens, we will have suffered from many years of declining needed national investment. But at least the next administration can set the stage for taking needed actions.

> **"Unless the budget deficit is significantly reduced, there will be no funding available for critical tax and budget investments.**

2. **Support increasing taxes to cover 70 to 80 percent of the budget deficit shortfall in order to eliminate the budget deficit.** This should not be done by increasing taxes on business, as America needs strong companies that can invest and compete in global markets—although taxes could be increased by eliminating loopholes in speculation-driven industries such as hedge funds, for instance, through eliminating the carried interest loophole. Higher taxes for wealthy individuals such as billionaires are not unreasonable, as U.S. taxes as a share of gross domestic product (GDP) are 6.3 percentage points lower than the Organization for Economic Cooperation and Development (OECD) average.[2] If taxes were increased to cover 75 percent of the current budget deficit, the United States would still have below-average tax rates.[3]
3. **Support cutting some spending, especially entitlements to the elderly, to cover around 20 to 30 percent of the shortfall.** This can be done in part by indexing Social Security to inflation, not nominal wage growth; reducing benefits received for early retirement (to encourage people to work longer); and raising the minimum retirement age.
4. **Increase investment (direct and tax expenditures) by at least $100 billion to $200 billion annually to support enterprise capabilities for innovation, productivity, and competitiveness, as well as support a more robust international techno-economic strategy.[4]** When we use the term "investment," we don't mean an array of social spending sold with the patina of "investment." Spending on child care, housing, health care, income support, and most transportation infrastructure is not investment in the sense of paying for itself. It is consumption paid for by the government, even if some of it, such as infrastructure, is capitalized. We mean money appropriated now that will have a positive national return on investment (ROI) in net-present-value terms, such as tax incentives to spur business investment, spending for research and development (R&D), and support for advanced manufacturing.

RECOMMENDATIONS 5–8: TAX POLICY

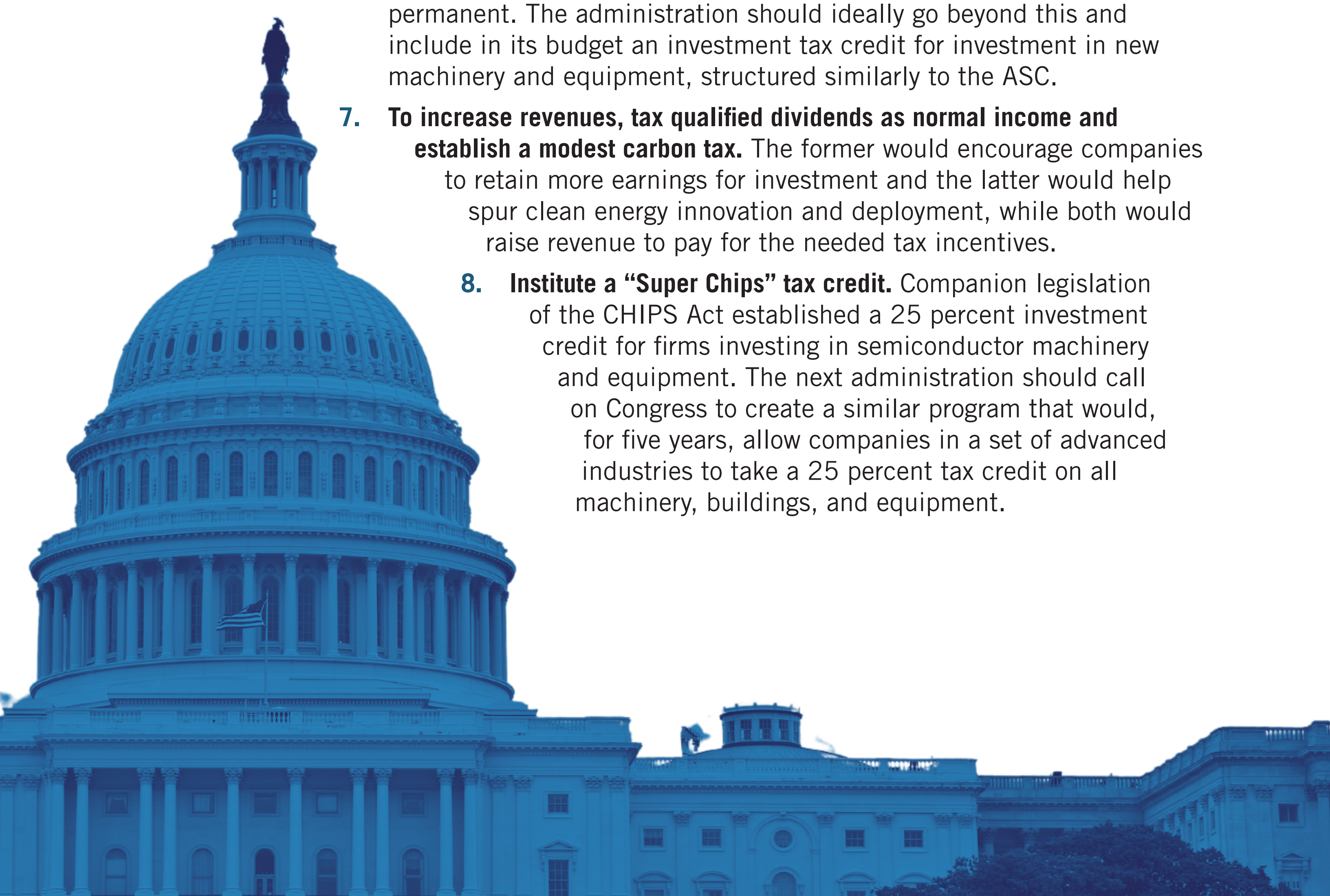
In contrast to progressives who see tax policy as a tool for redistribution and conservatives who see it as an obstacle to freedom, we believe tax policy should be a tool for innovation, competitiveness, and productivity. In contrast to many free market conservatives, we reject the notion that the best tax code is a neutral one. In contrast to most liberals, we reject the notion that the tax code should first and foremost prioritize redistribution. The U.S. government should not be neutral about innovation, productivity, and competitiveness; it should use all policy levers, including tax policy, to spur all three. As such, we propose the following steps.

5. **Double the R&D tax credit and restore first-year expensing.** The R&D tax credit not only spurs more R&D investment in the U.S. economy; it makes R&D-intensive companies in the United States more globally competitive.[5] The next administration's first budget should include doubling the R&D tax credit rate from 20 to 40 percent for the regular credit and from 14 to 28 percent for the Alternative Simplified Credit (ASC), as well as full expensing of R&D expenditures for tax purposes, and expanding the refundable R&D credit for pre-profit start-ups.[6]

6. **Restore first-year expensing on capital equipment.** The 2018 Tax Cuts and Jobs Act created a five-year provision to allow all firms to expense in the first year for tax purposes expenditures on capital equipment. By lowering the after-tax cost of investing in new machinery, equipment, and software, this provision spurs faster adoption of existing and emerging technologies. However, this provision has expired. The administration should work with Congress to make this provision permanent. The administration should ideally go beyond this and include in its budget an investment tax credit for investment in new machinery and equipment, structured similarly to the ASC.

7. **To increase revenues, tax qualified dividends as normal income and establish a modest carbon tax.** The former would encourage companies to retain more earnings for investment and the latter would help spur clean energy innovation and deployment, while both would raise revenue to pay for the needed tax incentives.

8. **Institute a "Super Chips" tax credit.** Companion legislation of the CHIPS Act established a 25 percent investment credit for firms investing in semiconductor machinery and equipment. The next administration should call on Congress to create a similar program that would, for five years, allow companies in a set of advanced industries to take a 25 percent tax credit on all machinery, buildings, and equipment.



RECOMMENDATIONS 9–13: FOREIGN POLICY

To be effective in a world where China is seeking to replace America as the global hegemon, America needs a new kind of foreign policy—an "economic NATO." This would mean moving away from the old model of economic statecraft based on an assumption of unalloyed that assumed U.S. power was unalloyed, and especially rejecting neoconservative adventurism, to be used to punish adversaries and reward friends, even when doing so damages U.S. global competitiveness., to one recognizing Foreign policy instead must recognize the limits of U.S. power and the need to use that power in ways that benefit U.S. techno-economic competitiveness.

9. **Create a techno-economic alliance of key partners.** The next administration should seek to create an alliance of key partners that play by long-standing trade rules and norms vis-à-vis the U.S. economy and are willing to work with the United States to limit China's techno-economic advantage. Specifically, the United States should work to create a new transatlantic G2 with the European Union, which is perhaps China's greatest fear.[7] Ideally, this would be done via a comprehensive trade and investment partnership agreement that creates a de facto free trade zone. This would mean aligning on defensive and offensive trade measures while limiting the use of a variety of policies, such as antitrust, data privacy, digital services taxes, and other regulations thato discriminate against member state companies. The goal is to create genuinely protected large markets that are free from unfair Chinese competition—especially for advanced technology products. Moreover, as the benefits of such a partnership and agreement become apparent, other nations would hopefully be willing to make the domestic policy changes needed to join. These nations would, among other things, need to adopt a "buy allied" system wherein participating governments agree to buy from member nations that commit to reciprocity. Reciprocity would also apply to programs such as the Inflation Reduction Act (IRA) tax incentives. It would build on existing cooperation on secure 5G telecommunication systems and critical minerals.

> **America needs a new kind of foreign policy —an "economic NATO."**

10. **Limit foreign aid to nations that don't play by the rules.** The next administration should align all its trade and development tools in support of its techno-economic interests. The United States can no longer afford to support nations whose actions are against U.S. techno-economic interests, including those that have close technology transfer and other economic relationships with China. The United States has a variety of programs and policies that provide aid to other nations, including Generalized System of Preferences (GSP) trade tariff exemptions and preferential development finance (such as that provided by the Millennium Challenge Corporation and the Development Finance Corporation (DFC)). The next administration should decree that these economic benefits are no longer available to nations with more than de minimis mercantilist and discriminatory policies that hurt the U.S. economy or that are not adequately limiting technology transfers with China. This would mean no more aid to countries on the U.S. Trade Representative (USTR) 301 Watch List, to countries that impose data localization or other digital protectionist tools, and to countries that have average tariffs on U.S. exports higher than U.S. tariffs on their imports.

11. **Press international aid bodies that the United States supports to adopt similar policies.** The next administration should press international development institutions to support only those countries that are committed to the open, rules-based trading system and that are not harming U.S. firms and economic interests. For example, it is striking that agencies

such as the World Bank provide support for nations with anti-U.S. economic and trade policies. The next administration should pressure these organizations to not support such nations, and instead to concentrate more support to nations that play by the rules. If they refuse to do that, the United States should reduce funding to them and increase funding to our own development agencies.

12. **Operationalize existing allied technology-production and trade alliances.** The United States must reclaim its leadership on the international stage, and winning the techno-economic competition with China will require much closer alliances, especially in key industries and technologies. The next administration should build on current efforts, including the NATO DIANA, the U.S.-Japan 2 nm semiconductor partnership (i.e., Rapidus), and current quantum computing partnerships to establish much closer shared technology program partnerships with key allies. This could include partnering with such allies on areas like robotics and aerospace, AI use in the military, developing a shared network of advanced-industry centers in which firms from both countries could participate in each other's programs, and joint participation in national science programs.
13. **Increase U.S. leadership on tech policy in ways that protect not just U.S. values but also U.S. interests.** All too often, U.S. global policy works to spread U.S. values around the globe but does little to push back against nations whose policies are unfairly harming U.S. techno-economic interests. The next administration needs to develop and execute a grand strategy for techno-economic policy that addresses not just democratic and human rights but also U.S. economic, trade, technology, and security interests in a clear, targeted, and holistic manner. Too often, U.S. thinking about these interests and associated issues, such as privacy and AI, is siloed or bifurcated and needs to come together. As part of this, the United States needs to move away from an idealist view of economic international relations to a new doctrine of "techno-economic realpolitik," focusing more on protecting key U.S. interests while utilizing the rules-based international order against authoritarian states such as China.[8]

RECOMMENDATIONS 14–20: TRADE EXPANSION

While unreflective globalization has serious problems, so too does autarky and across-the-board protectionism and isolationism. While turning a blind eye to Chinese mercantilism and embracing the siren song of global integration will not work anymore, neither will going it alone. The next administration needs to reinvigorate U.S. trade expansion and promotion, but in ways that ensure two-way fair trade.

14. **The United States should reset and restart its bilateral trade agenda, including negotiating new and upgraded trade agreements with its closest trading partners (e.g., the United Kingdom) to ensure trade arrangements reflect the state of global techno-economic competition and cooperation.** This could include joining or initiating new digital economy agreements that combine legally binding and enforceable commitments on well-known digital trade issues (e.g., data localization) and soft commitments to cooperate on emerging regulatory issues (via memorandums of understanding, or MOUs).
15. **Join the Comprehensive and Progressive Transpacific Partnership (CPTPP) Agreement.** The United States should integrate itself into the Asia-Pacific economy via a formal—and commercially meaningful—trade agreement. A trade agreement is a critical component not only aligning and upgrading trade rules, but also garnering support for broader measures to counteract unfair Chinese trade and economic practices. As such, the next administration should join the CPTPP, ideally as a way to keep China out. This time around, in contrast to the negotiations over the Trans-Pacific Partnership (TPP), it should ensure the inclusion of enforceable currency manipulation rules, strict rules of origin requirements, and the highest of intellectual property (IP), especially in the life sciences.
16. **Renew efforts to make the World Trade Organization (WTO) moratorium on digital duties permanent.** The global digital economy is premised on the seamless flow of data and digital products. Allowing countries such as India, Indonesia, and South Africa to enact digital duties would change this. The next administration should work with the many countries that have already made binding trade law commitments on the moratorium to expand these to new countries.

> **"The next administration needs to reinvigorate U.S. trade expansion and promotion, but in ways that ensure two-way fair trade.**

17. **Develop a more integrated North American production system.** To build on what the North American Free Trade Agreement (NAFTA) and United States-Mexico-Canada Agreement (USMCA) have achieved, the United States, Canada, and Mexico should coordinate and enact an ambitious and coordinated series of trade, technology, and innovation policies, while rolling back existing protectionist policies, in order to spur deeper North American integration. At the very least, the United States is much better served by having low-wage production done in Mexico rather than in China. It is also better served by having a much larger addressable market in North America to counter China's massive market. And it is far superior to have robust North American natural resource development.
18. **Include measures to reduce border barriers and encourage "innovation corridors" along the border, such as Vancouver/Seattle, Detroit/Windsor, Toronto/Hamilton/Buffalo, and Montreal/Plattsburgh.** Respective government procurement policies should include USMCA partners. The three countries should also create a mechanism to create a jointly funded initiative

for a set of institutes to support a North American advanced manufacturing ecosystem. In addition, the next administration should work to make the content requirements of the Export-Import Bank of the United States (EXIM) more flexible for high value-added goods produced with Mexico and Canada.

19. **Develop and promote an "Innovation Trade Agreement" that would have zero tariffs on goods across all high-tech industries.** In the original 1996 Information Technology Agreement (ITA), 83 countries came together to eliminate tariffs on trade in hundreds of information and communication technology (ICT) products, with 53 countries agreeing to a 2015 expansion that added over 200 more products to the agreement. In 1995, 22 countries agreed to the Pharmaceutical Tariff Elimination Agreement (i.e., "Zero for Zero"), with the signatories eliminating tariffs on thousands of pharmaceutical entities. An Environmental Goods Agreement (EGA) sits in limbo at the WTO. The next administration should spearhead the creation of a WTO "Innovation Trade Agreement" that would commit nations to eliminate tariffs on trade in a suite of the world's most important advanced technology products.

20. **Lead initiatives and negotiate new agreements to build an open, rules-based system for the free flow of data among like-minded partners.** The next administration should build upon its success with CLOUD Act agreements, the OECD agreement on trusted government access to data held by private entities, and the Global Cross-Border Privacy Rules initiative with new agreements and cooperation with like-minded partners to address issues around data flows, while allowing data to flow freely. These initiatives help contrast the United States and its partners from China's digital protectionism. This could include cooperation on the free flow of data used for training and using AI.

RECOMMENDATIONS 21–31: TRADE ENFORCEMENT

For too long, American trade policy has been stuck on "open": the more trade, the better, even if that trade is often one-sided and unfair. That is no longer tenable. But the alternative should not be the opposite: cutting off America from trade and rolling back globalization. Rather, the next administration should deepen and expand trade, but only with other nations that commit to playing by the rules and diminishing their mercantilist and often anti-U.S. policies, while at the same time pushing back more vigorously against unfair trading nations, especially China. This means the next administration needs to focus much more on trade enforcement, especially against China, and not only with existing tools, but with new and revamped ones.

21. **Charge USTR with working with willing allied partners to develop a full "China Bill of Particulars" report that comprehensively documents the extent of Chinese mercantilist unfair trade and domestic economic and technology policies.** Many of these have been noted, albeit in a piecemeal manner.
22. **To the extent the next administration imposes new tariffs, it should be reciprocal to our trading partners.** Using tariffs as a broad protectionist tool, as they were from the Civil War to the New Deal, is not appropriate in today's global economy, as they would harm many U.S. producers and induce reciprocal responses from other nations. However, it is appropriate for the next administration to insist on tariff reciprocity. For example, as a group, the Indo-Pacific Economic Framework (IPEF) nations impose higher tariffs on U.S. exports than the U.S. does on imports from their economies.[9] The next administration should insist that these nations match overall U.S. tariff levels, and if they don't, it should increase U.S. tariffs to match their levels.
23. **Urge Congress to reform the U.S. International Trade Commission (USITC) Section 337 to better respond to unfair Chinese imports.** Section 337 of the 1930 Tariff Act allows the USITC to bar imports when domestic industries suffer harm due to unfair competition. However, the law needs to be reformed to better address the unfair trade practices China uses to capture market share in advanced industries at America's expense. In addition, the next administration should charge the Commerce secretary with thoroughly analyzing and documenting all unfair trade practices in China, and then to work with the Department of Justice (DOJ) to file Section 337 complaints at USITC. At the same time, the next president should appoint USITC commissioners who are committed to supporting Section 337 unfair trade practices and see all forms of innovation mercantilism as an unfair trade practice to be resolutely responded to.[10]
24. **Impose export controls judiciously. Export controls have become the China trade tool of choice, premised on the belief that the United States can throw serious "wrenches" into the works of the Chinese techno-economic machine.** All too often though, these export controls have backfired, with Chinese companies identifying workarounds, supporting their own indigenous innovation, and limiting U.S. global sales, as we have seen in the case of Huawei.[11] The next administration needs to take a much more restrained approach, refocusing on technologies more directly related to military capabilities and not on dual-use technologies.
25. **Develop a new multilateral export control regime.** In advanced-technology industries such as AI and semiconductors, the United States should eschew the application of unilateral export controls. The next administration should seek to develop a more ambitious and effective plurilateral approach to promulgate export controls among like-minded nations that have indigenous semiconductor production capacity, such as Germany, Japan,

South Korea, Taiwan, the Netherlands, and the United Kingdom. In addition, to assist other nations in modernizing their export control regimes, the next administration should encourage Congress to expand the remit and funding for the Export Control and Related Border Security (EXBS) program at the U.S. Department of State. The EXBS program works with partner governments to identify regulatory and institutional gaps, and to provide technical and capacity-building assistance.

26. **Support multilateral efforts to limit technology transfer to China and other forms of free-riding on U.S. and allied-nation technology.** In violation of WTO rules, China forces foreign companies to transfer technology to Chinese firms in exchange for market access. Imposing unilateral controls on U.S. firms will only deny U.S. firms' sales in China, ceding that market to foreign firms. As such, the next administration should work to ensure that any tech transfer limitations are done in coordination with our allies, ideally through a new plurilateral export control agreement.

27. **Ramp up efforts to limit Chinese cyber-IP theft and espionage.** More needs to be done to limit Chinese IP theft. The next administration should work with Congress to pass legislation that increases criminal penalties for such actions. Its next budget should include a sizeable increase for the Federal Bureau of Investigation's (FBI's) Office of Commercial Counterintelligence.[12] The next administration should designate the secretary of Commerce as the principal government official responsible for enhancing and implementing policies regarding the protection of IP. In addition, Chinese companies identified as being engaged in commercial spying against the United States should be denied access to U.S. markets and financial services. The next administration should also urge Congress to enact the SECRETS Act, which would create a powerful new legal tool to deter and punish state-backed IP theft. Finally, the next administration needs to lead allied trading partners to move from collective condemnation of China to collective action and punishment.

> **"The next administration should deepen and expand trade, but only with other nations that commit to playing by the rules.**

28. **Increase federal efforts to disrupt the global flow of counterfeits.** Chinese counterfeit goods jeopardize U.S. consumer safety, erode public confidence, reduce U.S. jobs, and unfairly support Chinese economic growth. The U.S. government, unfortunately, struggles to stop many counterfeit shipments. To address this problem, the next administration should increase the Customs and Border Protection budget and appoint a director who will collaborate with private sector stakeholders, including brand sellers, online marketplaces, and shippers to establish real-time information sharing and analytics about potential counterfeit shipments that would allow them to better detect and seize more imported counterfeits.

29. **Broaden the Committee on Foreign Investment in the United States (CFIUS), which is charged with protecting U.S. defense capabilities.** However, the battle is not just for military supremacy, but rather for broad, dual-use supremacy. As such, the next administration should broaden CFIUS reviews to limit most, if not all, Chinese acquisitions and investments in U.S. companies, including start-ups, with more than minimal technological capabilities.

30. **Urge Congress to institute, ideally along with our allies, a tariff floor on rare earth minerals.** This is needed to prevent China from using price predation to limit production and processing of rare earths by allied nations. China has used subsidies and dumping (pricing below costs) to gain a significant global advantage in rare earths. U.S. subsidies, even if they were forthcoming, would not likely change that outcome. Only a price floor that gives producers the assurance that they will not be undercut by Chinese producers would.
31. **Expand exports to China.** The United States cannot win the techno-economic war with China without selling more to China. Every dollar of U.S. sales to China is a dollar less Chinese companies receive, and a dollar more ours receive. While export controls are needed, they should be limited to only the most critical technologies. At the same time, the next administration should ignore those arguing for boycotting China, including for human rights reasons, and encourage U.S. companies to contest Chinese firms in the Chinese market.

RECOMMENDATIONS 32–34: EXPORT PROMOTION

Given that the United States is running about a $1 trillion trade deficit, it should be clear that the federal government needs to do more to promote U.S. exports. This is particularly important in unaligned nations, where China is aggressively seeking to be their importer of first resort. The United States cannot afford to sit out that competition.

32. **Support EXIM reauthorization and expansion.** ExIm plays a key role in helping U.S. exporters gain sales. The next administration should strongly support the full congressional reauthorization of EXIM in 2026, as well as increased lending authority and targeted reforms (including allowing the bank to lose money on loans for U.S. firms going head-to-head against Chinese firms). It should also allow ExIm to finance weapons exports to our allies (with approval from the Department of Defense (DOD)).
33. **Use foreign trips as an opportunity to promote U.S. exports.** All governors and most foreign leaders use trips abroad as an opportunity to open foreign markets and expand U.S. company sales. The next president and top cabinet officials need to do the same.
34. **Charge the Commerce Department with developing an integrated national export assistance system.** Trade promotion and assistance—helping companies in the United States of all sizes export—is a disorganized and uncoordinated jumble of different programs at different levels of government, making it difficult for exporters to get the information and assistance they need. The next administration should charge the Commerce Department with establishing a national, inter-agency, and intergovernmentally aligned trade promotion system.

RECOMMENDATIONS 35–43: REGULATORY POLICY

Federal regulatory policy should tilt toward, not against, innovation, productivity, and competitiveness. This means recognizing the costs to all three when considering either new regulations or reviewing existing regulations. The next administration should:

35. **Create a unit within the Office of Management and Budget's (OMB's) Office of Information and Regulatory Affairs (OIRA) to systematically consider how proposed agency regulations impact innovation and competitiveness.**[13] While OIRA is tasked with reviewing major regulations from a cost-benefit perspective, it does not explicitly review regulations for impacts on longer-term dynamic effects on innovation or competitiveness. The next administration should appoint someone to head OMB and OIRA who is committed to this approach and establish within ORIA a branch to serve as an "innovation and competitiveness champion" in the regulatory process. The office should have the authority to push agencies to either affirmatively promote innovation and competitiveness or achieve a particular regulatory objective in a manner least damaging to innovation and competitiveness.
36. **Establish an executive order that calls on all agencies to embrace size neutrality when it comes to all federal policies.** Policy should not be tilted in favor of or against any particularly sized business. In addition, the next administration should veto legislation from Congress that violates the principle of business size neutrality.[14]
37. **Create an innovation-friendly regulatory approach and promote it globally.** Fostering the growth of U.S. businesses within the AI sector requires a regulatory environment that encourages innovation and entrepreneurship. To that end, the next administration should eschew AI regulations that limit innovation. At the same time, it should issue an executive order directing federal regulators to establish regulatory sandboxes that allow businesses using AI to work collaboratively with regulators to design innovation-friendly rules. The purpose of this approach is to not only safeguard U.S. innovation and competitiveness while protecting consumers, but also ensure that regulatory measures evolve as AI technologies advance. Additionally, the White House should prioritize building international support in international bodies, such as the OECD and the G7, for pro-innovation regulations to foster a global environment wherein AI innovation can thrive. This is critical because many bodies, including the EU and the United Nations, are pushing for onerous, innovation-limiting AI regulations.
38. **Require the Federal Railroad Administration to design regulations to support innovation and automation in the commercial freight industry.** Increased freight productivity will help U.S. consumers through lower prices. And new technologies will play a key role in that, including autonomous trucks and freight trains that are more automated. This means, for example, that the next administration should press the Federal Railroad Administration to craft rules for one-person locomotives, as well as technology—such as AI—to automate certain functions, such as track inspections.
39. **Require the Federal Aviation Administration (FAA) to expedite its rulemaking on key drone issues.** This includes operating drones beyond visual line of sight and unmanned traffic management that will allow drone operators to safely integrate into U.S. airspace. For example, FAA should streamline the certification process for drones. Currently, drone operators must seek waivers and exemptions to fly instead of adhering to a predefined set of rules, which has slowed the deployment of this technology for services such as autonomous drone delivery.

40. **Press other nations to stop free-riding on America for drug development through their drug price controls, as foreign drug price controls mean fewer new, life-saving drugs for the world.**[15] Moreover, these price controls represent a barrier to trade that limits U.S. exports and U.S. jobs. To the extent the administration is concerned about drug prices domestically, it should charge the Department of Justice (DOJ) with investigating the pharmacy benefit manager (PBM) marketplace.

41. **Reform the National Environmental Policy Act (NEPA) to allow more building, especially in metropolitan areas.** NEPA has morphed into something much larger and more constraining than its crafters envisioned. It is often used to stop or severely constrain development, largely by self-interested local residents and environmental activists. The United States can no longer afford the significant delays and costs NEPA imposes. As such, more than tinkering is needed. The next administration should press Congress for a radical overhaul. At a minimum, given that urban areas are built up already, legislation should exempt all projects built in federally designated urban areas from federal review.[16] These projects would still have to comply with existing federal environmental laws (e.g., the Clean Air Act) and would be subject to relevant state and local regulations.

42. **Push back against other nations weakening standards essential patents (SEPs).** Certain nations are attempting to weaken SEPs in order to obtain foreign, often U.S., IP at a forced discount, thereby hurting innovation and U.S. interests. The next administration should actively push back against these efforts. For example, the United States should support the EU's case against China at the WTO regarding anti-suit injunctions.[17] It should also continue the MOU with the World Intellectual Property Organization (WIPO) regarding dispute resolution for matters involving SEPs.[18]

43. **Stop treating broadband like a public utility.** If ex-ante enforcement of broadband net neutrality ever had any legitimacy, it was early on in the development of broadband when bandwidth was scarce and Internet service providers (ISPs) might have needed to prioritize some traffic. With vastly faster networks with low latency, those days are long gone. Today, net neutrality efforts are a guise for rate regulation. The next administration should finally set aside this moot issue and focus on other more important broadband issues, especially boosting digital literacy and broadband access.

RECOMMENDATIONS 44–49: ANTITRUST POLICY

Historically, U.S. antitrust policy has gravely erred whenever it has tried to break up large technology companies or force them to give away their technologies. It has been more on track when needed interventions were focused on potentially problematic behavior. If the United States is to avoid losing the techno-economic war with China, antitrust in the next administration will need to be much less aggressive toward large technology companies, particularly in attempts at structural remedies and limits on mergers. And it needs to focus less on short-term concerns and more on dynamic long-term factors.

44. **Appoint a Federal Trade Commission (FTC) chair who will withdraw the 2023 DOJ-FTC Merger Guidelines, the Section 5 policy statement, and the Orange Book statement.** The new guidelines represent a dangerous expansion of merger enforcement untethered to sound legal or economic principles. While it is also not clear that they will be given credence by the courts, withdrawing the guidelines would mitigate what have already been highly detrimental consequences in the form of reduced certainty for business and the chilling of procompetitive transactions. The Section 5 policy statement is another dangerous expansion of antitrust authority that has only increased uncertainty and created regulatory risk for myriad types of business conduct that benefit consumers. Additionally, the Orange Book statement, which is yet a third example of poor agency guidance from the FTC that will result in more regulatory mischief, and specifically meddling by the FTC into another regulatory environment where innovation under uncertainty is a defining feature.

> **“If the United States is to avoid losing the techno-economic war with China, antitrust in the next administration will need to be much less aggressive toward large technology companies.**

45. **Continue to ignore enforcement of the flawed Robinson Patman Act (RPA)—or work with Congress to repeal it.** The current FTC's goal of reinvigorating enforcement of the RPA risks condemning a wide range of procompetitive behavior in the name of protecting competitors and harming consumers. Because the FTC's RPA authority is established, the next administration should appoint an FTC chair committed to the prior status quo in terms of the RPA, and ideally should also work to have Congress repeal this flawed piece of legislation.

46. **Support legislation preventing the FTC from enacting unfair methods of competition rulemakings.** The FTC's decision to begin issuing competition rulemakings—for which its authority is questionable at best—that effectively repeal procompetitive business practices widespread across the economy, such as with its noncompete rule, necessitates the need for congressional action, irrespective of whether courts may ultimately find that the FTC has overstepped its authority. This may be needed even if the next administration supports the return to a more balanced antitrust regime, because future FTC chairs could revert to this anti-corporate approach.

47. **Scale back competition enforcement at the FTC.** The FTC's continued overreach and increasing use of its administrative authority suggests that the next administration should consider eliminating the FTC's Part 3 authority for competition cases, as well as ultimately combine all antitrust enforcement into the DOJ.

48. **Approve strategic transactions between the defense industrial bases of NATO countries.** In international markets, very few mergers or joint development agreements between even leading firms in separate NATO countries are likely to substantially lessen competition. Instead, transactions that consolidate the defense industrial bases among NATO countries can serve a critical purpose toward developing the scale necessary to drive innovation, solidify relationships among key NATO partners, and counter China's quest for techno-economic dominance.
49. **Support the addition of a competition chapter at the WTO.** Increasingly, nations and regions such as China are weaponizing antitrust for competitiveness ends and in ways that harm American companies and workers. The next administration should charge its DOJ with pushing back against these policies, as well as charge its USTR with pushing for a competition chapter at the WTO, which could involve nonbinding mediation wherever concerns about discriminatory enforcement or breaches of procedural due process could be raised.

RECOMMENDATIONS 50–56: DIGITAL POLICY

The next administration needs to refocus digital policy away from heavy-handed regulations that dampen innovation and investment and toward, to the extent necessary, light-touch regulations that balance public interest protection with innovation. At the same time, digital regulation should be refocused to protect consumers from real, as opposed to hypothetical, harms (e.g., spam, identity theft, consumer fraud, cyberattacks, etc.). As such, the next administration should:

50. **Refocus broadband policies on finding and implementing policies that benefit consumers.** Closing the digital divide is within reach. We are well on our way to deploying broadband everywhere in the country. The main barrier to finally closing the digital divide is adoption, but federal policy has lost focus on this critical last step. The next administration should call on Congress to fully support the Affordable Connectivity Program. It also should appoint a Federal Communications Commission (FCC) chair focused not on partisan frolics on digital discrimination and net neutrality, but rather on how to support the goal of universal connectivity.
51. **Appoint agency heads whose interest is innovative, efficient use of the airwaves.** Radio spectrum is quickly becoming one of our most valuable natural resources. The federal government has important uses for spectrum, but its lopsided share of frequencies has now become an economic and national security vulnerability. With so much of the economy dependent on wireless applications, it is imperative that the next administration intervene to break the logjam and ensure that the United States boldly enables greater commercial use of spectrum.
52. **Push for passage of federal data privacy legislation.** The next administration should push Congress to pass federal data privacy legislation that establishes basic consumer data rights (including to opt out of data collection), preempts state laws, ensures reliable enforcement, streamlines regulation, and minimizes the impact on innovation. Congress should avoid creating a private right of action that would open a floodgate of expensive, and unnecessary, lawsuits.
53. **Create a national AI roadmap for adoption.** Widespread adoption of AI should be one of the top priorities for the next administration, especially in key sectors such as education, transportation, government, and health care, where because of existing regulations and government involvement, the public sector will need to work with the private sector to deploy the technology. It should develop a national AI roadmap that outlines sector-specific opportunities and barriers, as well as a detailed strategy for achieving widespread adoption in each of these sectors.
54. **Support state preemption on digital policies.** In many areas of digital policy, states have passed or are considering legislation that imposes significant barriers to innovation. The cost of compliance is high, the process of compliance is needlessly complex, and consumers' rights vary from state to state. The next administration should launch a bipartisan U.S. Digital Single Market Commission to draft legislation for areas for federal preemption, focusing on digital issues that affect interstate commerce, such as e-commerce regulation, digital taxation, content regulation, and children's online safety.

55. **Support expanding Section 230 liability protection to cover AI-based online services.** The next administration should push back against legislative efforts to repeal or limit Section 230 of the Communications Decency Act in ways that would discourage content moderation, target lawful speech, and undermine online innovation. Instead, it should urge Congress to expand Section 230 to shield online services and users from liability for content that is automatically generated using "information provided by another information content provider."[19] This reform would ensure that online services can continue to experiment with emerging technologies such as generative AI without incurring additional liability costs that similar services, such as search engines, do not face.

56. **Charge the federal chief technology officer (CTO) with working with agencies to establish digital transformation strategies for industries they affect.** For example, there is considerable opportunity to improve construction productivity and sustainability through the use of digital tools, such as building information management systems. The CTO should form an interagency working group that includes the Department of Housing and Urban Development, DOD, and the U.S. General Services Administration, among others, to establish policies that support digital transformation in construction.

RECOMMENDATIONS 57–71: R&D, TECHNOLOGY, AND MANUFACTURING POLICY

To avoid losing the techno-economic war with China, the next administration will have to take a number of bold steps regarding supporting applied research, development, and advanced manufacturing.

57. **Defend the Bayh-Dole Act.** The 1980 Bayh-Dole Act affords contractors rights to the IP generated from federal funding. The academic technology transfer it has engendered has led to 17,000 start-ups. The act proscribes enumerates several limited circumstances in which the government can march in and commandeer IP (primarily if an invention isn't being adequately commercialized). Some have called for expanding Bayh Dole march-in rights to apply them when the government deems the price of resulting products to be too high. The next administration should categorically reject such innovation-killing proposals.
58. **Task the Department of Commerce with conducting detailed industry analysis and strategy for key industries, including semiconductors, pharmaceuticals, aerospace, software, machinery, and others.** To restore U.S. leadership in advanced manufacturing (and preserve it in software and information services), the next administration needs much deeper, competitive analysis on key industries and strategies for how all federal policies, programs, and practices can be aligned to support, rather than harm, U.S. competitiveness in key sectors.
59. **Require DOD to conduct a thorough review of our nation's defense and dual-use industrial base to identify and ameliorate non-allied foreign dependencies.** This should go hand-in-hand with the generation and promotion of a stronger U.S. defense industrial base.
60. **Support passage of legislation similar to the CHIPS Act for the biopharmaceutical industry.** This would include allocating at least $5 billion to states to provide incentives for the establishment of new biomedical production facilities in the United States.
61. **Launch a joint industry-university-government R&D partnership to reduce the cost of drug development and production.** New technologies can reduce the cost of drug discovery and production. The next administration should ask Congress for funding of an R&D program to work in these areas, similar to the R&D program established under the CHIPS legislation.
62. **Limit low-wage immigration while enabling immigrants with graduate degrees in physical sciences, computer science, and engineering to remain in the United States.** Although it does expand the supply of cheap labor, low-skill immigration limits investments in productivity-enhancing technology.[20] In contrast, STEM (science, technology, engineering, and math) immigration has boosted U.S. innovation capabilities. The next administration should take steps to reduce low-skill immigration while continuing to allow foreigners with graduate degrees in STEM, especially from allied nations in order to minimize national security risks, to work in the United States.

> **"The next administration will have to take a number of bold steps regarding supporting applied research, development, and advanced manufacturing.**

63. **Expand STEM initiatives to include a focus on industrial skills (transform "STEM" to "STEMI").** If the United States is to restore its advanced manufacturing output even to just global average levels (as a share of GDP), it will need more skilled manufacturing technicians. In addition to investing more in homegrown talent development, we cannot just focus on STEM in schools and colleges; we need to focus on highly advanced industrial ("I") skills.

64. **Appoint a director of the National Science Foundation (NSF) willing to push the agency to play a stronger role in advancing and commercializing research critical to U.S. advanced-industry capabilities.** The United States can no longer afford to fund basic research with little concern for how and where that research is commercialized. We need more basic and applied research that is aligned with U.S. industry needs. The next director of NSF should be someone who is committed to transforming NSF into an innovation-supporting institution rather than simply an organization that funds individual scientists. To go along with this, the engineering division of NSF should receive much greater support.
65. **Support building out the Manufacturing USA network closer to the network of 45 institutes originally intended** (and as China has mostly done).[21] The next administration should include in its budget $1 billion a year for the network. It should also press Congress to eliminate the automatic five- to seven-year federal funding sunset for Manufacturing USA institutes and replace it with a five-year, metrics-based review program with minimum standards of performance focused on the advancement of technology and manufacturing readiness.
66. **Support the establishment of at least one national research institute focused on industrial research related to U.S. advanced-industry competitiveness.** A number of other nations, including Australia, China, Japan, and Taiwan, have national research institutes dedicated to precompetitive commercial technology development that domestic firms can then commercialize to gain global advantage. While the United States has the National Institute of Standards and Technology (NIST), its key focus is on metrology (the science of weights and measures). As such, the United States needs to establish a free-standing federal industrial research institute. The next administration should ask Congress for funding for this and hold a competition among the states for its location.
67. **Establish a national commission on corporate short-termism.** U.S. companies are relentlessly pressured by shareholders, including activist shareholders, to maximize short-term profits, even if doing so comes at a cost of U.S. competitiveness and long-term profitability. This is another consequence of the Friedmanite excesses of neoliberalism. While it’s not clear what the answers are, the next president should use the bully pulpit to highlight the issue and convene a commission of experts to identify actionable solutions.
68. **Support the establishment of an advanced manufacturing scale-up capital program.** Hardware invented in the United States is scaled up here only infrequently because the financial system does not support it. U.S. venture capitalists prefer “capital-lite” firms, particularly in software and media, that scale at almost zero marginal cost, rather than capital-intensive businesses that need to build factories. As a result, many hardware technologies are “orphaned” in the United States and must therefore “grow up” abroad. To address this gap and compete more effectively with Chinese and other state-sponsored scale-up financial support programs, Congress should either create a modern-day Reconstruction Finance Corporation (RFC) or expand the mission of the DFC to reduce scale-up risk in designated critical industries. Either way, the organization could provide project finance and associated assistance through grants, loans, loan guarantees, and other instruments.[22] Doing so would use a one-time appropriation from Congress to finance investments in high-tech manufacturing. In addition, EXIM and the DFC should be tasked to provide guarantees and other financial assistance to leverage hardware companies that receive support to scale up globally.
69. **Hold national labs to stronger performance standards for tech transfer to firms in the United States.** Federal laboratories play a key role in discovery and technology development.[23] But they can do more. The next administration should require the collection of more

comprehensive commercialization metrics from labs. It should identify barriers to commercialization and seek to reduce them either through administrative action or legislation. And to the extent it can, it should hold labs more accountable for commercialization, including by providing bonuses for the top-performing labs.

70. **Ban Chinese funding of research at U.S. universities.** Chinese organizations fund U.S. university research in order to take U.S. technology to China, thereby hurting U.S. competitiveness. Universities benefit, but the nation is hurt. As such, the next administration should issue a ban on any university that receives federal funding from also receiving Chinese funding for research.[24]

71. **Hold universities and colleges accountable for biasing admissions and grading against STEM students.** For example, at UC Berkeley, only 4 percent of transfer applicants are accepted for computer science, compared with 53 percent for art history majors. At the University of Illinois, students need much higher SATs to be accepted if they intend to major in engineering than in social sciences.[25] For most schools, the average grade for STEM subjects is lower than humanities and social science subjects. For the most part, colleges and universities do not care about expanding STEM graduation. And they will continue that way until the federal government makes them care. The next administration should direct NSF to deduct negative "points" from the scoring of research grant applications coming from colleges and universities that do not work to favor STEM enrollment and graduation.

RECOMMENDATIONS 72–73: CLEAN ENERGY INNOVATION POLICY

U.S. clean energy policy is a mess, gripped by twin competing delusions. The first is that the climate crisis is so serious that we must do everything, all at once, and immediately; whatever we do, it's "not enough." The second is either that there is no climate crisis or anything we do is not worth it, so do nothing. Both these positions are delusional and have the effect of preventing a more realistic and attainable green transition. Indeed, climate policy in both camps has been largely in the grips of those who believe that we have all the technology we need and it's just a question of will and political mandates to get Americans to use them. The reality is we don't have all the technologies we need, and any solution needs to be global in nature. The U.S. focus should therefore be to develop green technologies that reach price and performance parity (P3) with fossil fuels. When that happens, markets will accelerate the transition and we will see the familiar S-shaped adoption curve for new technologies. Until then, trying to force adoption through regulation or incentivize it through subsidies will have, at best, peripheral impacts. As such, the next administration should:

72. **Select technologies that have both the possibility of reaching P3 and a substantial impact on emissions.** Policy must focus on driving technologies to P3 as fast as possible, providing much more funding for earlier stage R&D, a systematic use of demonstration projects, and support for scale-up in various ways (which may well include targeted subsidies and regulations). Getting to market adoption is the goal, but the history of technology shows that governments have a powerful role to play in getting there.[26]

73. **Pressure other nations to boost clean energy R&D.** Rather than spend political capital at largely symbolic and hyperbolic UN Conference of the Parties (COP) summits that accomplish little, the next administration should pressure nations that are members of the Mission Innovation Alliance to put their money where their mouth is and meet their clean energy R&D spending pledges (something few have done).[27] Each nation should fund clean energy R&D at least at the level of 0.075 percent of GDP.

RECOMMENDATIONS 74–82: GOVERNMENT ORGANIZATION AND OPERATION

As chief executive, the president has, in principle, complete control of how agencies are managed. Despite almost every administration coming up with a management agenda, little is accomplished, especially transformational change on par with best-in-class global corporations. As such, the next administration should boldly seek to reshape the federal enterprise, including through the use of technology, in part as a way to achieve budget reductions. It should:

74. **Set robust AI adoption milestones in federal agencies that result in reduced headcounts.** The administration should prioritize the rapid adoption of AI, consistent with security concerns, in the federal government to increase productivity, reduce costs, and improve public services. As part of this effort, agencies should commit to replacing a percentage of government workers through automation to ensure that these investments in AI result in streamlined operations. This transition, if executed thoughtfully, can result in a more agile and responsive government, enabling fewer workers to focus on higher-value tasks while AI handles routine and repetitive functions. Emphasizing upskilling programs for the federal workforce can help produce a smooth transition and equip government employees with the necessary skills to effectively utilize AI technologies.

75. **Replace slow and costly legacy government IT systems.** Each year, the federal government spends around 80 percent of its IT budget on maintaining legacy systems, a share significantly higher than best-in-class private corporations. The administration should make replacing legacy IT systems with modern, cloud-based alternatives a top priority for federal agencies. Cloud computing not only allows for improved data management and security, which in turn accelerates the adoption of AI and automation, but also frees up federal IT staff to focus on other digital transformation efforts as the cloud service provider takes care of regular maintenance and updates.

> **"Despite almost every administration coming up with a management agenda, little is accomplished, especially transformational change on par with best-in-class global corporations.**

76. **Focus on improving service delivery and customer experience.** Digital transformation is not about an organization applying digital technology to existing processes, but rather about organizations adopting digital technology to improve and transform how they perform business functions and deliver services. The president should appoint a director of OMB focused as much or more on the M (management) than on the B (budget). That person should direct federal agencies to embrace digital transformation by implementing internal processes—such as agile, product management, and service design principles—that allow them to truly transform. This approach will require abandoning procedures, rules, and other red tape that, while risk averse, only slow service delivery.

77. **Offer an optional federal electronic identification (e-ID).** The next administration should create an e-ID for U.S. residents who want one. An e-ID would allow individuals to prove their identity, or attributes about their identity, to digital systems, allowing them to complete more transactions online securely, while protecting their privacy and reducing identity theft. This could be done as an adjunct to obtaining a physical passport.

78. **Use the federal government as a testbed for piloting new technologies.** The federal government owns or leases some 350,000 buildings with a footprint of more than 3 billion square feet, the equivalent of six times the commercial office space in Manhattan. The administration

should use this massive footprint as a testbed for piloting new technologies such as next-generation building energy technologies, energy storage systems, and distributed energy generation technologies.

79. **Restructure the Council of Economic Advisors (CEA) as the Council of Economic and Enterprise Capabilities Advisors (CEECA).** The CEA was established in 1946 to provide economic advice to the president and has almost exclusively been staffed by economists focused on studying price-mediated markets and limiting business cycle fluctuations, not on innovation, productivity, and competitiveness, which have become central to U.S. economic policy. It is also no longer appropriate to have U.S. economic policy guided only by primarily financially minded macroeconomists. Instead, we need scholars in government who understand more about how enterprises grow, evolve, and innovate, and concentrate less on how markets respond to price signals. As such, the next administration should appoint to the CEA, including as chair, scholars who understand enterprises and innovation (while relatively few in number, they do exist), and at the same time, change the name of the CEA to the CEECA to reflect the need for policy to support robust and dynamic enterprise capabilities.[28]
80. **Require each major agency to develop an innovation strategy.** Federal agencies are usually focused on their own narrow missions, not overall U.S. interests. That needs to change. The next administration needs to require all major agencies to develop and implement a strategy for how their activity will support U.S. innovation, productivity, and competitiveness.
81. **Hold department deputy secretaries responsible for "cleaning out the cobwebs" so agencies move at a much faster pace.** The Chinese government moves much more quickly than most U.S. agencies. It is striking and troubling, for example, that Congress appropriated $47 billion for broadband deployment in 2021, yet the Department of Commerce has yet to allocate the funds.[29] Agencies need to be told in no uncertain terms that "business as usual" is no longer good enough. The White House needs to hold deputy secretaries accountable.
82. **Direct key federal agencies to incorporate productivity growth into their missions.** No economic or financial entity in the federal government—including the National Economic Council, the Council of Economic Advisers, the Commerce Department, and the Federal Reserve Board—has the goal of advancing productivity as an explicit part of its mission. The next administration should rectify this by mandating that all such executive agencies make productivity growth a core focus. As part of this order, the president should direct OMB to identify 50 government programs or processes that should be overhauled technologically to deliver greater value at lower cost to taxpayers through increased productivity.[30]

America is running out of time. Once lost, a firm's—or a nation's—technology advantage is almost impossible to regain unless it is willing to spend enormous sums of money, as China is doing. If the federal government does not act boldly within the next few years, it may permanently lose the ability to effectively compete in a range of critically important advanced industries.

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ABOUT ITIF

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ENDNOTES

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