

### PUBLIC POLICY GUIDE



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## **INTRODUCTION**

The Arizona Technology Council is the principal advocate for science- and technology-based companies in Arizona. The group continuously monitors federal, state and local legislation and policies that impact the sustainability and growth of Arizona's technology industry. Through the collective strength of our members, the Council informs and educates policymakers on issues that are important to Arizona's technology sectors.

From the U.S. Congress and the Office of the Governor to legislative committee rooms and city halls across the state, the Council serves as the voice calling for a technology-based, progrowth, business-focused agenda.

The Council and its Public Policy Committee hereby submit the 2019 Public Policy Guide. In creating this document, the Committee relied heavily on the Council's mission by preparing key ideas, goals and legislative initiatives that:

- Improve the business climate for technology-based companies
- Provide sources of risk capital that encourage entrepreneurship
- Create an environment that supports science- and technologyrelated job retention and creation
- Attract, train, retrain and retain the talent required to compete in a global innovation economy

The Committee created a list of principles in a number of subject areas then established related positions to be used as the foundation of the Council's public policy efforts in 2019. In some cases, the positions will advance through development and advocacy of legislation that will be introduced during the Arizona Legislature's 2019 session. In other instances, the positions will be used on an ongoing basis as regulators introduce new regulations or changes to existing regulations pertinent to Council members. At all stages, the Committee will be engaged in various efforts to advance the position of Arizona's technology-based companies. The following principles and positions will aid elected officials and other stakeholders at all levels of government and business as they craft legislation and policies that affect Arizonans and the Arizona economy for years to come.





### ARIZONA TECHNOLOGY COUNCIL LEGISLATIVE PRIORITIES – 2019

- Restore fourth-year career and technical education (CTE) funding for programs that take four years to complete in key industries crucial to Arizona's continued economic development such as engineering and manufacturing.
- Consistently and sustainably fund the state's education system, including pre-K, K-12, CTE, equitable access to dual enrollment, and postsecondary programs, including keeping the 20% percent teacher raise by 2020.
- Ensure funding for computer science teacher training, aligned with the new Arizona K-12 computer science standards, so there can be a wider deployment of computer science classes for students across the state.
- Look for opportunities to continue proven economic development programs, such as the Angel Investment Tax Credit and current levels of the Research and Development Tax Credit.
- Support improvements to Arizona's tax system that strengthen competitiveness, fairness and are predictable, specifically:

- o Ensure Arizona conforms to the recently-passed federal tax law changes;
- o Support statutory clarification concerning the taxation of digital goods and services;
- o Support legislation that ensures Arizona conforms to the U.S. Supreme Court's Wayfair decision that allows states to tax remote sellers.
- Promote the adoption of necessary statutes, guidelines, rules or agency positions that are needed to allow Arizona to leverage the federal rulemaking that enable associations to provide substantially enhanced Association Health Plans (AHPs) that will offer costeffective health benefits to their members.
- Support the efforts of Arizona's Institute of Automated Mobility and work to help advance all aspects of automated vehicle science safety and policy with the integration of technology into Arizona's transportation systems.

### AEROSPACE, AVIATION AND DEFENSE PRINCIPLE

Arizona is a vital contributor to U.S. national security interests by having fostered a pioneering spirit in aerospace, aviation and defense for generations. With more than 1,250 companies in aerospace and defense—including major prime contractors such as Raytheon, Honeywell, Boeing, Lockheed Martin, General Dynamics and Northrop Grumman—Arizona boasts thousands of highly skilled technology workers with high-paying jobs. Additionally, the state's military bases contribute nearly \$11.5 billion annually to the Arizona economy, according to 2017's "Economic Impact of Arizona's Principal Military Operations" study commissioned by the Arizona Commerce Authority and prepared by The Maguire Company. The report also states the six military installations and four National Guard operations are responsible for creating more than 76,000 direct and indirect jobs.

State leaders and members of the Legislature must develop, publish and implement strategies that will maintain, strengthen and grow the aerospace, space, defense, aviation and unmanned-systems industrial base. In turn, this will provide Arizona a competitive edge as a top state supporting U.S. national security objectives.

### POSITIONS

**Defense Spending** – Create an environment that enables sustainment and growth of total billing in defense contracting in the state. Arizona has incomparable aerospace and defense assets, as shown when PWC ranked the state No. 3 in U.S. aerospace manufacturing attractiveness in August 2017. As such, we must encourage through education an understanding of and appreciation for key military assets and their continuous economic impact on the state. These assets include the Barry M. Goldwater Range, the Buffalo Soldier Electronic Test Range, U.S. Army Yuma Proving Ground, Marine Corps Air Station Yuma, U.S. Air Force training and readiness at Luke Air Force Base for the F-35 and Davis Monthan Air Force Base for the A-10. Also, we need to maintain and protect the state's unique environment that enables testing of key command and control, intelligence, communications, weapons and vehicle equipment without extraneous electronic or encroachment interference in Southern Arizona.

**Arizona's Military Bases** – Shield Arizona's six military bases from development interference. Ensure military airspace provides unfettered access from the bases to military test ranges in the state without restrictions due to over development.



**Military Base Missions** – Examine the future mission focus for all six military bases in Arizona. Work with local support groups and the Council to expand their mission profile in areas such as:

- Artificial intelligence
- Unmanned air and ground systems (offensive and counter operations)
- Robotics
- Cyber operations and defense
- Pilot training
- Space operations

Specifically, protect and increase the missions of Fort Huachuca, which include NETCOM's cyber defense, networks, unmanned aerial systems (UAS) training, intelligence and exceptional teaming with the U.S. Department of Homeland Security. Conduct research and seek additional missions such as special operations stationing and training for which Fort Huachuca is best suited in terms of job growth. Protect and promote continuation of the A-10 mission at Davis-Monthan Air Force Base and/or support an adequate mission replacement, including the F-35. Grow F-35 pilot training at Luke Air Force Base and Marine Corps Air Station Yuma. Enthusiastically promote and grow unmanned testing and development at U.S. Army Yuma Proving Ground. Embrace and promote the exceptional Arizona Army National Guard.

**Unmanned Aerial Systems** – Expand the capabilities of the largest UAS training center in the world at Fort Huachuca. Actively guard against the relocation of the training center to another state. Seek ways to cultivate strong ties and additional projects with Nevada, one of the six states in the nation selected as test sites for UAS, by leveraging existing assets statewide. In addition, support policies that encourage development and use of UAS technology for commercial applications. Also, seek new mission growth in the counter UAS area, which is just beginning at the U.S. Department of

Defense. Promote the defense industry in the expansion of private and personal UAS.

**Commercial Space Technology** – Recommend Arizona leaders be first to develop the capabilities needed to support President Donald Trump's plan to create a Space Force. Also, support, encourage and nurture development of commercial space applications in Arizona. With the global commercial space market valued at more than \$360 billion annually, the state plays a major role through new technology companies such as World View Enterprises and Vector Launch. Add to that the ongoing efforts of established corporations such as Boeing, Honeywell and Northrop Grumman, and high-profile research and development through programs such as OSIRIS-REx at The University of Arizona and Psyche Mission at Arizona State University.

**SBIR/STTR** – Continue to fund the Small Business Innovation Research (SBIR) program to fully leverage Arizona's strengths across primary research, development, prototyping and early-stage manufacturing in support of national security objectives. Encourage industry/academia teaming for Small Business Technology Transfer (STTR) and collaboration for SBIRs to retain academic talent and graduates in Arizona.

### **BIOSCIENCES AND HEALTH CARE**

### PRINCIPLE

Advocate collaboratively with Arizona stakeholders to support the discovery, development, commercialization, delivery and availability of bioscience innovations.

### POSITIONS

**University Research Funding** – Advance the research enterprise system wide by working collaboratively with the Arizona Board of Regents. Proposition 301 funding allocations (described in

detail in the Education, Workforce and Workplace section of this Guide) should be protected. Renewed investment will continue to accelerate Arizona's economic base – and position as an innovation leader – in the growing biosciences fields. Specifically, the Technology and Research Innovation Fund (TRIF), which provides essential research funding to Arizona's public universities, must be reauthorized and funding maintained. Potentially, additional levels may be contemplated for the future.

**Internships** – Develop and fund a pilot program to support STEM internships for Arizona students at high schools, community colleges and universities.

**Improve Care and Reduce Health Care Costs** – Focus on cost-saving measures and total cost of care for the patient. Efforts should be made to ensure Arizonans have the opportunity to benefit from the lifesaving and life-changing innovations the biotechnology and medical technology industries can offer.

**Support Arizona Biomedical Research Centre (formerly the Arizona Biomedical Research Commission)** – Support the Arizona Department of Health Services in developing a statewide competitive proposal process for funding opportunities designed to identify and select high impact bioscience research, education and innovation projects specifically designed to benefit the people of Arizona today and in the future.

### **BIOSCIENCES AND HEALTH CARE: TELEHEALTH**

### PRINCIPLE

Telehealth and its integration into delivery of health care through electronic means should continue to be enabled throughout Arizona. That includes educating and advocating for uniform deployment and enforcement of the new telemedicine laws at state and local levels, as well as facilitating expansion of a robust statewide telehealth ecosystem.

### POSITION

**Telemedicine Bill Refinements** – Support expanded telemedicine parity, licensure and electronic establishment of doctor/patient relationship laws that are driving Arizona telemedicine adoption and enhancing access to health care. Additional refinements include amending existing policies and rules for implementing the new telemedicine laws. Patients and health care providers are benefiting from initial policy and rule implementations. However, still lacking is uniform understanding of the new telemedicine parity and licensure laws that expanded service coverage and removed statutory and regulatory barriers. This lack of awareness, understanding and enforcement of the new telemedicine laws has resulted in a lag in provider participation, which negates providers' ability to reach their potential. We need to educate and advocate for uniform deployment and enforcement of the new laws at state and local levels.





### **CAPITAL FORMATION**

### PRINCIPLE

The quickest and most efficient way to continue making Arizona a technology destination is to attract more investors and their financial resources. This can be accomplished by understanding what the risk-capital industry needs to motivate such a move of capital to the state. Arizona has developed a successful Angel Investment Tax Credit program and has a research and development ecosystem second to none. Despite those programs, many firms seeking capital to enter the critical early-stage of business development leave Arizona because crucial funding is scarce for them. Arizona needs to address this issue because it is losing out on this country's most coveted jobs.

### POSITIONS

**Angel Investment Recapitalization** – Ensure additional credits recently authorized for the Angel Investment Tax Credit program stay in place for the life of the program. The Legislature in 2014 extended the highly successful tax credit program until 2021. However, the amount of angel investing in the state decreased significantly after the initial \$20 million in authorized funds were depleted in summer 2015. In their 2017 session, lawmakers authorized the Arizona Commerce Authority to certify an additional \$2.5 million of tax credits each fiscal year until 2021 for investments made in a qualified small business plus any unused credit capacity that carries over from the preceding year. Re-authorization of the program for another 10 years will be necessary to continue the infusion of investment in the startup community.

**Research and Development Tax Credit** – Maintain levels of the extremely successful Research and Development (RandD) Tax Credit program to continue encouraging companies to invest additional research and development monies here in Arizona. In 2008, the Legislature approved increasing the RandD tax credit value from 20 percent to 24 percent for the first \$2.5 million in qualifying expenses and increasing the rate for qualifying expenses in excess of \$2.5 million from 11 percent to 15 percent. In the 2017 session, legislators approved maintaining current percentage levels until 2021. An analysis should be done to

determine ways that companies can utilize some of their unused credits and these levels should be extended permanently.

**Refundable RandD Tax Credit** – Expand the Refundable RandD Tax Credit program to meet the needs of the early-stage companies that are investing research and development dollars and earning credits without having the tax liability to which they can apply them. Ensure more accessibility for small businesses, maximizing the impact of the overall program. The program is capped at \$5 million per year. Historically, this money has been allocated quickly, showing a much higher demand than the existing funding levels. Efforts have been made to ensure maximum utilization of the program by companies instead of allowing any one company or few companies to get the majority of these funds in future years.

Early-Stage Venture Capital – Increase early-stage funding that is integral for startups and early-stage companies as they try to take their products to market. In the 2017 legislative session, the Arizona Competes Fund was modified to include grants that support and advance programs for "microenterprises." Specifically, 30 percent or up to \$1 million of the annual grants in each fiscal year must be used for microenterprise development in Arizona. The statutory termination date of the fund also was extended until July 2026. The modifications are intended to reduce the number of companies recruited to surrounding states with seed and earlystage venture capital. Most states around the nation have created early-stage venture capital funds through which the states take on a role in supporting investments in these companies. Arizona needs to look at how to attract, encourage and incentivize earlystage funding of companies. Various funding models (e.g., Utah's fund of funds model, Maryland's insurance premium tax credits) used in other states need to be analyzed to determine which could be potentially viable methods in Arizona.

**Coordination of Angel Investment Activity** – Support the efforts of the Arizona Commerce Authority (ACA) to:

- Coordinate and build a more robust angel investment community by working with existing angel investment groups and accelerators.
- Celebrate and publicize the "success stories" of the startup community.
- Develop an "information clearing house" for startup and earlystage companies so that information about these companies can be introduced to other members of the startup community, including potential investors who can learn about these companies and still comply with the applicable securities laws.



### **CYBERSECURITY**

### PRINCIPLE

With data moving into the cloud and the digital economy expanding, cybersecurity is now one of the most critical issues facing the nation. As we move deeper into the digital age, new threats and data breaches occur almost daily.

Cybersecurity is a top priority. Some reports put the number of monitored cyberattacks at 1.5 million per year in the United States, with up to 85 percent of data breaches undetected. There is no question that we are in a cyberwar being waged globally, although primarily in the private sector. As a result, American businesses find themselves at the forefront of the battle, making cybersecurity improvements critical for businesses of all sizes and types.

### POSITIONS

**Awareness** – Prioritize awareness and intelligence about the risks that unfriendly groups and malicious individuals pose to businesses and the best practices for discerning and blocking attacks.

**Education** – Support and accelerate cybersecurity education for individuals from K-12 through senior citizens to help protect all Arizonans, and equip the current workforce and develop the next generation of protection and response professionals.

**Regulations** – Promote responsible regulation that centers on reasonable and consistent privacy notice and breach response requirements by working to keep public agencies educated and aware of the best cybersecurity practices.

### **ECONOMIC DEVELOPMENT**

### PRINCIPLE

Arizona must be able to compete with any state or country by having the most competitive economic tools possible while encouraging innovation, business attraction, retention and growth. Arizona has created, attracted and grown many technology companies during the past decade due to our economic climate. However, we must ensure we continue programs that assist with this, not adopt policies that could be detrimental to economic growth.

### POSITIONS

ACA State Promotional Effort – Advocate for Arizona Commerce Authority's (ACA) continued funding and work to ensure it remains the platform for the state's economic development efforts. Encourage support for the many ongoing ACA initiatives that are focused on enhancing the Arizona innovation ecosystem. The ACA's mission is to grow and strengthen Arizona's economy, and facilitate the creation of quality jobs for its citizens by expanding and attracting businesses in targeted, high-value base industries throughout the state. Support the Arizona Office of Economic Opportunity's mission to increase the quality of the workforce and business climate in the state through use of economic, demographic and regulatory data; policy development; and relationships with key partners.

**Global Competitiveness** – Support the increase of resources dedicated to Arizona's State Trade and Export Promotion (STEP) program from the ACA and U.S. Small Business Administration. This would help ensure small businesses are able to compete internationally on a level playing field. Also, the Council will participate in trade missions around the world in order to provide

economic opportunities for its members. Additionally, encourage support for Arizona's Manufacturing Extension Partnership (MEP) center created through a partnership between the ACA and the National Institute of Standards and Technology (NIST). The goal of the MEP is to become the central resource for technical assistance and all things manufacturing for Arizona's existing community of small and medium-sized manufacturers.

**Infrastructure Investment** – Support development of tools to facilitate public and private investment in infrastructure necessary to competitively enable high-tech manufacturing investments and growth.

**Local Efforts** – Ensure we foster local economic development by supporting local entrepreneurs who engage with the global economy through broadband and the Internet to deliver goods and services around the world. Additionally, there are initiatives to make Phoenix, Tucson and other Arizona communities more supportive of startups and innovation. Those efforts need to be encouraged and supported where possible. Ensure local governments do not create ordinances or other roadblocks to doing business in their jurisdictions but instead support streamlined processes when available.

**Fewer Regulations** – Continue to reduce the number of regulations that discourage companies from relocating to or growing in the state. There has been increased focus over the last few years to get government out of the way of business and create an environment that fosters growth. There is continued support needed by the Legislature and business community to reduce regulations and create policies that stimulate the economy instead of stifle it, especially in relation to new innovative and disruptive technologies that challenge some industries' ways of doing business.



**Targeted Industries** – Expend substantial public policy efforts and accompanying resources on creating, attracting and retaining those employers that pay the highest wages. Wage studies routinely show that the many technology fields supported by the Council employ the highest-paid employees. In particular, the Council recommends efforts to target the following industries: health and bioscience; semiconductor and electronics; information technology; energy; aerospace (including commercial space), aviation and defense; mining technology; telecommunications; optics; and medical, financial and education technologies. Support Arizona's efforts to establish a leadership position that encourages adoption of new, innovative and disruptive technologies such as blockchain, artificial intelligence, machine learning, additive manufacturing, autonomous vehicles and the Internet of Things (IoT).



### EDUCATION, WORKFORCE AND WORKPLACE

### PRINCIPLE

The lack of skilled talent needed to meet demand continues to be a top challenge and barrier to business growth for Council members across industries and disciplines. A robust, aligned education and workforce development system must be developed and supported. At all levels, science, technology, engineering and math (STEM) education must be proactively supported. Workforce placement and retention must be coordinated with industry.

Such a system of support will provide the foundation of a healthy Arizona technology community and innovation economy by:

- Aligning with the needs of companies for science, technology, engineering and math (STEM) workers now and in the future.
- Enabling the attraction and retention of the talent in-state or imported needed for Arizona to thrive as a technology hub.

### POSITIONS

**College and Career Readiness** – Increase the college and career readiness of Arizona's youth, and accelerate workforce and

economic development by championing support for improvements in pre-kindergarten through postsecondary education and alignment with business needs. Leverage rigor and relevance, and high expectations for all students as key strategies for improvement. Major areas of focus should include supporting and providing funding for career awareness and development in 7th and 8th grades, understanding career pathways aligned with Arizona's targeted growth industries, leveraging industry engagement, and increasing work-based and work-like experiences provided through high school and postsecondary education.

**Education Funding** – Fund the state's public education system at all levels with consistent and sustainable revenue sources. Specifically: Keep the 20% percent teacher raise by 2020 and protect the Proposition 301 funding allocations extended by the Legislature in 2018. Restore fourth-year CTE funding for programs in key industries crucial to Arizona's continued economic development. Ensure funding for computer science teacher training, aligned with the new Arizona K-12 computer science standards.

Other reforms should include equitable funding of K-12 education with a formula such as Proposition 301's that positions Arizona at



minimum with mean level funding among the 50 states. Alternative ideas also should be developed to appropriately fund pre- and full-day kindergarten, CTE, equitable access to dual enrollment, community colleges and universities in addition to K-12. Long-term comprehensive funding reforms should modernize and promote a 21st century delivery model of education focused on performance and accountability.

**Accountability** – Drive attainment of the statewide goal Achieve60AZ by funding the strong support necessary to meet the accountability metrics set forth by Progress Meter and adopted by the Governor's office. Support the implementation of meaningful and aligned accountability systems with appropriate resources and training.

**Matching Needs** – Align workforce development and education efforts with employer needs. Encourage companies to actively engage with educators and workforce development organizations to create curriculum content and set work experience and apprenticeship standards that support certification and credentials. Support and increase the use of business-friendly, work-like and competency-based work experience models and pathways to accelerate skills development in high-wage, high-demand and high-growth sectors. Examples of such models include internships and apprenticeships, CTE, early college and career high schools, as well as the Arizona Advanced Technologies Corridor Project that community colleges recently implemented. Utilize technology for scale and implementation in rural and remote locations.

**CTE** – Support budgeting and programming for fourth-year career and technical education (CTE) to maximize and accelerate acquisition of knowledge and skills – increasing certifications and credentials – in key high-demand industries such as engineering and manufacturing.

**Dual Enrollment** – Increase implementation of early college and career high schools by removing the barriers to full participation in dual enrollment, including raising the 25 percent cap on 9th and 10th grade enrollments and developing sustainable funding models. Additionally, ensure access to and equity in dual enrollment opportunities for all students. These are strategic investments to maximize high school and postsecondary education attainment and ensure preparation of the workforce needed by Arizona's growth industries, and economic growth and well-being for Arizona's citizens.

**Credit for Experience** – Support legislation to allow high school credit for high-impact, work-based and work-like experiences. Leverage incentives, tax credits and apprenticeship grants to promote internships and apprenticeship programs.

**Talent Gap** – Promote active company participation in bridging the talent gap. Engage business, education, workforce and economic development communities in collaborative, integrated sector, and cross-industry strategies and implementation. Leverage programs and agencies charged with addressing skilled workforce shortages in high-tech industry sectors, including energy, information technology, bioscience, health sciences, and mid-skill and advanced manufacturing.

**STEM** – Raise awareness about critical teacher recruitment and retention issues, especially in STEM. Professional development and training for educators across all STEM subject areas also is essential. Increase access to highly qualified teachers in robust STEM classes, including computer science, as part of dramatically improving STEM education for every student in the state. This all is integral for the technology and innovation economy that Arizona wants.



**Teaching Computer Science/High School Computer Science Mandate** – Advocate for increased utilization of the national K-12 Computer Science Framework and support Gov. Doug Ducey's participation in the Governors' Partnership for K-12 Computer Science. Work toward enabling all high schools to be able to offer at least one computer science course, funding rigorous professional development and creating high-quality computer science standards. This would support a recommendation to require all secondary schools to offer rigorous standards-based computer science in person or remotely.

**Broadband Access** – Enable broadband availability for rural K-12 schools and libraries, as well as higher education. Drive education applications and collaborative activities to improve learning delivery, and development of workforce skills and pathways. Continue contracting the buildout of new high-capacity broadband infrastructure such as fiber to provide connectivity at predictable, modest costs to rural schools and libraries through a two-year Federal Communications Commission E-Rate program that has allowed Arizona to leverage funding. As the program winds down, build on the progress that has been made to bring broadband to the many rural schools and libraries.

Have the Arizona Department of Education and Arizona State Library, Archives and Public Records continue to aggressively pursue ongoing E-Rate support for telecom equipment and services, as well as other grants and industry programs. This will help form and assist coalitions of school districts, counties and regions to successfully qualify and implement such projects to take optimum advantage of these opportunities. The two departments also should cooperate and coordinate with the proposed Arizona Broadband Office, the Governor's Office of Education and the EducationSuperHighway to collaborate with rural community partners in a shared effort to help close the Internet access gap for the rural K-12 schools and libraries. **E-Learning** – Increasingly utilize digital curriculum, virtual online labs, makerspaces, robotics instruction and competency-based e-learning approaches to better prepare students for the jobs of the future and improve learning outcomes for diverse student needs. Arizona already has a significant cluster of companies and educational institutions active in these areas. This provides the opportunity to be a leader in innovation and transformation of education, which could yield significant economic development benefits for the state. For example, a statewide consortium could be established to enable virtual online lab simulations for science, engineering and medical courses available at low cost to all Arizona schools, community colleges and universities, which would be especially beneficial for rural educational institutions that lack physical labs.

**Workforce Development/Job Training** – Create a new funding mechanism to ensure a job training program is available for companies to utilize. Arizona is one of the only states in the region without such a program after the repeal of the tax on businesses that had been funding it. Support efforts to integrate workforce development programs and reinvigorate job training programs to help companies attract and retain needed talent, whether it is produced within Arizona or "imported" from other states and countries. Support engagement among training providers, educators and employers, which is critical for curriculum development and the creation of work-based and work-like experiences that accelerate skills development. Promote ways that companies can actively participate in bridging the talent gap, including apprenticeships and other innovative employee training and onboarding programs.

**Job-Driven Financial Support/Assistance** – Explore job-driven financial support models, including eligibility for unemployment benefits for underemployed individuals participating in intensive training programs for high-wage, high demand jobs; tuition



waivers; and "last dollar" scholarships/tuition assistance for adult learners to complete in-demand certificates or degree programs. According to the National Skills Coalition, "job driven financial support policies provide money to students seeking access to workforce training and education programs that would lead to middle-skill credentials" that could develop talent for the high-skill, high-wage, high-demand jobs critical to Arizona's economy.

**Employment Non-Discrimination** – Encourage policy makers to embrace basic principles for non-discrimination that are critical for attracting and maintaining a competitive workforce, especially in the technology sector. Support non-discrimination statutes to be inclusive of gender, religion, sexual orientation, gender identity, nationality, disability and age. Employees should be judged on their merits instead of identities and employers should foster an environment of acceptance where innovation can thrive.



### **ENERGY**

### PRINCIPLE

The link between technology investment and energy is fundamental and unbreakable. To attract investment capital, as well as retain and grow its technology business sector, Arizona needs predictable and investable energy markets. Additionally, Arizona needs a secure and adequate water supply. Every key Arizona technology cluster — including aerospace and defense, semiconductor and electronics, health and bioscience, cloud/data centers, back-office processing and alternative energy technology — requires energy markets that are affordable, reliable and competitive. Policy and legislative choices that enable market forces to improve the status quo have historically been favored. There are a number of attractive policy options that would benefit Arizona technology businesses, job creation and economic productivity as described below. There have been several recent efforts to establish and improve the clarity of Arizona's energy policy. The Arizona Energy Consortium in November 2013 published the "Arizona Energy Roadmap," which was developed through input from a series of industry stakeholder meetings. Former Gov. Jan Brewer published "emPOWER Arizona: Executive Energy Assessment and Pathways" in February 2014 as a result of a collaborative effort of the Governor's Office of Energy Policy, ACA, Arizona's Legislature, Arizona Corporation Commission and leading industry partners. Although the reports had slightly different approaches, the impetus behind both efforts was to provide more certainty to developing Arizona's energy policy in the future.

### POSITIONS

**Diversification of Energy Supply, Utilization** – Improve diversification of the state's energy mix by including cost-effective solar and other renewable energy resources. Enhance the state's integration of renewable resources and reliability through the use of flexible resource technologies. These policies would help hedge against short supplies or rising prices. Policymakers should enact laws that enable diversification of the energy supply and make certain the benefits of these improvements inure to all Arizona companies.

- Natural Gas Continue to take advantage of Arizona's natural gas generation resources to provide an attractive in-state, export-ready electricity supply. Intermittent renewable resources augmented by natural gas generation can provide a carbonreduced, secure power source until other utility-scale renewable options with inherent or built-in storage become available. Adding modern, flexible natural gas generation to existing fleets will be important to maintaining this synergy.
- Nuclear Energy Continue Arizona's utilization of the low-cost base load power of the Palo Verde Nuclear Generating Station to benefit the state's residents and businesses. As the largest

nuclear power plant in the nation, Palo Verde is the primary energy hub of the Southwest, establishing Arizona as a key market for interstate generation suppliers. Importantly, this excellent source of base load power is best suited for the steady, predictable power needs of always-on manufacturing, data hosting and bioscientific experimentation.

 Solar Energy – Seek ways to attract economic solar investment that takes advantage of the state's world-class solar energy attributes. Arizona exhibits some of the best attributes for harnessing solar energy in the world. The state's ideal location, moderate climate, and proximity to substantial and in-place infrastructure provide real world inputs for Arizona to establish itself as the leader of solar energy generation and innovation.

**Electric Transmission** – Continue to support transmission development that enhances Arizona's ability to participate in energy markets and more efficiently use the existing transmission system. Provide the regulatory climate necessary for Arizona to maintain its leadership role in the coordinated and strategic development of transmission lines, allowing the energy industry to continue to prosper and facilitate the influx of private capital into Arizona.

**Energy Planning** – Adopt a more robust regional approach to energy development. Although in-state demand reduced due to the recession, load growth has been recovering since 2014. New generation is being acquired each year as Arizona returns to growth. With large, high-demand markets in the broader region, Arizona has a tremendous opportunity to prosper through exportation of energy generated in-state. An increased focus on a regional approach could drive an increase in economic and lowcost renewable energy generation without requiring modification of Arizona's renewable energy standard (RES). With a regional approach to power generation and a grid that supports the regional transmission of power, other states and nations can benefit through the development of appropriately situated generation facilities. For instance, a state where it is more expensive to develop generation projects may be better served by supporting construction of facilities in regions with lower development costs.

**Storage Technology** – Look for opportunities to explore storage technology that is rapidly developing and holds promise to be a significant companion to renewable energy. With substantial regional development of renewable resources, the Western Interconnection electric grid has periods of the year when generation resources and electric load are more difficult to match. A combination of storage technology and flexible natural gas generation may be key tools to successfully address this issue.

**Technological Advances** – Create a regulatory environment not just for today, but that encourages and embraces future technological advancement. There are growing trends towards smaller, highly efficient, distributed generation units, microgrids and energy storage technology. To the extent that legal constraints and rate structures resulting from existing energy policies prevent Arizona businesses from adopting new technology or artificially increasing the costs of such adoption, such constraints and policies should be modified.

**Water Challenges** – Support the growth of technology-based industries that are developing innovative solutions to our water challenges. This may include a focus on securing early-stage risk capital for these businesses. It also may involve collaborating with economic development entities at local and state levels to attract more businesses. Support collaboration between universities and the private sector to develop new technologies to conserve water and augment supplies.



### FINANCIAL TECHNOLOGY (FINTECH)

### PRINCIPLE

Arizona's financial technology (FinTech) sector is among the most promising and fastest growing in our technology community. There's a broad and robust FinTech community here with a diverse range of products and services that have the potential of disruption for traditional financial services companies. Arizona has shown leadership in breaking down regulatory barriers with the potential to inhibit FinTech innovation and emerging business models and should continue to cultivate a FinTech-friendly environment. Our goal is to help drive state regulatory reform to allow use of virtual currency that meets the needs of Arizona's FinTech sector where innovations primarily rely on virtual currency. Arizona must provide a robust, streamlined supervisory experience for virtual currency and non-bank firms that is transparent, provides a level playing field for businesses that doesn't favor larger players over small ones, and appropriately protects consumers from harm. The following recommended paths target several areas in need of reform.

### POSITIONS

**Digital Signatures and Smart Contracts** – Traditional paper contracts can be quite inefficient and prone to fraud, which is why digital "smart contracts" tied to immutable blockchains are emerging as an alternative. Arizona lawmaker previously passed HB2417, the nation's groundbreaking legislation that amended the Arizona Electronic Transactions Act to include digital signatures recorded on a blockchain. This enshrined their validity and enforceability for records or contracts. In the most recent session, the Legislature passed HB2603, refining and improving the handling of any electronic record and electronic signature related to a transaction. This regulatory innovation and clarity has helped Arizona emerge as a choice location for blockchain companies that develop applications based on smart contracts. Ensure there are not regulatory burdens implemented and update statutes as needed with new, emerging technologies.

**FinTech Regulatory Sandbox** – Fintech startups are particularly disadvantaged by the difficulties and costs of complying with conventional state money transmission licensing regimens. Legislation was passed in the 2018 session to create the nation's first state-level regulatory sandbox allowing limited access to Arizona's market for testing innovative financial products or services without first obtaining full state licensure or other required authorization. Innovative initiatives now are allowed to germinate through creation of an "on ramp" or regulatory "sandbox" with exceptions to licensing rules for new companies based on low volumes or limited business activities that pose a lower risk to consumers.

The sandbox and the innovations that emerge will help position Arizona as an innovative hub for financial technology, as well as prove lighter regulation and consumer protection can coexist. The Council will work to publicize the sandbox to help attract new participants and leverage successful outcomes while supporting further efforts of the Arizona Attorney General's Office and Legislature to evolve and improve the program over time. For example, expansion of the sandbox to allow selective insurance offerings and other financial products and services that can benefit from technological innovation.

**Regulatory Reciprocity Between States** – The Council will work with other states and national organizations in establishing common multi-state MTL and virtual money regulation and licensure that would ensure legal and regulatory reciprocity between participating jurisdictions. Companies involved in virtual currency activities are multi-jurisdictional by nature. Any artificial restraints on their ability to operate without regard to geographical boundary within the U.S. adversely impacts the significant costeffectiveness and efficiencies that their business models offer to other businesses.

Money Transmission Licensing (MTL) Regulation – Consider legislation on the application of Arizona MTL law to digital tokens in concert with federal guidance and in cooperation with other states. The application of state MTL regulation should not hinge on the use of fiat currency to purchase a token. Instead, the sale of a digital token for fiat currency should be treated no differently than the sale of any other commodity. A number of states have acted to include or exclude cryptocurrencies or virtual currencies in their MTL laws using broad definitions that essentially include all digital tokens. In essence, this regulates the technology, not how it's used. Also, many tokenized projects currently may have a central issuer or administrator but will become a decentralized, user-run platform once operational, complicating the application of MTL and other state regulations. Pending federal actions regarding the Division of Financial Institutions should be closely tracked as they clarify treatment of the wide array of digital tokens, optimizing Arizona's complimentary state MTL regulation alongside federal evolution.

**Arizona Corporation Commission (ACC)** – Encourage the ACC to work towards utilizing blockchain for corporate records and filings initiating trials and pilots to develop capabilities, gauge future direction, and, when appropriate, inaugurate full-scale initiatives. Examine the potential to issue and trade securities on a blockchain platform. The ACC has opened a docket to examine the use of blockchain technology in Arizona's energy industry to help manage the distributed power generation and storage, transactive energy, renewable energy credits, tokenization, IoT, cybersecurity, and other applications for distributed ledger technologies on the grid.

**State Government Records** – Examine utilizing blockchain by the Arizona executive branch for the management and storage of state government records for cost, efficiency and security considerations; initiating trials and pilots to develop capabilities; gauging future direction; and, when appropriate, inaugurating full-scale initiatives. Offer leadership and assistance to Arizona's counties in digitizing, normalizing and consolidating property records following best practices, and ensuring compatibility with other jurisdictions and open data protocols.

**Decentralized Corporate Structures** – Examine decentralized corporate structures that authorize this new form of business entity and provide clarity and liability protections for participants. Decentralized projects, including those operated via blockchain networks, do not necessarily fit within traditional state corporate structures. As with many regulations that impose auditing/ reporting/record-keeping responsibilities on a central entity, corporate structures generally contemplate a central entity (corporation), or an individual or small group of managers (LLC, LLP, etc.). Decentralized projects don't fit this mold. However, decentralized project participants such as blockchain node operators likely constitute a common law partnership and could be exposed personally to liability.

### **OPTICS, PHOTONICS AND ASTRONOMY**

### PRINCIPLE

Optics, photonics and astronomy are important to Arizona. Combined, they add more than \$4.3 billion to the state's economy and support more than 19,000 jobs. As an enabling technology, optics applications are critical for many other industries, including medicine, mining, aerospace and defense, smart cities and autonomous vehicles.

The University of Arizona holds a worldwide leadership reputation for both optics and astronomy, and provides the academic prowess for related research and development. The two fields also attract and help retain world-class technical talent to the state. The output from optics RandD enables leading products and technologies that enable the many applications that drive robust Arizona companies. Astronomy assets also are heavily engaged in public outreach and informal STEM education for residents and tourists alike.



Vital issues impacting optics range from protecting Arizona's celebrated dark skies, assuring world-class optics workforce readiness, and promulgating commerce-friendly export control reform that promotes global export revenue growth. Representation of the Arizona optics community is being accomplished by Optics Valley, a committee within the Council. Optics Valley's mission is to catalyze, convene and connect a more robust optics industry sector. The policy positions below are intended to support the goals of attracting future investments in optics, photonics and astronomy; and growing a quality workforce.

### POSITIONS

**Dark-Sky** – Establish statewide dark-sky standards or solutions that protect the \$1.5 billion in capital investment in astronomical infrastructure and more than \$250 million in annual economic impact of research and development at astronomy facilities statewide. Advocate for and encourage dark-sky sensitive and appropriate use of LED technology for outdoor lighting as its use becomes increasingly widespread.

**University Research and Development** – Strengthen opportunities to grow the impact of world-class research and development at Arizona's universities.

**NPI and AIM Photonics** – Support the National Photonics Initiative (NPI) and the American Institute for Manufacturing Integrated Photonics (AIM Photonics). NPI is a collaborative alliance among industry, academia and government seeking to raise awareness of photonics — the application of light — and drive U.S. funding and investment in five key photonics-driven fields critical to U.S. competitiveness and national security: advanced manufacturing, communications and information technology, defense and national security, energy, and health and medicine. AIM Photonics is an industry-driven, public-private partnership that focuses the nation's premier capabilities and expertise to capture critical global manufacturing leadership in a technology that is both essential to national security and positioned to provide a compelling return-on-investment to the U.S. economy.

**Export Reform** – Ensure export reform policies support and encourage optics companies to engage in global commercial markets.



### **STATE BUDGET**

### PRINCIPLE

In 2018, Arizona once again had a structurally balanced budget and revenues are projected to be almost \$900 million in additional funds moving into the 2019 legislative session. However, most of that is one-time revenue. Maintaining Governor Ducey's 20x2020 teacher pay plan is of utmost importance in the coming session while still meeting the other critical needs of the state budget, including public safety and maintaining a structurally balanced budget. Additionally, Governor Ducey wants to maintain Arizona's reputation of being a business-friendly state.

Competitive, business-friendly states are those that provide a stable and predictable environment for commerce. Of particular

importance is a state budget and process that is strategic and reliable. The state budget should avoid debt financing for operating expenses or use of fiscally unsustainable accounting gimmicks. It should provide for the core needs of the state and reflect opportunities to leverage technology for greater efficiency and effectiveness of state government without sweeping funds from existing programs.

### POSITIONS

**Angel Investment Tax Credit Program** – Protect the funding for the proven and highly successful Angel Investment Tax Credit for the remainder of the program, and explore opportunities to extend the program beyond the sunset date of June 30, 2021.

**Support ACA Programs and Funding** – Discourage the Legislature from sweeping any funds not used in a particular fiscal year by the Arizona Commerce Authority (ACA). This is destabilizing and tends to create a "use it or lose it" mentality even when conditions warrant funds being carried over to the next fiscal year. Ensure flexibility as warranted within ACA's funding for programs that help it achieve its mission.

**Education Funding** – Fund the state's public education system at all levels — including pre-kindergarten, full-day kindergarten, K-12 and postsecondary — consistently and with accountability within a dedicated and sustainable revenue stream. Short-term reforms should include finding a sustainable and dedicated revenue source for education funding that does not endanger the state's economic climate. The reforms should include funding of K-12 education with a formula such as Proposition 301's that positions Arizona at minimum with mean level funding among the 50 states. Additionally, reforms should consider alternative ideas to appropriately fund pre- and full-day kindergarten, K-12, CTE, dual enrollment with equal access, universities and community colleges. Long-term comprehensive funding reforms should modernize and promote a 21st century delivery model of education that focuses on performance and accountability. Arizona should ensure a highquality education system to attract and retain high-wage jobs and the kinds of businesses that drive the innovation economy.

**Reinvest in Community Colleges** – Recognize the critical role of community colleges in education and workforce development by supporting legislation that will reinvest in and restore state aid to all of Arizona's community colleges and improve and expand the technical education offerings in community colleges. Explore opportunities to create partnerships between companies and community colleges to ensure industry needs are being met and the workforce develops the skills necessary for available jobs.

### TAXATION

### PRINCIPLE

Many taxes, especially those solely targeted at business, may have the effect of limiting potential growth in existing and new technology businesses. Policymakers should strive to institute tax policy that encourages existing businesses to expand; increases Arizona's competitiveness in business attraction, growth and retention; allows for a broad, stable tax base; and ensures similar businesses are treated fairly and equitably.

### POSITIONS

**Business Property Tax** – Pursue the eventual equalization of business and residential property taxes. Although Arizona has begun to reduce business property tax assessment ratios, businesses still faced property tax assessment ratios 80 percent greater than those of residential property owners. **Capital Gains** – Increase the current capital gain deduction from 25 percent to 57 percent to help reduce the advantage enjoyed by other states that have tax systems more closely aligned with the federal government. In most instances, Arizona's tax system conforms with or closely mirrors that of the federal government except in capital gains.

**Data Centers** – Protect Arizona's tax advantages in the exemptions given to promote the retention and expansion of enterprise and colocation data centers, and continue to promote all levels of data center activity, including the migration of technology centers to Arizona.

**Modernize Tax Code** – Promote modifications in the tax code that reflect changing technologies and how products and systems are taxed. Special emphasis should be placed on software and hardware development, as well as digital goods and services that enable the Arizona tax code to remain updated with innovations in the marketplace.

**Small Business Taxation** – Promote a tax code that does not place an undue burden on small businesses to pay for specific state priorities. The tax structure should be fair, and priorities such as education should be funded through a reliable tax base and shared by all in the state.





### **TRANSPORTATION/DIGITAL INFRASTRUCTURE**

### PRINCIPLE

Arizona citizens benefit from improving safety, enhancing mobility, reducing travel time and enhancing commercial opportunities through multimodal corridors linking the state to Mexico, Canada, the Intermountain West and neighboring states. The corridors should include roadways and telecommunications pathways coupled with rail and energy rights-of-way when appropriate. Digital infrastructure is to the 21st century what roads and interstates were to the 20th century. Arizona's ability to sustain long-term growth depends on the ability to link citizens, businesses and institutions via high-capacity broadband, and transform and improve society through information technology and communications.

### POSITIONS

**Support Expansion and Retention of the Data Center Industry** – Promote new innovations and services that expand technology opportunities in Arizona.

**Broadband Support** – Broadband need not only be broadly available and affordable but also robust and redundant to meet the critical requirements of telemedicine, rural community economic development, business operations, workforce attraction and retention, and public safety. Remove or reduce barriers that generate unnecessary costs or delays and otherwise inhibit expansion of privately funded, high-speed digital infrastructure that meets the needs of all Arizonans. Proactively coordinate with government at all levels to ensure rights of way are readily and affordably available, and support fair and predictable government permitting and oversight across jurisdictions to encourage private broadband investment and deployment. Continue easing regulatory burdens and simplifying processes for deployment of wireless sites and vertical infrastructure, including micro-cellular transceivers and distributed access systems (DAS) for necessary densification, in light of the ever-increasing role and importance to our citizens of mobile connectivity, as well as the infrastructure demands of emerging 5G services.

Continue recent broadband strategic planning efforts to engage providers, communities, institutions and other stakeholders that generate actionable strategies and the development of broadband initiatives. Establish, adequately staff and fund an Arizona Broadband Office with an advisory body of diverse stakeholders who manage and oversee the statewide expansion of broadband. The office should help coordinate, maximize and leverage the use of E-Rate funding, identify and seek broadband grants and other special funding, advance and keep current state broadband mapping capabilities that support regional and local governments in their planning efforts, identify opportunities for increased private broadband investment and deployment, and encourage publicprivate partnerships where advantageous.

Work with the Arizona Broadband Office and Governor's office to implement a plan for broadband deployment to rural areas and drive regional and local government policies that encourage investment — including access to the use of right of way, infrastructure undergrounding requirements, mobile infrastructure expansion and expedited/blanket building permit issuance. Arizona communities should encourage local broadband deployment by streamlined and consistent processes for right of way use, planning and permitting to align with neighboring jurisdictions and best municipal practices. To help facilitate broadband deployment to rural areas, ensure that the Arizona State Land Department has fair valuation of ROW costs; and the Bureau of Land Management, Bureau of Reclamation, government water conservation districts, government irrigation districts, and other state/federal agencies have timely permitting processes.

The state should adopt digital government best practices for internal operations and delivery of citizen services while driving the increased use and adoption of high-capacity digital connectivity and technologies across major application sectors, including



education, health care, public safety, e-commerce, e-government, remote work and mobile enablement.

**National Public Safety Broadband Network** – Leverage new FirstNet-driven infrastructure improvements, including fiber extensions, tower construction and small cell deployment, that will additionally benefit broadband expansion for any and all purposes in rural communities. The National Public Safety Broadband Network, more commonly known as FirstNet, was approved by all 56 states and territories to provide interoperable public safety communications for first responders. The Arizona Technology Council supports policies for cost-effective and timely FirstNet deployment through easing regulatory requirements such as permitting and right of way access, as well as public safety agency adoption of the service that will provide extended benefits to rural Arizona.



### Modern Surface Transportation System – Support

modernization of the state's transportation infrastructure to improve mobility, move freight to market faster and advance international trade. The upgraded system should include federal and state funding for Interstate 11, which will enhance the state's connectivity by linking Phoenix and Las Vegas. Encourage multimodal linkages with rail, telecommunications, and energy rights of way and facilities. Further, I-11 should be extended south of Phoenix to create an important international freight corridor between Mexico and the Intermountain West. Modernization should also include technology upgrades to support smart transportation systems and vehicles.

**Transit** – Support transit-related systems and development that add to the quality of life for Arizona residents and visitors, reduce traffic congestion, improve air quality, and provide enhanced workforce mobility.

**Vehicular Technologies** – Continue to support a flexible and competitive environment for the testing and deployment of autonomous automobile and other vehicular technologies in the state that can help make Arizona's roads safer, increase mobility and make the state a test bed for many emerging technologies.

**Transportation Funding Formula** – Support reforming the formula to more appropriately fund transportation needs across the state. The current formula is nearly 25 years old and today provides a fraction of the funding level originally intended. Rural communities and the highways that connect Arizona to the world outside of the urban areas have been particularly hit hard by the lack of a modern funding formula.

**Arizona Ports of Entry** – Focus on encouraging both infrastructure investments and process improvement for Arizona's ports of entry along our southern border to better enable and optimize commercial transportation logistics. Despite being critical links, the ports of entry are frequent bottlenecks for smooth and timely logistics of cross-border transportation of goods. To help, the state should encourage:

• **Targeted Funding** – Identify funding streams that support the development and modernization of border infrastructure, particularly at our ports of entry. While there is a big push for the Donations Acceptance Program to support infrastructure needs at ports of entry, it is structured so U.S. Customs and Border Protection simply receives the contributions and excuses the federal government from its responsibilities at the border. The program should be more of a public-private partnership, not necessarily focused on donations or a fee structure, which discriminate against smaller ports in smaller communities.



- Additional Staffing Fulfill the need for additional staffing desperately needed at our ports of entry. For Arizona, that means a full-time equivalent vacancy rate of 20 percent, or approximately 250 funded positions. U.S. Customs and Border Protection is unable to fill positions due to a burdensome vetting process plus a polygraph test exceeding standards of other intelligence and enforcement agencies, including the U.S. Drug Enforcement Administration, CIA and FBI. It is impossible to seek out new positions until the current vacancies are filled.
- **Promote Border Jobs for Veterans Act** Work with U.S. Customs and Border Protection and the U.S. Department of Defense to create a streamlined process for veterans to apply for Customs and Border Protection positions. The Border Jobs for Veterans Act has created a mechanism for military to transition into these enforcement jobs but the program is not well known and needs ongoing support and promotion. Veterans have the training and skills that make them ideal candidates for these jobs.
- Access to Capital Provide border-based businesses with access to needed capital. Much has been made of the border flight by the three biggest U.S banks — Chase, Bank of America and Wells Fargo, respectively — leaving many border-based businesses without access to working capital and lines of credit.

- **Recognition as Assets** Recognize the U.S. border and ports of entry as valuable assets essential to the national and North American economies rather than additional expenses in the federal budget. With current North American Free Trade Agreement trade volumes of more than \$1.2 trillion annually, we fail to maximize the opportunity for investment, job creation and economic security.
- **Process Improvements** Continue to improve processes related to commercial carriers. For example, Unified Cargo Processing, which enables U.S. and Mexican customs inspectors to work side by side on the inspections process, has revolutionized the border. Begun here in Arizona, the joint inspection program saves trucks hours in crossing the border. Other simple process improvements such as more collaborative cargo and truck inspection processes by federal, state and Mexican authorities can reduce the need for physical infrastructure and quicken crossing times.

**Long-term planning** – Work with executive and legislative leadership, as well as other key stakeholders, to develop long-term improvements in transportation funding, including consideration of fuel tax, license renewal fees, locally generated sales tax initiatives, public-private partnerships, and other components of a funding package.

### **UNIVERSITIES AND HIGHER EDUCATION**

### PRINCIPLE

The Council actively works to support Arizona's universities and improve the technology infrastructure upon which they rely. Its members and the state rely heavily upon Arizona's universities and community colleges to provide a highly-skilled and talented workforce.

In addition, the universities provide a world-class platform for research and development, which can be translated into commercial opportunities that include the transfer of technology to Arizona's private sector. The universities engage the communities throughout the state and rely upon technology to provide education, research and other valuable community services.

### POSITIONS

**Stable Funding, Enhanced Flexibilit**y – Collaborate with the Arizona Board of Regents and the public universities to build upon the existing strengths of the university system and ensure world-class research capabilities, access for qualified students and excellent workforce preparation. Support the universities' state budget requests and legislative priorities, secure the state's financial relationship with the university system as one that is based on per resident student funding, and obtain support for critical capital.

**Enterprise Model** – Support an enterprise model of operations, which recognizes and advances each university and its differentiated mission.

• Allow the university system to negotiate its own health benefits to ensure it is only paying proportionally for its share of the state benefits plan.

**Sun Corridor Network** – Encourage policies that enable the Sun Corridor Network, the Arizona universities' research and education collaborative network, to flourish. A robust Sun Corridor Network enables discovery, innovation, and research outcomes among postsecondary researchers and educators. This infrastructure is critical to attracting world-class researchers and research funding to Arizona. A future-proofed K-12 education technology infrastructure is essential to enable modern digital learning technologies and methods necessary for a workforce equipped for the knowledge-based economy.

Support the Sun Corridor Network's public-private partnership strategy to bring high bandwidth access to Internet2 — the national education/research network and community — and the commercial Internet to the Arizona K-20 community. Support the network's leadership and participation in the Interstate 40 Corridor Project along with regional partners from California, New Mexico and Nevada that could facilitate establishment of new public-private partnerships, leading to the improvement of rural broadband network capacity and availability across the region. Successful rollout of these strategies will enable the Sun Corridor Network and its member universities — Arizona State University, The University of Arizona and Northern Arizona University — to bring better and low-cost Internet and Internet2 access to K-12 schools, higher education, and other institutions and government entities by leveraging economies of scale and shared infrastructure while driving better broadband availability for all.

### ARIZONA TECHNOLOGY COUNCIL LEGISLATIVE PRIORITIES – 2019

• Restore fourth-year career and technical education (CTE) funding for programs that take four years to complete in key industries crucial to Arizona's continued economic development such as engineering and manufacturing.

- Consistently and sustainably fund the state's education system, including pre-K, K-12, CTE, equitable access to dual enrollment, and postsecondary programs, including keeping the 20% percent teacher raise by 2020.
- Ensure funding for computer science teacher training, aligned with the new Arizona K-12 computer science standards, so there can be a wider deployment of computer science classes for students across the state.
- Look for opportunities to continue proven economic development programs, such as the Angel Investment Tax Credit and current levels of the Research and Development Tax Credit.
- Support improvements to Arizona's tax system that strengthen competitiveness, fairness and are predictable, specifically:
  - o Ensure Arizona conforms to the recently-passed federal tax law changes;
  - Support statutory clarification concerning the taxation of digital goods and services;
  - o Support legislation that ensures Arizona conforms to the U.S. Supreme Court's Wayfair decision that allows states to tax remote sellers.
- Promote the adoption of necessary statutes, guidelines, rules or agency positions that are needed to allow Arizona to leverage the federal rulemaking that enable associations to provide substantially enhanced Association Health Plans (AHPs) that will offer cost-effective health benefits to their members.
- Support the efforts of Arizona's Institute of Automated Mobility and work to help advance all aspects of automated vehicle science safety and policy with the integration of technology into Arizona's transportation systems.



### ARTIFICIAL INTELLIGENCE PRINCIPLE

Artificial Intelligence (AI), computerized systems that perform tasks we normally associate with people, is science fiction no more. It is commonplace — think talk-to-text, web searches, photo tagging or fraud detection — growing and becoming increasingly sophisticated. AI can be applied in ways that help society tackle some of its biggest problems. It can be harnessed to make driving safer and medical diagnoses more accurate, fight human trafficking, counter cyberattacks, unleash scientific discovery, enable farmers to increase crop yields, help investors maximize returns, and help athletes prevent injury. Moreover, AI will augment human abilities in ways that increase productivity, which will foster widescale economic progress.

At the same time, AI will present new ethical challenges and automate broad categories of jobs, which will cause fundamental shifts in the ways people live and work. To make sure we can harness all of AI's benefits while easing any negative impacts, governments must pursue policies that enable the continued development of AI technologies, mitigate any impacts from increased automation, and protect individual rights and freedoms.

### POSITIONS

**Foster Innovation and Open Development -** To better understand the impact of AI and explore the broad diversity of its implementations, public policy should encourage investment in AI research and development (RandD). Governments should support the controlled testing of AI systems to help industry, academia and other stakeholders improve the technology.

- Fuel AI innovation Public policy should promote investment, make available funds for RandD, and address barriers to AI development and adoption.
- Address Global Societal Challenges AI-powered flagship initiatives should be funded to find solutions to the world's greatest challenges such as curing cancer, ensuring food security, controlling climate change and achieving inclusive economic growth.
- Allow for Experimentation Governments should create the conditions necessary for the controlled testing and experimentation of AI in the real world, such as designating self-driving test sites in cities.
- **Prepare a Workforce for AI** Governments should create incentives for students to pursue courses of study that will allow them to create the next generation of AI.
- Lead by Example Governments should lead the way on demonstrating the applications of AI in its interactions with citizens and invest sufficiently in infrastructure to support and deliver AI-based services.
- **Partnering for AI** Governments should partner with industry, academia and other stakeholders for the promotion of AI and debate ways to maximize its benefits for the economy.

**Create New Human Employment Opportunities and Protect People's Welfare** – AI will change the way people work. Public policy in support of adding skills to the workforce and promoting employment across different sectors should enhance employment opportunities while also protecting people's welfare.

• **Encouraging Human Employment** – Governments should implement programs to mitigate AI's impact on jobs and devise policies that promote employment. These programs



should particularly focus on the effectiveness of incentives in government funded infrastructure projects.

• **Retraining** – Governments should implement policies that support the upskilling and reskilling of the workforce. This is particularly true in job areas that are less likely to be automated, such as positions focused on person-to-person interaction and "guided computation" in which individuals direct and oversee the operation of the technology.

**Liberate Data Responsibly** – AI is powered by access to data. Machine learning algorithms improve by analyzing more data over time. Data access is imperative to achieve more enhanced AI model development and training. Removing barriers to the access of data will help machine learning and deep learning reach their full potential.

- Keep Data Moving Governments should eliminate unwarranted data localization mandates and enable secure international data transfers through international agreements and legal tools.
- Open Public Data While protecting privacy, governments should make useful datasets publicly available when appropriate, and provide guidance to startups and small and medium businesses for its reuse.
- Support the Creation of Reliable Datasets to Test Algorithms – Governments should explore non-regulatory methods to encourage the development of testing datasets.
- Federate Access to Data Governments should partner with industry to promote AI tools to access encrypted data for analysis while not requiring transfer of the data.

**Rethink Privacy** – Privacy approaches like the Fair Information Practice Principles and Privacy by Design have withstood the test of time and the evolution of new technology. But with innovation, we have had to rethink how we apply these models to new technology.

- Adopt Robust Privacy Laws Based on the Organization for Economic Co-operation and Development (OECD) Fair Information Practice Principles.
- **Implement Privacy by Design** Rethink privacy approaches to implement Privacy by Design into AI product and project development.
- **Keep Data Secure** Policies should help enable cutting-edge AI technology with robust cyber and physical security to mitigate risks of attacks and promote trust from society.
- It Takes Data for AI to Protect Data Governments should adopt policies to reduce barriers to the sharing of data for cybersecurity purposes.

### **Require Accountability for Ethical Design and**

**Implementation** – The social implications of computing have grown and will continue to expand as more people have access to implementations of AI. Public policy should work to identify and mitigate discrimination caused by the use of AI and encourage designing in protections against these harms.

- Standing for Accountable Artificial Intelligence Governments, industry and academia should apply the Information Accountability Foundation's principles to AI. Organizations implementing AI solutions should be able to demonstrate to regulators that they have the right processes, policies and resources in place to meet those principles.
- **Transparent Decisions** Governments should determine which AI implementations require algorithm explainability to mitigate discrimination and harm to individuals.

As AI continues to advance and become increasingly deployed and utilized, these principles and recommendations will continue to evolve. This is just the first step towards the Arizona Technology Council engaging in AI policy discussions with governments and other organizations regionally and nationally.



### FINANCIAL TECHNOLOGY (FINTECH)

### PRINCIPLE

Distributed ledger technology (DLT), otherwise known as blockchain, is perhaps the most talked about yet most misunderstood emerging technology in the world today. Since its inception, secure DLT has widely been viewed through the lens of virtual currencies, particularly the hype surrounding the buying and trading of Bitcoin and other digital coin offerings. Indeed, surveys have shown that consumers are largely aware of what Bitcoin is but do not know about or understand the blockchain technology that powers it.

Blockchain has the potential to revolutionize many sectors of the U.S economy if the proper legislative and regulatory measures are taken to enable and foster its development. The technology brings significant efficiencies to not only currency and financial transactions but also asset ledgers, global supply chains, IoT data collection and decentralized social networking.

### POSITIONS

The Arizona Technology Council suggests policymakers consider developing policies and regulatory structures for FinTech and blockchain environments that encourage developers and market participants to continue innovating and providing solutions that will aid the public sector in achieving its mission and goals. To do so, policymakers should understand the promise, the uses and the questions that blockchain currently presents. The Council supports:

- Securities Law Clarification The linchpin for tokenized projects in the United States is the application of federal securities law to token sales. Initial coin offerings (ICOs) have arisen as forms of crowdfunding for blockchain projects through the sale of digital tokens, many without adherence to federal securities law. But if conducted properly, ICOs are legitimate forms of crowdfunding. The U.S. Securities and Exchange Commission (SEC) and Congress should recognize this and develop rules that make these forms of fundraising responsible yet accessible. Additionally, not all initial token sales are ICOs and the SEC has yet to issue formal guidance for blockchain innovators seeking to make tokens available for use on functional blockchain platforms. In the absence of such guidance, many innovators have left U.S. markets to launch their projects overseas. The SEC should work with Congress and stakeholders to create a responsible framework for regulating ICOs, as well as utility tokens as differentiated from their regulation of security offerings.
- Regulatory Sandboxes To help manage risk, drive economic development and develop a strong regulatory regime, the Council recommends the federal and state governments consider creating blockchain and emerging technology "regulatory sandboxes" and create an environment allowing the development and growth of companies with limited regulatory roadblocks that allow innovators to test different applications of blockchain. This will help foster U.S. innovation to keep pace in dynamic international markets and lead to development of many new use cases. Federal agencies should issue broad regulatory waivers for state sandbox participants and exemptions for transactions occurring within state regulatory sandboxes, exerting a light regulatory touch on nascent state blockchain initiatives. We also encourage adoption of an agencywide federal sandbox so

innovators can take full advantage of this testing model nationwide and internationally, ensuring legal and regulatory reciprocity between participating jurisdictions.

- Creation of a Federal Blockchain Stakeholders Advisory Group

   This group consisting of private industry, academia, non-profits, and trade associations would be responsible for examining aspects of the blockchain technology ecosystem to include:
  - o Current and future security requirements
  - o Regulatory environment
  - o Standards and interoperability
  - o Defined marketplace and potential for disruption
  - o Current use of blockchain technology by federal agencies
- **Pilot Toolkit** The Council champions the use of a pilot toolkit, one of the more effective methods to help incorporate blockchain technology. When considering the creation of a toolkit, the Council recommends an organization focuses on:
  - o The reason why your organization would need blockchain.
  - o The workings of the blockchain protocol and technological framework options.
  - o Your organization's information technology environment.
  - o How to develop sophisticated applications.
- **Federal Government Records** Federal agencies and Congress should examine utilizing blockchain for the management and storage of government records for cost, efficiency and security considerations. Trials and pilots should be initiated to develop capabilities, gauge future direction and, when appropriate, inaugurate full-scale initiatives.



### **DATA BREACH NOTIFICATION**

### PRINCIPLE

There is currently no national standard for how a company must notify its customers in the wake of a data breach. Instead, companies must navigate a complex web of different, often conflicting, regularly changing notification laws for each state in the aftermath of a breach. With the increasingly mobile and decentralized nature of our economy, data storage and dissemination technologies, it can be nearly impossible for companies to determine which state laws apply when a breach occurs. The current regulatory landscape not only places an immense financial compliance burden on businesses but also delays the process of getting information into the hands of those who need it most: customers whose data was compromised.

### POSITIONS

A national standard for data breach notification would provide consumers and businesses with consistency and predictability on how consumer notice must be provided. Until Congress passes a national standard, the Council and its membership continue to advocate for the following in breach notice bills:

- •"Harm" Trigger for Acquired Data The notification requirement should be triggered when there is a real risk of actual harm, not a theoretical concept that could lead to excessive notification about data breaches that really aren't harmful.
- No Private Right of Action Individuals should not be able to sue companies that have suffered a data breach for actions covered by federal data security and data breach notification laws. Businesses that have suffered breaches are victims of criminal activity.

- Narrow Definition of "Personal Information" To avoid excessive notification of consumers and unnecessary costs, the definition of "personal information" in the legislation should not include information accessible through public records. For example, merely the combination of a name, address and birthdate should not qualify as personal information.
- **Preemption of State Laws** Any federal data security and data breach notification law should preempt state laws and requirements. Without strong preemption language, the compliance burden for small businesses would not be alleviated and the effectiveness of any law would be significantly undermined.
- Exemption for Use of Technology that Renders Data Unusable or Unreadable – Federal legislation should include an exemption from notification requirements for companies that utilize technologies to render data unusable or unreadable. This exemption should be technology-neutral.
- Limits on Financial Penalties Massive financial penalties are unwarranted and could force small businesses out of existence. Penalties should be reasonable and take into account the size of the company that suffered the breach and the type of data accessed.
- No Fixed Data Security Requirements Data security requirements should not be specifically enumerated within the legislation. Benchmark security standards of today may become outdated over time, requiring companies to possibly maintain outdated systems because of government mandate.
- No Overly Burdensome Notification Requirements Data breach notification legislation should avoid overly prescriptive notification requirements. In the event of a breach, companies

should dedicate their resources to efforts that most directly notify and protect consumers. Additional requirements, such as those mandating the creation of call centers or the provision of credit reports, would divert resources away from small businesses seeking to protect and inform their customers.

- **Reasonable Notification Time Frame** Legislation should require a reasonable time frame for notification, which would include allowances for risk assessment without requiring a specific time limit that must apply to every case.
- **Take Other Laws into Account** Companies that are subject to other data security and/or breach notification laws such as the Health Insurance Portability and Accountability Act, Gramm-Leach-Bliley or the Fair Credit Reporting Act should be exempt from these requirements.

### **DIGITAL GOODS AND SERVICES**

### PRINCIPLE

According to recent data, 88 percent of Americans are using the Internet and over 200 million Internet users will make an online purchase this year alone.<sup>1</sup> The digital economy continues to play a strong role in both the growth of the Internet and the ability for businesses to better deliver digital goods and services.

Given the importance of the digital economy to the Arizona Technology Council's member companies and the need to ensure we can continue to foster innovation and economic growth within this sector, the Council strongly supports the Digital Goods and Services Tax Fairness Act. This legislation will prevent hurdles to growth and create a much-needed tax framework that will provide certainty to consumers, providers and state/local governments while preventing duplicative and discriminatory taxes. The Council opposes taxes on digital products. However, for those jurisdictions that have opted to impose these taxes, we recognize the need to provide consistency and simplicity across state borders. There should never be a situation when multiple jurisdictions can tax the same digital good or service, and a framework must be established to ensure that a single purchase is sourced in one state, not multiple states.

<sup>1</sup> Pew Research Center "Internet/Broadband Fact Sheet." January 12, 2017. http://www.pewinternet.org/fact-sheet/internet-broadband/



### POSITION

The Council supports legislation such as the Digital Goods and Services Tax Fairness Act. This legislation would provide consistency in determining which jurisdiction can tax a transaction (at the appropriate sales tax rate), and prohibit unfair and unrelated discriminatory taxes. While the Council opposes taxes on digital products, we do support legislation that would provide consistent treatment across state lines when digital products are taxed by state or local jurisdictions. The Digital Goods and Services Tax Fairness Act addresses our concerns by accomplishing two key objectives:

• The legislation sources the purchase of a digital good or service to the consumer's home address, not the location of the consumer at the time of downloading a product or the location of the server. Therefore, only one state would have the ability to tax the transaction — if that state chose to do so. Congress took a similar approach in 2000 when it passed the Mobile Telecom Sourcing Act, which essentially sourced wireless and mobile telecommunications services to the consumer's home address to eliminate confusion around which taxing jurisdiction had the right to tax wireless services. • The legislation would prohibit discriminatory taxes. If a state decides to tax a downloadable song, for example, the rate should be the same as if that same song was purchased in a "brick and mortar" store. Prohibiting discriminatory taxes simply brings parity between digital products and their tangible counterparts.

Consistent with our support for the Digital Goods and Services Tax Fairness Act, the Council calls on states to reject new taxes on electronically transferred digital products and electronically delivered services such as data processing, hosting and related services. Such a broad expansion of the sales tax base to include electronically transferred goods and services, particularly those that are actually business inputs, is bad public policy and will result in multiple and discriminatory taxation.



### **IMMIGRATION REFORM**

### PRINCIPLE

Our current immigration system is broken and causing the United States to lag behind in a competitive global marketplace for talent. By not addressing the failings of our immigration system, we are threatening our future productivity, ingenuity and the competitiveness of key sectors of our economy, including and especially technology.

### POSITIONS

### Increase Green Cards for High-Skilled STEM Graduates

 The Arizona Technology Council supports increased access to permanent resident, or green, cards for high-skilled STEM graduates by expanding the exemptions and eliminating the annual per country limits for employment-based cards.

### Create New Visas for U.S. Educated Students and

**Entrepreneurs** – These new visas will help fill the thousands of IT-related jobs currently open, furthering opportunities for starting and growing new businesses in the United States.

**Market-Based Visa Caps** – Using market-based caps on H1B visas are the best way to adjust to the supply and demand in the U.S. economy.

**Growing Domestic Sources of Talent** – The Council, the member companies and the affiliated Creating IT Futures Foundation are strongly committed to improving U.S. science, technology, engineering and mathematics (STEM) education and encouraging more young Americans to choose careers in those fields. Key to that effort is encouraging federal, state and local investment in STEM curriculum for students from kindergarten through high school with a structured pipeline to higher education. The Council is uniquely positioned at the intersection of innovation, education and economic growth. We support policies that expand lifelong education and promote a skilled workforce that spurs job growth and our ability to compete globally. Quality education, worker training — and retraining — will help ensure the availability of a skilled and competitive workforce.





### INTERNET OF THINGS

### PRINCIPLE

The Internet of Things (IoT) is a series of smart devices connected to one another and to analytics and hosting platforms via the Internet. As IoT continues to grow, challenges and opportunities will arise. Central to the continued growth of IoT are policy principles that are transparent on privacy issues, highlight security in the IoT lifecycle, and stress open standards. The Arizona Technology Council urges policy makers and regulators to tread lightly in this space, which is still in an early stage of development, so innovation and the attendant societal benefits will continue to flourish.

### POSITIONS

**Regulatory and Legislative Moderation** – The Council supports a federal strategy for IoT that harmonizes guidelines for IoT devices across all agencies and industries. To accomplish this, Congress must pass legislation that will direct one agency to lead the discussion. The Developing Innovation and Growing the Internet of Things (DIGIT) Act, for example, would place the US Department of Commerce in this role. Congress should, however, avoid broad legislation regulating IoT, particularly regarding privacy and data security practices. We already have federal and state privacy and data security laws on the books, and passing IoT-specific legislation will only serve to stifle innovation in a nascent industry. Instead, multi-stakeholder groups involving actors from government and industry should work together to develop guidelines and industry best practices in this space based on existing privacy and data security laws and frameworks. The Council supports both the National Telecommunications and Information Administration (NTIA) IoT security multi-stakeholder process as well as the National Institute of Standards and Technology's IoT Cybersecurity Framework.

**Broadband** – The Council supports deployment of a robust broadband infrastructure to support the IoT. To accomplish this, we need support from federal, state and local governments to assist in facilitating broadband deployment.

**Spectrum** – To support the growth in IoT devices, the Council believes the federal government needs to make more spectrum available for both licensed and unlicensed use without placing technology-specific restrictions on how it can be used.

**Regulatory Sandboxes** – To incentivize more IoT innovation and experimentation, companies need to be assured that the risk/ reward balance is favorable. To help manage risk, drive economic development and develop a strong regulatory regime, the Council recommends the federal and state governments consider creating IoT regulatory sandboxes. These sandboxes would provide a set of pre-approved, published rules that allow companies to test their products and business models. The rules would help limit exposure, and provide innovative best practices and steps for testing them.

**Privacy and Data Security** – Congress should avoid broad IoT-specific legislation regarding companies' privacy and data security practices. A number of federal and state privacy and data security laws and guidelines are already on the books and provide a sufficient framework to regulate IoT at this time. That said, industry can and should lead with respect to "design by security" and risk mitigation to provide businesses, government and citizens with maximum trust in IoT.

**Standards** – We support a multi-stakeholder approach for setting voluntary IoT standards for interoperability. We are concerned that without agreed-upon standards, we could encounter a problematic piecemeal regulatory approach that stifles innovation in the industry.

**Research and Development** – We support a federal government position that emphasizes research and development in the form of federal grants to help facilitate public-private partnerships. Of particular interest are grants focusing on cyber-related IoT RandD.

**Governance** – A key component of the federal IoT ecosystem is a well-structured governance model. Following the Senate's DIGIT Act, we support a governance structure led by the US Department of Commerce that incorporates all federal agency stakeholders.



### **OFFICE OF TECHNOLOGY ASSESSMENT**

### PRINCIPLE

The impact of and reliance on technology for America's economic prosperity and national security has grown tremendously over the last decade. As this reliance has grown, so has the cybersecurity threat. Cybersecurity breaches are becoming more devastating in their scale and cost. Several global players are threatening U.S. dominance in science, technology and innovation. In traditional areas of national security and economic dominance, our technological advantage is eroding. New technologies are presenting new challenges in security and privacy, and an increasingly complex regulatory environment requires more expertise than Congress currently has. These concerns are only increasing in frequency and the stakes are getting higher. Congress needs a nonpartisan body within its ranks that can provide detailed advice on technology and innovation.

### POSITION

The Council recommends Congress reestablish and restore funding for the Office of Technology Assessment (OTA). In particular, the Council would like to see the Office reestablished with a renewed focus on areas where expertise is most needed in Congress: understanding emerging technologies and cybersecurity. The Council supports the initial legislative steps that were taken by Congress in 2018 to examine the idea of reestablishing the office. The current legislation requires the Congressional Research Service to examine the need for an additional entity to bestow technological guidance. The legislation also requires the Government Accountability Office to evaluate how to give its technology assessment program increased visibility and relevance.

The Office of Technology Assessment (OTA) was an office of the U.S. Congress from 1972 to 1995. OTA's purpose was to provide congressional members and committees with objective and authoritative analysis of the complex scientific and technical issues

(i.e., technology assessment) of the late 20th century. It was a leader in practicing and encouraging delivery of public services in innovative and inexpensive ways, including early involvement in the distribution of government documents through electronic publishing. OTA's model was widely copied around the world.

### FEDERAL GOVERNMENT INVESTMENT IN RESEARCH AND DEVELOPMENT

### PRINCIPLE

We are living in an era where innovation, agility and imagination are all essential in order to keep pace with exponential technological transformation taking place in our society. In government, federal agencies are playing catch-up from years of underfunded research and development (RandD) impacted by economic constraints and sequestration while other nations have increased their public and private RandD investments at a faster rate. There is a longstanding notion that RandD is the backbone of a globally competitive, knowledge-driven economy. In 2010, economist Gary Becker stated that "modern economies are based on the command of knowledge and information." It is essential that the U.S. sustains its investment in RandD.

Michael D. Griffin, the new Under Secretary of Defense for Research and Engineering, has placed an emphasis on emerging technology with supporting RandD budget. Griffin stated, "The reality is that we live in a time of global access to technology and global access to scientific talent. It is no longer preeminently concentrated here in America. Innovation will remain important, always, but given this global dispersion of technology and talent, greater speed in translating technology into fielded capability is where we can achieve and maintain our technological edge."



This is good news as the government invests and partners in programs and solutions for some of our greatest challenges, including cybersecurity, smart cities, big data, quantum computing, space exploration, health and medicine, blockchain, artificial intelligence, and the Internet of Things.

Continued RandD investment will help drive innovation and spur competitiveness.

### POSITIONS

The Council supports increases in RandD funding that support advancements in big data, cloud computing, high performance computing, automation, artificial intelligence, biometrics, blockchain technology and cybersecurity (as it relates to emerging technologies and services). In particular, we support increases to the following federal RandD budgets:

 Networking and Information Technology Research and Development Program – NITRD is a federally-funded program designed to increase coordination, productivity and effectiveness among federal agency RandD efforts in networking and IT. This program can be successful in helping to drive innovation as long as it has an adequate budget.

- Defense Advanced Research Projects Agency DARPA has helped drive innovation on a number of issues, including connected vehicles, spectrum, cybersecurity, the Internet of Things and blockchain technology.
- National Labs and Federally Funded Research and Development Centers – FFRDCs are the nation's RandD incubators and have compiled a treasure trove of technologies and applications for defense and the civilian interests. The benefits of the labs' role include experienced capability in rapid prototyping of new technologies ready for transitioning, showcasing and commercialization.
- **Small Business Innovation Research Program** SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization.

### REFORM THE ELECTRONIC COMMUNICATIONS PRIVACY ACT

### PRINCIPLE

The Electronic Communications Privacy Act (ECPA) was originally passed in 1986 when email and text messaging were still nascent technologies, and deemed all stored electronic communications over 180 days old to be "abandoned." Under ECPA, law enforcement and government agencies can acquire these abandoned emails and text messages from a service provider without a warrant but simply with a subpoena to obtain access. The House unanimously passed the Email Privacy Act, an ECPA reform bill, in both April 2016 and February 2017 but the bill has repeatedly stalled in the Senate Judiciary Committee and hasn't received a floor vote.

### POSITIONS

ECPA must be reformed to require government agencies and law enforcement to obtain a warrant to compel service providers to disclose the contents of emails, text messages, and other private communications stored by a service provider.

Specifically, the Arizona Technology Council supports:

• Congress Should Pass the Email Privacy Act as Passed by the House in 2017 – The Email Privacy Act, which unanimously passed the House in February 2017, was the product of a carefully negotiated compromise between industry, public interest groups and House Judiciary Committee staff. Despite overwhelming support for the bill, several members of the Senate Judiciary Committee have continued to hold up the bill with unrelated amendments opposed by both industry and the public interest community. Congress should pass this bill in 2019.

- No Civil Agency Exceptions Some civil agencies such as the SEC have asked for an exception to the warrant requirement because they do not have the ability to issue warrants. Such an exception would destroy the benefits gained by ECPA reform. It would erode privacy by codifying new powers for civil agencies that they do not already have. Civil agencies can still get access to emails and texts by serving subpoenas on users, not service providers.
- No Emergency Exception Under current practice, the government may request digital content from providers by declaring an emergency situation. Providers then may decide whether to comply based on the circumstances. However, there has been a push to require providers to comply any time the government declares an emergency. This has dangerous potential for abuse. Service providers don't want to be responsible for derailing criminal investigations but requiring compliance with "emergencies" means the government simply needs to declare an emergency to get the information it wants.

### **SMART CITIES AND COMMUNITIES**

### PRINCIPLE

While cities and communities are making progress toward improving living standards, and social and environmental sustainability, the impact can be limited by narrow project scopes and obsolete systems. Cities and communities can accelerate and enhance the results of their efforts by adopting a smart cities and communities approach with supporting technologies.

### POSITIONS

Federal investment in smart cities and communities will help drive economic growth and innovation, create jobs, promote citizen services, and increase adoption of smart technology products and services. The Arizona Technology Council supports the Smart Cities and Communities Act of 2017, whose primary focus is to help coordinate the various federal agency smart city initiatives, as well as create a technology demonstration grant program. The Council also supports the Smart Technology for Resilient, Efficient, Economic and Reliable Transportation in Cities and Communities (STREET) Act that will provide grants to small and medium-sized cities on a competitive basis. In addition, we support the creation and focus of the Congressional Smart Cities Caucus.

Additional Background: Smart cities and communities use information and communications technology to enhance their livability, workability and sustainability. They collect information using sensors, devices and other systems, and send the data to analytics systems to understand what's happening now and what's likely to happen next.

Most cities greater than 750,000 in population have at least one but usually multiple smart city projects underway in one sector or another. But few cities and communities have comprehensive, long-term, integrated plans. In fact, there are only a handful of cities worldwide well on their way to a full adoption of smart cities technology in an integrated way across all sectors. Also, many of the real-world smart city examples are typically much larger or smaller than how we traditionally define cities. They're either occurring on a more regional basis or as small neighborhood-byneighborhood projects.

There is vast potential to provide smart city and community benefits to a larger number of citizens and those advantages are immense. First is the potential to empower citizens, allowing access to unparalleled services provided by local government. These services — spanning several different sectors including transportation, energy, water management and public safety  have the potential to be transformational to the citizen while creating significant efficiencies for the city and community.

Another possibility is the creation of new jobs. As cities grow their smart technology and services capabilities, there are several emerging employment opportunity sectors:

- **Infrastructure** Cities will need to have large teams to help deploy the vast array of sensors that will constitute the Internet of Things (IoT) smart city and community ecosystem.
- **Cybersecurity** With Internet-connected sensors, best-in-class cybersecurity solutions and applications are absolute necessities. A well-trained workforce will need to implement the cyber solutions across the infrastructure ecosystem.
- Analytics An immense amount of data coming from IoT sensors will need to be analyzed. City governments will need to beef up their analytical capabilities to ensure their citizens gain the most benefits from the analyses.



### 

### FREE UP SPECTRUM FOR INNOVATION, RURAL BROADBAND, 5G AND IOT

### PRINCIPLE

Wireless broadband use has skyrocketed in recent years, and demand for wireless data is expected to continue to grow exponentially in the coming years. Wireless speeds also are increasing, and in some rural areas, wireless broadband may be a better long-term solution to broadband access than wireline. However, there simply is not enough available spectrum to meet this coming demand, even as unlicensed spectrum begins to carry more and more of the wireless traffic. The growth of the Internet of Things market is creating even more demand for data, and the number of IoT devices in use will continue to increase. 5G networks also will require use of a variety of different spectrum bands, combining low-, mid- and high-band spectrum.

Auctioning more spectrum licenses alone cannot meet the evergrowing demand for data. Unlicensed spectrum is an essential complement to licensed spectrum. As Congress, the Federal Communications Commission (FCC) and NTIA work to make new spectrum bands available for wireless use, some bands simply cannot be cleared and auctioned. Instead, they are usable only when shared with incumbent users in an unlicensed capacity. Unlicensed spectrum can be used for Wi-Fi, Bluetooth, offloading wireless traffic, and providing broadband in rural areas. It also allows companies that cannot afford to purchase spectrum licenses to use spectrum in new, innovative ways.

### POSITIONS

Congress, the FCC, NTIA and other government agencies must do everything within their power to make more spectrum available for licensed, unlicensed and lightly licensed use. Specifically, the Arizona Technology Council supports:

- More Federal Spectrum Available for Both Licensed and Unlicensed Use Without Technology-Specific Restrictions on its Use – The federal government is the largest holder of spectrum suitable for wireless use, and even its officials would admit the government is not using the spectrum efficiently. Clearing and auctioning spectrum (as we saw in the Advanced Wireless Services (AWS) auction) is one effective way to get spectrum to market but it is too costly in many situations. We must come up with new, creative ways to get government spectrum in the hands of those who need it most, be it for licensed or unlicensed use, without placing technology-specific restrictions on how it may be used.
- **Moving Forward on 5 GHz** The FCC already has made great strides on freeing up unlicensed spectrum in the 5 GHz band but it should continue to work towards making spectrum available for unlicensed use in the U-NII-4 band.
- Continuing to Pave the Way for 5G The FCC took a major step towards making 5G a reality with its Spectrum Frontiers Order, which opened up nearly 11 GHz of licensed and unlicensed spectrum for flexible-use wireless broadband. However, there is still work to be done. The FCC also has several ongoing proceedings focused on making mid-band spectrum available for both licensed and unlicensed use. We hope it continues to progress on the 3.7-4.2 GHz band and the 6 GHz band.



### **AFFILIATE NEXUS TAX**

### PRINCIPLE

With the explosive growth in the e-commerce marketplace, there never has been a greater need for reasoned and competitive tax policies that promote research and development, innovation, and entrepreneurship. It is estimated that nearly two-thirds of Americans shop online, generating e-commerce sales of more than \$127 billion in the second quarter of 2018. There also are no signs that this economic engine is slowing down. Nearly 20 percent of all retail sales are expected to be conducted online by 2022.

In June 2018, the U.S. Supreme Court handed down its decision in the South Dakota v. Wayfair, Inc. case. The court ruled the state of South Dakota can require out-of-state retailers to collect and remit online sales taxes. This decision effectively overturns Quill's physical presence standard. The ruling also is a win for states and localities across the country that have been seeking creative avenues to force online sellers to collect and remit sales taxes.

Both Congress and state legislatures will face decisions in coming months over how and, in some cases, whether to respond now that the long wait for the South Dakota v. Wayfair ruling is ended. While the 5-4 decision opens the door for states to require out-ofstate online retailers and other remote sellers to collect sales tax from their customers, questions have started swirling about what might come next as states start to take advantage of the opinion. Lawmakers from both parties have acknowledged that they are interested in following up on the court's ruling with state legislation.

Congress hasn't given up completely on the idea of taxing Internet sales across state lines. In September 2018, Rep. Jim Sensenbrenner (R-WI) introduced the Online Sales Simplicity and Small Business Relief Act. The bill would ban states from retroactively imposing sales tax collection duties on remote online sellers; require all states to push back economic nexus implementation dates to January 1, 2019; and establish a small seller exemption, meaning a remote seller with gross annual receipts below \$10 million in the U.S. would not be required to collect and remit sales tax. Other original cosponsors of the bill included Reps. Anna Eshoo (D-CA), Jeff Duncan (R-S.C.) and Zoe Lofgren (D-CA).

### POSITIONS

The Council supports solutions that:

- Do not increase the compliance burdens on small and mediumsized businesses.
- Ensure sellers can continue to sell their goods and services across state lines.
- Foster online commerce.
- Create a seller exemption for small business.
- Protect businesses from new and costly regulations or taxes. The debate surrounding the collection and remittance of online



sales taxes should be refocused to balance the needs of states to collect these taxes with the ability of businesses to cover these new compliance costs. States need to collect sales and use taxes owed but the costs associated with moving this compliance burden from individual taxpayers onto businesses also must be considered.

### USE OF CONSUMER AND ENTERPRISE UNMANNED AERIAL VEHICLES

### PRINCIPLE

Unmanned aerial vehicles (UAVs, also known as drones) offer immense opportunities for innovation, from cargo delivery to emergency response to simply photographing places where humans cannot travel. UAV innovation is occurring at a breakneck pace. However, regulations are not in place currently to allow UAV use in many innovative ways. The Federal Aviation Administration (FAA) released its Small UAS Rule in June 2016, which limits UAV use to visual line of sight during the day and away from people. While a great first step, these rules still prevent UAVs from being used for a number of enterprise purposes.

### POSITIONS

The Arizona Technology Council supports a much broader use of UAVs than the FAA permits in its new rules. Congress and the FAA have demonstrated interest in crafting rules for enterprise uses of drones but there is much to be done before they are put in place. We believe Congress and the FAA should strive to establish flexible rules that allow enterprise UAVs to go beyond line of sight and above populated areas. Further, Congress and the FAA should work to continue to develop standards for airspace management to allow for safer, broader operation of UAVs.

The Council supports and advocates for policy changes that will not only embrace but encourage the growth of the UAV industry. These include measures to:

- Permit the operation of small UAVs beyond visual line of sight.
- Support the development of infrastructure to safely manage the widespread use of low-altitude airspace.
- Enable broader unmanned aircraft systems (UAS) access to commercial mobile services and unlicensed spectrum vital to the safe and widespread integration of UAS.
- Embrace the carriage and delivery potential of UAV technology in a wide array of capacities ranging from humanitarian aid to commercial operations.

The Council believes government must implement thoughtful regulations that reflect and anticipate the rapid growth of the industry. Ultimately, the Council supports policies that enable rather than hinder use of UAVs, and advocates for risk-based regulations that allow the safe and expedited integration of small UAVs into the national air space.



### **U.S. - CHINA TRADE**

### PRINCIPLE

China is one of the world's largest markets for the information and communications technology (ICT) sector, and one that American technology companies cite as a priority for their global operations and competitiveness. As China aims to make itself a technology leader of the future, it is rolling out a high volume of programs — often in an opaque manner — to achieve its goals. As part of its policies, China is also encouraging if not requiring the transfer of technology and IP to Chinese joint venture entities.

In March 2018, the Office of the United States Trade Representative issued the report "Findings of the Investigation into China's Acts, Policies, And Practices Related to Technology Transfer, Intellectual Property, and Innovation Under Section 301 of the Trade Act of 1974." The report indicates the U.S. economy has suffered from Chinese policies, including its unfair forced technology transfers that require U.S. and other foreign firms to transfer sensitive technology to the Chinese government. President Donald Trump signed a proclamation directing his administration to take a range of actions in response to the report, including imposing tariffs on identified imports from China.

**Update:** Three tranches of tariffs have been levied as of July 6, August 23 and September 24, 2018. Tariffs are in place on many tech-related products and components, including printer parts; integrated circuits; semiconductor devices; thermostats; and computer equipment used in cloud, AI and blockchain technology. President Trump has indicated a list of \$267 billion in imports from China could be subject to tariffs next.

### POSITIONS

While the administration's investigation into China's intellectual property (IP) practices provides for tools to resolve this longstanding issue, tariffs and an ineffective trade war only will punish U.S. consumers and companies while doing little to actually change China's trade practice.

The best solution to stopping China's IP theft practices and forced technology transfer policies is by working with Congress to develop a comprehensive strategic policy that can effectively address those longstanding challenges in China. We urge Congress and the administration to do that, and to continue negotiating with China while collaborating with our allies that face the same challenges.

Recommendations for Chinese reforms to address trade and investment barriers would require China to:

- Provide U.S. cloud service providers with full and nondiscriminatory market access.
- Allow cross-border data transfers for business purposes.
- Halt all draft measures and standards that require or encourage the disclosure of IP, source code or enterprise standards.

- Immediately notify all Chinese government subsidies related to ICT industries, including those specified within the Made in China 2025 initiative to both the United States and the World Trade Organization. China would further terminate prohibited and trade-distorting subsidies.
- Mandate Chinese enterprises to halt infringement and/or misappropriation of IP.

### **GLOBAL DIGITAL TRADE**

### PRINCIPLE

As U.S. business operates in a global digital environment, information, goods and services cross borders more frequently and easily than ever before. Firms selling goods or providing services digitally have taken local and national markets to a global scale. Many governments have responded to these changes by seeking to control digital trade in blunt and disruptive ways. Some of these rules are responsive to legitimate public policy goals but others are explicitly protectionist.

Global digital trade is crucial to today's economy. Current laws, regulations and trade agreements often lag behind the fast-paced developments through the emergence of the Internet and thereby enabled business practices. Regulators and policy makers should acknowledge the need for a comprehensive set of rules addressing issues of the digital economy, including commitments to open and free Internet access that combats restrictions on cross-border data flows, data localization requirements, and other barriers to digital trade with cutting-edge obligations.

### POSITION

As part of the offensive trade strategy, the Council works to ensure the free and open transfer of data around the world and opposes localization measures and other national security overreaches that pose a threat to the technology industry. We advocate for inclusion of these newly established principles designed to promote the digital economy in ongoing trade negotiations and other international fora. As international fora consider e-commerce and other work streams to address digital trade, the Council will determine, with member input, where to engage in a meaningful way.



### UNITED STATES-MEXICO-CANADA Agreement (USMCA)

### PRINCIPLE

In August 2017, the Trump administration commenced negotiations with Canada and Mexico to modernize the North American Free Trade Agreement (NAFTA). The Arizona Technology Council through CompTIA developed recommendations for a new NAFTA, filed comments through the Federal Register Notice and testified at the public hearing.

**Update:** On October 1, 2018, the U.S. Trade Representative officially released the language for the trilateral trade deal between the U.S., Mexico and Canada called the United States-Mexico-Canada Agreement (USMCA). President Trump and his counterparts from Canada and Mexico were expected to sign the deal by the end of November. Once the agreement is signed, the president has a 60-day window to deliver a report to Congress on the changes to U.S. law that would be required to implement the agreement. The USMCA must be ratified by each country's legislature. Entry into force will occur on the first day of the third month after notification by the last party to implement the agreement under its domestic law. U.S. midterm elections, as well as resolution of remaining issues on the Section 232 steel and aluminum tariffs that President Trump has levied against Canada, Mexico, and the European Union may complicate ratification.

Priority objectives for Council members in the USMCA include market access, customs and trade facilitation, rules of origin, digital trade, government procurement and IP.

### POSITIONS

The Council supports the renegotiation of NAFTA with the following objectives:

- Retain existing provisions that have worked well for the technology industry, as outlined in the Council's NAFTA recommendations.
- Increased opportunities for market access.
- Digital trade commitments that ensure free flow of data and prevent localization.

### WORKFORCE DEVELOPMENT — CYBERSECURITY

### PRINCIPLE

Our cybersecurity infrastructure is under constant attack from nation states, organized crime groups and rogue individuals who wish to do our nation harm. The federal government is struggling to recruit and retain the talent needed to protect against and respond to these attacks. In July 2016, the Office of Management and Budget released a memo outlining a federal workforce strategy as it relates to the cybersecurity. According to the memo, "These cyber threats demonstrate the need for critical security tools, and equally as important, the need to employ the Federal civilian cybersecurity workforce with the necessary knowledge, skills, and abilities to use those tools to enhance the security of the Federal digital infrastructure and improve the ability to detect and respond to cyber incidents when they occur."

### POSITIONS

The Arizona Technology Council supports expanding and enhancing the federal cyber workf

- Updating existing laws to ensure the government is able to use authorized and appropriated funds for a build-out of its cyber workforce.
- Eliminating unnecessary roadblocks to recruitment of cyber professionals.
- Expanding the government's use of industry-recognized credentials as a way to professionalize the cyber workforce.
- Ensuring all future cyber workforce legislation includes avenues for both training and certification.

### WORKPLACE

### PRINCIPLE

The Arizona Technology Council is committed to fairness, equality and non-discrimination in the workplace for all individuals.

### POSITION

**Non-Discrimination Principles** – Encourage policy makers to embrace basic principles for non-discrimination that are critical to attract and maintain a competitive workforce, especially in the technology sector. Support non-discrimination statutes to be inclusive of gender, religion, sexual orientation, gender identity, nationality, disability and age for employment, housing and public accommodations. Individuals each have their own unique identity and experience to draw upon, and can thrive when in an environment of acceptance innovation.





### **ABOUT THE ARIZONA TECHNOLOGY COUNCIL**

The Arizona Technology Council is the driving force behind making our state the fastest growing technology hub in the nation, connecting and empowering Arizona's technology community. As Arizona's premier trade association for science and technology companies, the Council is recognized as having a diverse professional business community. The Council offers numerous events, educational forums and business conferences that bring together visionaries, leaders, and innovators to make an impact on the technology industry. Council members work toward furthering the advancement of technology in Arizona through leadership, education, legislation and social action. These interactions contribute to the Council's culture of growing member businesses and transforming technology in Arizona. For more information about membership or attending an event, please visit aztechcouncil.org.

### **PHOENIX**

2800 North Central Avenue • Suite 1530 Phoenix, Arizona 85004

602.343.8324

TUCSON

1215 East Pennsylvania St. • Suite 122 Tucson, Arizona 85714

520.382.3281

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