

GOVERNOR'S TASK FORCE ON EMERGING TECHNOLOGIES

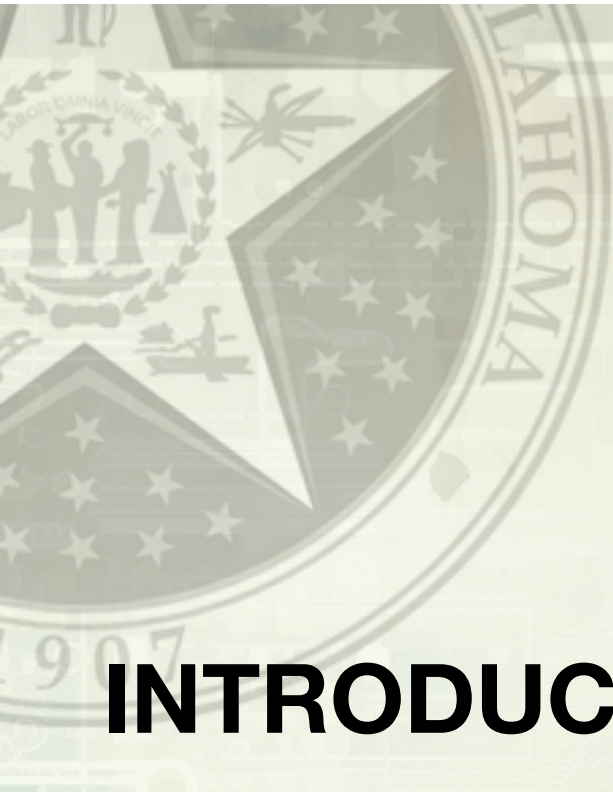
ARTIFICIAL INTELLIGENCE SUPPLEMENTAL STRATEGY TO SUPPORT BUSINESSES IN OKLAHOMA

A Forward Thinking Approach

December 29, 2023

PRESENTED BY:

FPOV
FUTURE POINT OF VIEW



INTRODUCTION

The advent of Artificial Intelligence (AI) presents transformative opportunities for enhancing public and private sector operations, decision-making, and service delivery. Embracing this technological revolution, the State of Oklahoma is committed to becoming a global leader in the responsible adoption and application of AI. This document establishes a strategic pathway for advancing AI initiatives to support economic growth, while ensuring its use aligns with our core values.

This supplemental document is aligned to the Governor’s Task Force on Emerging Technologies: Artificial Intelligence Strategy to Support State Agencies in Oklahoma which was produced in response to Executive Order 2023-24 issued by Governor J. Kevin Stitt on September 25, 2023. It is intended to assist in aligning existing public-private initiatives and identify the possibility of new initiatives to leverage AI more effectively than other states, improving the lives of all Oklahomans while upholding the highest standards of ethical responsibility, inclusivity, and accountability. The document establishes four specific goals for the advancement of AI within the State of Oklahoma, these include economic enhancement, ethical AI implementation, educational and professional development and fostering innovation.

This document outlines the principles and practices that can guide Oklahoma's journey towards a future where AI increases economic opportunities, safeguards individual rights, and contributes to the well-being of all citizens. It can serve as a blueprint for a technologically enhanced future.



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A letter from our Chairman

As the Chief Information Officer and the Chairman of the Governor's Executive Task Force on Emerging Technology, I am excited to share an exciting vision for our state: a future powered by Artificial Intelligence (AI). This transformative technology holds immense potential to shape Oklahoma's prosperity, improve our lives, and propel us forward.

Imagine personalized education tailored to each student's needs, advances in health care, safer roads with AI-powered traffic management, smarter cities that respond to citizens' needs in real-time, and a thriving environment protected by AI-powered monitoring and early-warning systems. These are just glimpses of the future we can build with AI, a future where every Oklahoman benefits from its revolutionary power.

But realizing this future requires strategic action and practical steps. We need to invest in our people, training the next generation of Oklahomans to not just utilize but build and innovate with AI. We must build a robust digital infrastructure that empowers AI solutions and ensures equitable access for all. And we need clear guidelines and regulations to ensure AI is used ethically and responsibly, always serving the best interests of Oklahomans. By embracing AI with intention and purpose, we can unlock its boundless potential and build a brighter future for generations to come.

Through this task force, we have brought leaders from across government, the private sector, education, and commerce, to help develop a strategy. This strategy will allow Oklahoma to lead by harnessing the power of AI to build a smarter, healthier, and more prosperous state. But this is only the beginning of our journey. It will take continued investment and leadership to ensure that every Oklahoman can reap the benefits of this emerging technology, creating a future where innovation thrives and opportunity flourishes.

Joe McIntosh, Chief Information Officer for the State of Oklahoma

THE VISION

Establish Oklahoma as the top state in the responsible, safe, secure, and proactive use of Artificial Intelligence in order to make government more efficient, improve education, prepare our workforce for tomorrow's economy, and encourage innovation to build new technologies, fostering a brighter future for all Oklahomans.

Goal 1: Economic Enhancement

Increase Oklahoma's investments in advanced AI infrastructure to stimulate economic growth and technological leadership. This initiative aims to boost local tech sectors and foster an environment ripe for business innovation.

Objectives:

1. Enhancing AI Infrastructure
2. Leveraging Energy Surplus and Location
3. Creating a Favorable AI Investment Environment

Goal 3: Education and Professional Development

Integrate AI education in Oklahoma across all levels, from K-12 to higher education, and launch workforce retraining programs. These efforts are designed to prepare current and future generations for the evolving AI-centric job market.

Objectives

1. Empowering Teachers and Students
2. Expanding Awareness and Fostering Interest
3. Re/Up-Skilling the Workforce

Goal 2: Ethical AI Implementation

Enhance Oklahoma's commitment to developing a robust ethical framework for AI, emphasizing transparency, accountability, and data protection to ensure AI technologies can be proactively used and with respect to individual rights and societal values.

Objectives:

1. Ethics and Governance Framework
2. Strategic Planning
3. Digital Workforce Assistance

Goal 4: Fostering Innovation

Support AI innovation in Oklahoma by encouraging R&D, fostering academia-industry-government partnerships, and aiding startups. This initiative aims to make Oklahoma a hub for cutting-edge AI solutions and technological creativity.

Objectives

1. Amplifying an Ecosystem of Growth and Investment for Startups
2. Boosting Tech Awareness and Competitive Innovation
3. Fostering Academia-Industry Partnerships

STRATEGIC DRIVERS

Technological Competitiveness and Economic Imperative:

In the dynamic landscape of Artificial Intelligence (AI), Oklahoma recognizes the potential for technological advancement to enhance its economic prowess. Acknowledging the transformative power of AI, the State is poised to explore new opportunities and apply these innovations to key industries outlined in the Oklahoma Science and Innovation Strategic Plan and other economic development efforts including, aerospace and defense, advanced air mobility and autonomous systems, agriculture, bioscience, and logistics, among many others. Embracing AI promises to keep Oklahoma technologically competitive and is vital to its economic growth and diversification. This approach is key to realizing the State's potential as a leader in the digital era, driving forward its economy and securing its place on the global stage.

Workforce Transformation and Skills Gap:

As AI revolutionizes industry demands and job roles, the imperative of bridging the skills gap is paramount for Oklahoma's economic resilience and societal prosperity. By proactively aligning with the rapidly changing AI landscape, Oklahoma is poised to cultivate a workforce that is versatile, robust, and steeped in advanced skills and innovative thinking. This imperative goes beyond mere technical expertise, requiring a culture of adaptability, problem-solving, and creative innovation. Mastering this transition positions Oklahoma's workforce at the vanguard of future industries and economic frontiers, equipped to spearhead groundbreaking developments. The result is a future marked by heightened employment opportunities, economic diversification, and a workforce that stands as a leading light in the high-tech domains of tomorrow.

Ethical and Societal Adaptation to AI:

As AI is increasingly ingrained into the fabric of daily life, the imperative for its ethical application and societal impact becomes a cornerstone of Oklahoma's technological journey. Vigilantly addressing these ethical dimensions is crucial, serving both to uphold public confidence in technology and align AI's trajectory with the core values of Oklahoman society. By adeptly steering through these ethical challenges, Oklahoma is on the path to becoming a vanguard in championing and actualizing responsible, people-focused AI practices. This commitment paves the way for an AI ecosystem that excels in innovation while being inclusive and respectful of individual rights and community well-being. The profound impact of this leadership will position Oklahoma as a hub for ethically driven AI enterprises, foster a technology ecosystem that aligns seamlessly with societal values, and place the State at the forefront of setting both national and international standards in AI ethics.

GOAL 1

Economic Enhancement



IMPERATIVE:

What is needed

Oklahoma's economy requires a significant boost through Artificial Intelligence (AI) driven technological innovation to establish itself as a leader in the sector. The State needs to enhance its AI infrastructure, capitalize on its energy surplus and strategic location, and create an attractive investment environment for AI enterprises. This is essential for nurturing a thriving tech ecosystem and ensuring long-term economic growth.



SOLUTION:

How we can achieve

Invest in state-of-the-art AI infrastructure and leverage its energy resources and geographic advantages. The State will implement policies and incentives to attract AI investments and entrepreneurs. Efforts will include upgrading digital infrastructure, providing tax incentives, and facilitating partnerships between tech companies and local businesses.



IMPACT:

How results better Oklahoma

By becoming a hub for AI innovation and business, the State can expect increased job creation in high-tech sectors, a more diversified economy, and a stronger position in the national and global technology markets. This will also catalyze further investments and innovations, creating a self-sustaining cycle of growth and technological advancement.

Objective 1.1: Enhancing AI Infrastructure

Investing in high-speed computing and enhancing connectivity robustness are key steps for Oklahoma to fortify its AI infrastructure. This endeavor extends beyond simply upgrading current digital frameworks; it entails launching new initiatives to guarantee access to high-performance computing resources across the State. This robust infrastructure is crucial for the support and development of sophisticated AI applications and research. It lays the groundwork for a strong technological base, paving the way for AI-driven innovations and breakthroughs in various sectors. This strategic investment positions Oklahoma at the forefront of technological advancement, enabling the State to harness the full potential of AI and its transformative impact.

Investing in technology infrastructure, through direct or public-private partnerships, would provide the State's AI industry with the tools necessary for innovation and development. As AI companies develop new applications, industries in the State gain the advantage of early adoption through proximity and geographic partnerships. According to a survey of organizational leaders, 64% believe they face a risk from competitors using AI faster than they do¹. Meanwhile, 84% of executives believe they must leverage AI to achieve their growth objectives and 75% believe they risk going out of business if unable to scale AI in the next five years². Companies located in states with lacking or over-regulated technology infrastructure will be exploring new locations to relocate for survival. With a strong and robust technological infrastructure, Oklahoma can become one of the most desirable locations for these companies to settle.

GOAL 1: Economic Enhancement

Objective 1.2: Leverage Energy Surplus and Location

Oklahoma's energy surplus is a substantial asset for AI and data center industries. This abundance of energy would provide a consistent and cost-effective power solution vital for data centers and AI technologies, which require continuous and intensive energy consumption. Furthermore, Oklahoma's geographical positioning at the center of the United States is a major strategic benefit. This central location ensures optimal data transmission speeds across the country, essential for AI applications that depend on rapid data processing and dissemination. This geographic advantage increases efficiency and reduces operational delays which would be advantageous for the real-time functionalities of AI systems.

According to a report from the U.S. Chamber of Commerce, which draws on data from the U.S. Chamber Technology Engagement Center, the average data center adds \$32.5 million in economic activity to its local community each year. They also find that during construction, these data centers generate an additional \$9.9 million in revenue for state and local governments. This is in addition to the \$77.7 million in wages and \$243.5 million in the local economy's supply chain during the construction³.

The surplus of energy and geographic advantages provided by the State could attract AI computing centers to locate in Oklahoma as electricity capacity would not be a limiting factor. As an investment destination for AI, the State of Oklahoma would garner new opportunities for citizens and benefit from additional tax revenues.

Objective 1.3: Creating a Favorable AI Investment Environment

Oklahoma's initiative to create a regulatory environment that nurtures AI development and implementation is pivotal for its technological and economic progression. This approach involves streamlining regulations to promote an innovative and investment-friendly atmosphere for AI technologies. Central to this strategy is growing existing grants and incentives and establishing new public-private partnerships. Such partnerships are instrumental in building a cooperative ecosystem that attracts AI-focused enterprises and startups to the State. This strategy not only catalyzes economic growth but also propels ongoing technological advancements. By fostering a supportive regulatory framework and cultivating strong industry collaborations, Oklahoma can position itself as a thriving hub for AI innovation and a leader in the national AI landscape.

For firms to make capital investments in a locale, they must believe that a positive public-private partnership exists. Simplifying regulations and providing incentives would lower the cost of production and increase prospects for AI-related technologies. The public stands to benefit from lowered costs and increased access to these technologies with such incentives. Additionally, it has been shown that without this public partnership, private firms under-invest in R&D⁴. Thus, in absence of public-private partnership, the State would not realize the return and dissemination of technological advances of companies specializing in AI development and implementation.

GOAL 2

Ethical AI Implementation



IMPERATIVE:

What is needed

Oklahoma must navigate the intricate balance of harnessing AI's potential while safeguarding ethical standards. This involves creating a framework that not only guides AI development and usage but also ensures equitable and secure access to necessary data, all while upholding transparency, accountability, and the protection of privacy and individual rights.



SOLUTION:

How we can achieve

Establish a detailed ethics and governance framework for development, use, and deployment of AI. This will involve setting up regulatory bodies, creating ethical guidelines, and developing standards for operation of AI systems.



IMPACT:

How results better Oklahoma

By implementing these measures, the State will foster a trusted AI environment where ethical practices are the norm, enhancing both public confidence and the responsible use of AI technologies in alignment with societal values and individual rights.

Objective 2.1: Ethics and Governance Framework

For the responsible development and implementation of AI systems in Oklahoma, a comprehensive ethical framework is imperative. This framework would emphasize respect for human rights, transparency, accountability, privacy, fairness, non-discrimination, public participation, and the option for human alternatives. Sound data governance and privacy guidelines would help to safeguard personal data and promote ethical data usage. The framework should also advocate for public involvement and oversight in AI deployment to confirm that AI serves public interests, upholds democratic values, and allows individuals the option to opt out of automated decisions in favor of human alternatives. The State's framework would outline the various risks associated with AI (algorithmic discrimination, privacy, security, reliability, etc.) and present a vast array of mitigation strategies to ensure its responsible utilization. Incorporating these elements creates a comprehensive guide for organizations looking to ethically develop and deploy AI systems.

Objective 2.2: Strategic Planning and Oversight

To proactively integrate AI across government agencies and economic initiatives, Oklahoma should centralize strategic oversight while distributing AI governance within each State agency. The State would empower agency leadership to monitor their effective and responsible use of AI applications. Developing AI expertise within State agencies will be crucial for the ethical implementation of AI. Each agency should maintain dynamic five-year strategic plans focused on effectively and responsibly utilizing AI and emerging technologies to serve constituents.

GOAL 2: Ethical AI Implementation

This decentralized approach enables tailored strategies that align with the unique needs and goals of each agency, fostering innovation and efficiency in public services. Collaborating with local industries positions the State as a valuable partner for both established enterprises and startups. Through such partnerships, Oklahoma can provide essential support to constituents and local industries for the planning and implementation of responsible AI practices. This collaborative effort both enhances the State's technological ecosystem and offers a model for responsible AI integration, benefitting organizations across various sectors.

Objective 2.3: Digital Workforce Assistance

Oklahoma is poised to play a key role in the digital transformation of the workforce by providing a foundation to support the incorporation of digital full-time employee (FTE) equivalents through the use of AI systems. Recognizing the potential of AI and its impact on the workforce, the State can provide frameworks to organizations that integrate these digital FTEs into their operations. This approach not only enhances the technological capabilities of businesses but also fosters a more innovative and efficient work environment.

In parallel, Oklahoma can focus on upskilling current workforce members to effectively manage, supervise, and oversee the AI systems that can function as digital FTEs. By providing training and development programs to the workforce, the State would promote necessary skills to harness the full potential of AI. This strategy optimizes the use of AI in the workplace while contributing to job retention and career advancement for workers. Such initiatives demonstrate Oklahoma's commitment to fostering a tech-savvy workforce and supporting businesses in their digital transformation journey, making the State an attractive destination for companies looking to develop and leverage cutting-edge AI technologies.

“AI has the potential to revolutionize the way our society operates. The private sector is already finding ways to use it to increase efficiency. Potential exists for the government to use AI to root out inefficiencies and duplicate regulations, and it is an essential piece of developing a workforce that can compete on a global level.”

- Governor Stitt

GOAL 3

Education and Professional Development



IMPERATIVE:

What is needed

Oklahoma must equip its current and future workforce with AI knowledge and skills to stay competitive among evolving employment needs. Integrating AI education at all levels, reskilling the existing workforce, and alignment to the constituent business objectives are essential for this transformation.



SOLUTION:

How we can achieve

The State strategies for AI incorporate AI learning modules into K-12 and higher education curricula and the augmentation of current programs for reskilling workers for utilizing and excelling with AI. Efforts will also focus on increasing AI awareness and interest across all age groups.



IMPACT:

How results better Oklahoma

An exemplary workforce proficient in AI, capable of driving innovation and economic growth in Oklahoma, while additionally ensuring long-term employability and adaptability of the State's workforce in the face of technological advancements.

Objective 3.1: Empowering Teachers and Students

The implementation of AI programs in K-12 education within Oklahoma is crucial for sparking early interest and proficiency in AI among students. These programs will equip students with critical thinking skills about AI's societal role, a deep understanding of its mechanisms, and the ability to apply AI principles across various disciplines. Early exposure to AI sets the stage for advanced studies and careers in technology, and would position Oklahoma as a leader in creating a technologically adept workforce. Accessible programs should democratize AI knowledge, ensuring equitable access for students from diverse backgrounds and abilities. Training teachers in Oklahoma to utilize AI in course design allows for tailored instruction, meeting each student's unique learning needs and enhancing educational outcomes. Using AI in the classroom also provides a more engaging and interactive experience. In addition to the instructional benefit, AI's role in easing administrative burdens lets educators focus more on student engagement and curriculum enhancement. AI complements traditional teaching methodologies, enabling a hands-on learning approach where students can experience the benefits of AI's practical applications. Empowering teachers and students with AI would position Oklahoma as a trailblazer in educational innovation and propel Oklahoma's workforce toward a future of innovation and progress collaborating with AI.

Development of AI and other machine learning technologies requires a workforce with a particular skill set. With the currently low level of high school students graduating college prepared to study in science, technology, engineering, and math (STEM) fields, the State of Oklahoma should invest in both common and higher education systems in order to increase the aggregate level of STEM knowledge.

GOAL 3: Education and Professional Development

Additionally, Oklahoma should promote STEM skills and related fields of study to students and residents across the State. A state with a technologically minded workforce would be very attractive to AI companies looking for an environment in which to invest their capital.

In addition to the investment in STEM education, the State would incorporate guidelines into their educational objectives for co-working between traditional fields and AI. Simulations demonstrate that an AI outperforms human financial analysts when information is more transparent and voluminous⁵. However, the human analysts remained competitive when institutional knowledge was needed, such as with the input of alternative data. The highest potential for gains in accuracy comes about when the skills of human input and AI are complementary. Hence, the greatest growth potential can be realized through education on co-working with AI.

Objective 3.2: Expanding Awareness and Fostering Interest

Public events focused on skills, awareness, and interest in Artificial Intelligence can enhance public engagement and understanding of AI in the State of Oklahoma. Organizing events like talks, seminars, demonstrations, and hackathons, serves to stimulate interest and understanding around AI in the general population. These events would promote knowledge exchange, skill development, and innovative thinking, fostering an environment where AI is not only understood but also appreciated by the public for its potential impact on various aspects of life and work. By actively participating in these events, citizens gain firsthand experience and insights into AI, enabling them to navigate and contribute to an AI-driven world. Such initiatives are instrumental in building a community that is well-versed in AI, thereby creating a robust foundation for a technologically advanced and future-ready Oklahoma. Through public events, AI becomes a shared topic of interest and exploration, paving the way for a society that is aware and engaged in shaping the AI landscape.

Objective 3.3: Reskilling and Up-Skilling Workforce

Providing affordable and accessible AI skill training programs to workers is a fundamental tenet of developing a workforce proficient at adapting to and excelling in an AI-driven economy. By offering such training, Oklahoma would address the potential challenges posed by AI-driven automation and job transformation, helping to ensure that its workforce is prepared to leverage AI for career advancement and innovation.

Offering incentives to businesses that provide AI skills training represents a strategic initiative by the State of Oklahoma to encourage the upskilling of the current workforce. This approach is instrumental to promote a culture of continuous learning and adaptation among businesses and employees in a rapidly evolving technological landscape.

Establishing partnerships with colleges and technical schools for the provision of AI education and training would be a vital step for the State of Oklahoma. These collaborations bridge the gap between theoretical academic knowledge and the practical, hands-on skills required in the field of Artificial Intelligence. Through these partnerships, a new generation of professionals will be meticulously prepared, not just in the theoretical aspects of AI but also in its practical applications and innovations.

GOAL 4

Fostering Innovation



IMPERATIVE:

What is needed

Oklahoma must create an ecosystem that nurtures AI innovation, facilitating the growth of startups and encouraging creative technological solutions. This requires developing a supportive environment for research and development, enhancing collaborations between academia, industry, and government, and providing incentives for responsible experimentation and innovation.



SOLUTION:

How we can achieve

The State would implement strategies to foster a conducive startup ecosystem, offering incentives like public contests and exhibitions, and providing support for responsible AI experimentation. Additionally, Oklahoma should promote co-op opportunities between universities, research institutions, and industry partners to spur collaborative innovations.



IMPACT:

How results better Oklahoma

These initiatives will transform Oklahoma into a thriving hub for AI innovation, attracting investment and talent, and fostering a culture of cutting-edge technology and creative solutions. This will not only bolster the State's economic growth but also position it as a leader in AI and technological advancements.

Objective 4.1: Amplifying an ecosystem of growth and investment for Startups

Oklahoma's commitment to fostering a conducive startup ecosystem for AI companies is pivotal to attract growth and investment in this burgeoning sector. By focusing on creating a supportive environment, the State can become a hub for AI innovation and entrepreneurship. Oklahoma can boost the AI startup landscape by promoting increased collaboration between the public sector, educational institutions, and private enterprises in addition to infrastructure development and talent cultivation. This approach would stimulate local economic growth and position Oklahoma as a leading player in the AI industry, attracting national and international attention and investment. Oklahoma could expand its industry incentive models to better align with emerging technology industries. Incentives should be specialized for the technology and AI sectors and distinguished from existing incentive structures. Further specializing these incentives would cater directly to the rapidly growing technology sector, providing tailored support and benefits that resonate with tech companies, startups, and information-based businesses.

Objective 4.2: Boosting Tech Awareness and Competitive Innovation

To foster innovation and technological growth, Oklahoma would promote events like public contests, exhibitions, and showcases, to create platforms for innovators and entrepreneurs to demonstrate their ideas and compete. This approach would encourage a culture of creativity and competition among emerging tech sectors. Alongside these public events, the State should expand its efforts to support to startups through resources and assistance for responsible experimentation.

GOAL 4: Fostering Innovation

This could include access to research facilities, financial incentives for research and development, and facilitating collaborative projects with academic institutions. These combined efforts would not only position Oklahoma as a dynamic hub for technology and entrepreneurship but also attract new talent and investments, strengthening its reputation as a leader in promoting both cutting-edge innovation and ethical technology development.

Objective 4.3: Fostering Academic-Industry Partnerships

Oklahoma has the potential to catalyze innovation and industry progress by incentivizing cooperative opportunities between academic research institutions and various industries. Acknowledging that students engaged in academic research are often at the forefront of technological advancements, the State could play a pivotal role in bridging the gap between academic research and industry application. By offering incentives to both academic institutions and industries, Oklahoma could foster collaborations that not only drive innovation but also accelerate the translation of academic research into practical, market-ready solutions.

Such partnerships would be mutually beneficial: industries gain access to cutting-edge research and a talent pool of well-educated students, while academic institutions receive industry insights and potential funding for further research. This synergy would also enhance the skills and experience of the student workforce, making them more adaptable and proficient for future industry roles. Fostering these partnerships would advance the State's technological capabilities and strengthen its workforce, making Oklahoma a hub for innovation and a leader in AI-driven academic and industry collaboration.

Citations

¹ Future Point of View (2023). Humalogy Trends Report. <https://fpov.com/wp-content/uploads/The-FPOV-Humalogy-Trends-Report.pdf>

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⁴ STIGLITZ, J. E., & WALLSTEN, S. J. (1999). Public-Private Technology Partnerships: Promises and Pitfalls. *American Behavioral Scientist*, 43(1), 52-73. <https://doi.org/10.1177/00027649921955155>

⁵ Cao, Sean S. and Jiang, Wei and Wang, Junbo L. and Yang, Baozhong, From Man vs. Machine to Man + Machine: The Art and AI of Stock Analyses (May 5, 2021). Columbia Business School Research Paper, Available at SSRN: <https://ssrn.com/abstract=3840538> or <http://dx.doi.org/10.2139/ssrn.3840538>

Future Point of View (FPOV), an Oklahoma based firm and a global leader in strategy development, was instrumental in the process and provided support for the Task Force in the development of the strategy and the supplemental documents. FPOV leverages their broad expertise across industries and public sectors globally to develop future-focused strategies on two, five, and ten-year horizons. This includes working with organizational leadership on financial forecasts, emerging technology, cultural adaptation, and artificial intelligence to propel organizations through an increasingly complex and technologically infused world.

Through 20 years of operation, the firm continues to serve a wide range of organizations and industries with the mission to create world-class strategies that drive compounding results for its clients.

