Consumer Technology Association

2023 CTA
U.S. Innovation
Scorecard



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About Consumer Technology Association:

As North America's largest technology trade association, CTA® is the tech sector. Our members are the world's leading innovators — from startups to global brands — helping support more than 18 million American jobs. CTA members enjoy benefits including policy advocacy, market

research, technical education, industry promotion, standards development and the fostering of business and strategic relationships. CTA also owns and produces CES® — the most influential tech event in the world. Find us at cta.tech and follow us @CTAtech and @CES.

Table of Contents

1. Welcome Letter	5
2. Executive Summary	7
3. Overview	10
4. Rankings by Category, and Data	13
5. Methodology	27



Welcome

Since 2015, the Consumer Technology Association (CTA) has produced the U.S. Innovation Scorecard, highlighting work in states across our nation to advance technological progress and improve quality of life for Americans and people around the world.

In tough times, innovation thrives. Over the past three years, American business leaders and entrepreneurs launched and grew technologies that helped businesses move seamlessly online, relieved supply chain bottlenecks and delivered vital medical care across state lines. New innovations changed the relationship between humans and technology, with advances in robotics,

AI, smart home, virtual and augmented reality and more enhancing what we as people can do. More, a focus on sustainability and the desire to keep our world cleaner and greener generated new products that preserve energy and protect our environment.

The United States is a beacon and a magnet for people with innovative ideas and the drive to make them a reality. Yet as always, some states do more than others to help encourage and support that innovation. Those that allow businesses to grow and create new competition and even new industries bring benefits to their own residents and to people all over the world.

In the 2023 U.S. Innovation Scorecard — our 6th edition — CTA evaluated all 50 states on 11 quantitative and qualitative categories, including internet, STEM education, diversity and inclusion, and support for disruptive technologies such as self-driving vehicles, drones, and telehealth. Our 2023 Innovation Champions show that smart policy paired with big ideas can deliver huge rewards for us all.

I'm thrilled to share the 2023 U.S. Innovation Scorecard, our assessment of the American innovation landscape and our vision for what's to come.



Gary Shapiro

Gary Shapiro

President and CEO, Consumer Technology Association, CTA®



Executive Summary

In the 2023 U.S. Innovation Scorecard, we revisit the country after the seismic shock of the Covid pandemic, as new modes of education, migration and work evolve. The result is our most ambitious effort yet to identify what distinguishes the states that stymie innovation from those that advance new frontiers of progress.

In the 2023 Scorecard,
we evaluate all 50 states
in each of 11 categories,
incorporating the latest
available data, and reflecting
a new combined total of 28
metrics. This year, we also
add two altogether new
categories. In Telehealth,
we examine how states
realize the promise of these

emerging health technologies that have proven so vital in the past few years, and in Tort Reform, we evaluate how fair or onerous states make it for businesses to offer their products.

As in years past, we consider a state's tech workforce, and how many new jobs and businesses it creates, as well as how much research and development and venture capital investment it attracts. We look at measures of educational attainment, and whether states offer widespread fast internet connections. We consider social factors, including which states take proactive steps

to protect their residents' personal liberties in matters of gender and sexual identity.

Since our last Scorecard, we have been amazed by how many states have begun welcoming once rarefied autonomous vehicle technologies, including truck platooning and

even mobility-as-a-service. We have also witnessed the rise of advanced air mobility technologies that will one day make it easier and safer to navigate our densest cities. Whatever its population, its topography or its wealth, each state makes a unique contribution to technological innovation, and has a unique story to tell.

This year we recognize 14 Innovation Champions, including both perennial powerhouses and rising tech stars. CTA's 2023 Innovation Champions are: Arizona, Colorado, Indiana, Kansas, Maryland, Massachusetts, Michigan, Minnesota, Nevada, North Dakota, Texas, Utah, Virginia and Washington.

Falling off the Champion list from 2020 are Iowa, Missouri, Nebraska and New Hampshire. Iowa and Missouri saw declines in Human Rights and Tech Workforce metrics, while Iowa also declined in Entrepreneurial & Small

Business Activity. Nebraska fell due to lower grades in Human Rights and Broadband. Nebraska also received a C for Telehealth (a new category in 2023) because of its lack of Medicaid reimbursement for store-and-forward and audio-only telehealth services. Meanwhile, New Hampshire declined the most in Human Rights and Tech Workforce, and received a C in Telehealth due to its lack of Medicaid reimbursement for store-and-forward and remote patient monitoring telehealth services.

At the other end, Nevada, North Dakota and Texas made the Innovation Champion list this year. Nevada made the most dramatic leap from Innovation Adopter to Champion, driven by an increase in its score for Attracts Investment and an A grade in Tort Reform (new in 2023). North Dakota improved its scores for Broadband and Tech Workforce, while Texas benefited from an increase in its Tech Workforce score and an 'A' grade in Telehealth.



Overview



The 2023 Innovation Champions are the highest-scoring states in the country, boasting dynamic tech ecosystems, highly educated workforces, and particular openness to new and innovative technologies. They have widespread access to fast internet connections, take proactive steps to protect personal liberties, and welcome exciting developments in telehealth, self-driving vehicles, advanced air mobility and other emerging technologies. This year's 14 Champions include perennial centers of innovation such as Virginia and Washington as well as rising tech states such as Minnesota, Nevada and North Dakota.

Arizona
Colorado
Indiana
Kansas
Maryland
Massachusetts
Michigan
Minnesota
Nevada
North Dakota
Texas
Utah
Virginia
Washington



The 15 Innovation Leaders earn high grades across most of the Scorecard's 11 categories. These states attract significant investments in research and development and venture capital, enable their residents to develop technical skills through apprenticeships and other programs, and exhibit generally strong new job and business creation.

Alaska
California
Delaware
Florida
Georgia
Iowa
Missouri
Nebraska
New Hampshire
North Carolina
Oregon
Pennsylvania
Rhode Island
South Carolina
Vermont

Overview



Innovation Adopters have taken positive steps in several Scorecard categories, but not most of them. Many of these 14 states have supported expansion of technologies such as self-driving vehicles and telehealth services, while nurturing highly-skilled tech workforces. Most Innovation Adopters could do more to attract investments, reform their tort litigation environments, and expand their tech workforces.

Connecticut
Hawaii
Idaho
Illinois
Maine
New Jersey
New Mexico
New York
Ohio
Oklahoma
South Dakota
Tennessee
Wisconsin
Wyoming



The Scorecard's lowest tier is also its smallest, including the seven states that have the most work to do to nurture entrepreneurship and innovation. Most of these states lack widespread fast internet connections, and could improve their residents' opportunities for higher education, startup financing, and tech jobs. At the same time, these states often welcome emerging technologies such as self-driving vehicles, and they generally offer business-friendly tax environments.

Alabama Arkansas Kentucky Louisiana Mississippi Montana West Virginia



Rankings by Category

The Scorecard categories — 11 in all, based on 28 qualitative and quantitative metrics — encompass a wide range of factors and activities that encourage innovation.

Ranking our results by category reveals how unique and sometimes even wildly different each state can be. Innovations in mobility, for instance, sometimes result from the challenges of incredible urban density, and other times draw inspiration from the rural backcountry of Alaska. Some states are home to dynamic tech industries, but their stifling policies have begun driving the next generation of entrepreneurs to set up shop somewhere else. Other states not traditionally seen as hubs of innovation may be the hotbeds of the technological revolutions to come.

Top Ten States by Category

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Attracts Investment

TY TY

Massachusetts

California

Washington

Delaware

New York

New Jersey

Oregon

Connecticut

Colorado

Utah

Broadband





New Jersey

New York

Massachusetts

Rhode Island

Maryland

Delaware

California

Utah

Connecticut

Hawaii

Drones & Advanced Air Mobility





New Hampshire

West Virginia

Alaska

Arizona

Colorado

Hawaii

Iowa

Kansas

Maryland

Massachusetts

Entrepreneurial & Small Business Activity





Idaho

Colorado

Utah

Montana

Nevada

Wyoming

Florida

California

Delaware

Oregon

Human Rights





Nevada

Michigan

Virginia

Iowa

North Carolina

North Dakota

Utah

Wisconsin

Arizona

Florida

Innovation-Friendly Sustainable Policies





Delaware

South Carolina

Alabama

Alaska

Arizona

Arkansas

Florida

Georgia

Idaho

Illinois

Self-Driving Vehicles





Arizona

Colorado

Florida

Nevada

New Mexico

Ohio

Texas

Utah

Virginia

Washington

Tax Friendly





Wyoming

South Dakota

Alaska

Florida

Montana

New Hampshire

Nevada

Tennessee

Indiana

Utah

Tech Workforce





Vermont

Massachusetts

Maryland

Connecticut

Virginia

Colorado

North Dakota

New Hampshire

New York

Minnesota

Telehealth





Alaska

Arizona

California

Maine

Maryland

Minnesota

Missouri

New York

Oregon

Washington

Tort Reform





Oklahoma

Tennessee

Vermont

Kansas

Indiana

Oregon

Washington

Nevada

Georgia

Virginia











					Drones &	Entrepreneurial		
State	Ranking	Score	Attracts Investment	Broadband	Advanced Air Mobility	& Small Business Activity	Human Rights	
Alabama	Modest Innovator	2.243	C-	C-	В	D	С	
Alaska	Innovation Leader	2.621	F	D-	Α	В	D	
Arizona	Innovation Champion	3.121	В	В	A	B-	C+	
Arkansas	Modest Innovator	2.015	F	D+	C-	С	С	
California	Innovation Leader	2.803	A+	Α-	В	B+	С	
Colorado	Innovation Champion	3.273	В	В	Α	Α	С	
Connecticut	Innovation Adopter	2.575	В	Α-	B+	С	С	
Delaware	Innovation Leader	2.635	B+	Α-	С	A -	D+	
Florida	Innovation Leader	2.757	C-	B+	В	A	C+	
Georgia	Innovation Leader	2.727	С	В	D+	В	C+	













State	Innovation-Friendly Sustainable Policies	Self-Driving Vehicles	Tax Friendly	Tech Workforce	Telehealth	Tort Reform
Alabama	В	A	С	D+	С	C+
Alaska	В	A	A+	B-	A	C+
Arizona	В	A	В	B-	A	C+
Arkansas	В	A	C-	D-	В	B+
California	С	В	D-	B+	A	D+
Colorado	B-	A	В	Α-	В	B+
Connecticut	С	C+	D+	A	С	B+
Delaware	B+	A	В	В	D	D
Florida	В	A	A	С	D	С
Georgia	В	A	B-	В-	С	Α-











State	Ranking	Score	Attracts Investment	Broadband	Drones & Advanced Air Mobility	Entrepreneurial & Small Business Activity	Human Rights
Hawaii	Innovation Adopter	2.425	D-	A-	Α	С	С
ldaho	Innovation Adopter	2.515	В	C-	D	A -	C+
Illinois	Innovation Adopter	2.347	В	B+	D-	B-	С
Indiana	Innovation Champion	2.999	В	В	B+	D+	C+
lowa	Innovation Leader	2.848	B-	C+	Α	С	В
Kansas	Innovation Champion	2.999	C+	В	Α	C+	C+
Kentucky	Modest Innovator	2.212	D-	C+	D-	D	C+
Louisiana	Modest Innovator	1.848	F	С	B+	С	С
Maine	Innovation Adopter	2.485	D	D	В	В	С
Maryland	Innovation Champion	3.031	В	A	Α	С	D+













State	Innovation-Friendly Sustainable Policies	Self-Driving Vehicles	Tax Friendly	Tech Workforce	Telehealth	Tort Reform
Hawaii	С	B+	С	B-	В	В
Idaho	В	A	В	С	D	C+
Illinois	В	B+	C+	B+	В	F
Indiana	В	A	B+	С	В	A+
lowa	В	A	С	В	В	В
Kansas	В	A	В	В	С	A+
Kentucky	В	A-	В	D	A	B-
Louisiana	В	A-	С	F	В	A-
Maine	D+	В	B-	B-	A	B+
Maryland	В	A	C-	A	A	B-











State	Ranking	Score	Attracts Investment	Broadband	Drones & Advanced Air Mobility	Entrepreneurial & Small Business Activity	Human Rights
Massachusetts	Innovation Champion	3.303	A+	Α	Α	В	С
Michigan	Innovation Champion	3.151	В	B-	Α	C-	B+
Minnesota	Innovation Champion	3.031	В	В	Α	C+	С
Mississippi	Modest Innovator	1.834	F	F	С	D	С
Missouri	Innovation Leader	2.925	В	B-	A	B+	D-
Montana	Modest Innovator	2.151	D	D-	A	A	D-
Nebraska	Innovation Leader	2.788	C-	C+	A	В	C+
Nevada	Innovation Champion	3.061	B-	В	B-	B+	A
New Hampshire	Innovation Leader	2.939	В	B-	A+	В	D+
New Jersey	Innovation Adopter	2.575	B+	A+	Α	В	С













State	Innovation-Friendly Sustainable Policies	Self-Driving Vehicles	Tax Friendly	Tech Workforce	Telehealth	Tort Reform
Massachusetts	В	B-	B-	A +	A	C+
Michigan	В	A	В	В	A	C+
Minnesota	В	A	C-	B+	A	B-
Mississippi	В	A	B-	D+	С	B-
Missouri	В	A	В	C+	A	B-
Montana	В	С	B+	C-	D	C+
Nebraska	В	A	B-	В	С	В
Nevada	В	A	B+	F	В	A
New Hampshire	В	В	B+	A-	С	В
New Jersey	C+	A	F	B+	D	D











			Attracts		Drones & Advanced	Entrepreneurial & Small	Human	
State	Ranking	Score	Investment	Broadband	Air Mobility	Business Activity	Rights	
New Mexico	Innovation Adopter	2.394	D+	F	Α	D+	D+	
New York	Innovation Adopter	2.439	B+	Α	В	A -	С	
North Carolina	Innovation Leader	2.940	В	B-	D	B-	В	
North Dakota	Innovation Champion	3.091	D+	B+	Α	В	В	
Ohio	Innovation Adopter	2.455	B-	В	Α	D-	D	
Oklahoma	Innovation Adopter	2.560	D-	C+	Α	B-	С	
Oregon	Innovation Leader	2.864	В	B-	D-	A -	С	
Pennsylvania	Innovation Leader	2.727	В	B+	Α	C-	D	
Rhode Island	Innovation Leader	2.727	C-	Α	D	В	С	
South Carolina	Innovation Leader	2.818	D	B-	Α	C+	С	













State	Innovation-Friendly Sustainable Policies	Self-Driving Vehicles	Tax Friendly	Tech Workforce	Telehealth	Tort Reform
New Mexico	В	Α	B-	В	В	B-
New York	C-	С	D-	B+	A	F
North Carolina	В	Α	В	B-	A	В
North Dakota	В	Α	В	Α-	В	B-
Ohio	В	Α	C+	B-	A	В
Oklahoma	В	Α	B-	D	С	A +
Oregon	С	Α	В	В	A	Α
Pennsylvania	B-	Α	B-	В	С	C+
Rhode Island	В	Α	С	B+	В	B+
South Carolina	B+	Α	B-	В	В	C+











Ranking	Score	Attracts Investment	Broadband	Drones & Advanced Air Mobility	Entrepreneurial & Small Business Activity	Human Rights	
Innovation Adopter	2.485	D-	C+	D-	B	C	
Innovation	2.470	D	B-	D-	D+	С	
Innovation	2.999	В	B+	D	В	C+	
Innovation	3.091	В	A -	C-	A-	В	
Innovation Leader	2.681	В	D-	A	В	С	
Innovation Champion	3.061	В	B+	A	B-	B+	
Innovation Champion	3.333	A	В	A	B+	С	
Modest Innovator	2.257	F	D-	A+	F	C+	
Innovation Adopter	2.470	В	D+	D-	C-	В	
Innovation Adopter	2.394	В	F	D	A+	C+	
	Innovation Adopter Innovation Adopter Innovation Champion	Innovation Adopter Innovation Adopter Innovation Champion Innovation Champion Innovation Leader Innovation Champion Innovation 3.091 Innovation Champion Innovation 3.061 Innovation 3.333 Modest Innovation Adopter Innovation 2.470 Innovation 2.470 Innovation 2.470	RankingScoreInvestmentInnovation Adopter2.485D-Innovation Champion2.999BInnovation Champion3.091BInnovation Champion2.681BInnovation Champion3.061BInnovation Champion3.333AModest Innovation Adopter2.470BInnovation Adopter2.470B	RankingScoreInvestmentBroadbandInnovation Adopter2.485D-C+Innovation Champion2.470DB-Innovation Champion2.999BB+Innovation Champion3.091BA-Innovation Leader2.681BD-Innovation Champion3.061BB+Innovation Champion3.333ABModest Innovation Adopter2.257FD-Innovation Adopter2.470BD+	RankingScoreAttracts InvestmentBroadbandAdvanced Air MobilityInnovation Adopter2.485D-C+D-Innovation Adopter2.470DB-D-Innovation Champion2.999BB+DInnovation Champion3.091BA-C-Innovation Leader2.681BD-AInnovation Champion3.061BB+AInnovation Champion3.333ABAModest Innovator Adopter2.257FD-A+Innovation Adopter2.470BD+D-Innovation Adopter2.304BD+D-	RankingScoreAttracts InvestmentBroadbandAdvanced Air Mobility& Small Business ActivityInnovation Adopter2.485D-C+D-BInnovation Adopter2.470DB-D-D+Innovation Champion2.999BB+DBInnovation Champion3.091BA-C-A-Innovation Leader2.681BD-ABInnovation Champion3.061BB+AB-Innovation Champion3.333ABAB+Modest Innovator Adopter2.257FD-A+FInnovation Adopter2.470BD+D-C-	Ranking Score Attracts Investment Broadband Advanced Air Mobility & Small Business Activity Human Rights Innovation Adopter 2.485 D- C+ D- B C Innovation Adopter 2.470 D B- D- D+ C Innovation Champion 2.999 B B+ D B C+ Innovation Champion 3.091 B A- C- A- B Innovation Leader 2.681 B D- A B C Innovation Champion 3.061 B B+ A B- B+ Innovation Champion 3.333 A B A B+ C Modest Innovator Adopter 2.257 F D- A+ F C+ Innovation Adopter 2.470 B D+ D- C- B













State	Innovation-Friendly Sustainable Policies	Self-Driving Vehicles	Tax Friendly	Tech Workforce	Telehealth	Tort Reform
South Dakota	В	Α	A +	C-	В	В
Tennessee	В	A	B+	C-	С	A+
Texas	В	Α	В	C+	A	Α-
Utah	В	A	B+	В	В	С
Vermont	C+	С	С	A +	В	A +
Virginia	В	A	В	A-	A	Α-
Washington	С	A	В	B+	A	A
West Virginia	В	A	В	C-	В	В
Wisconsin	B-	A	B-	C+	В	В
Wyoming	В	A	A +	D	D	B-





Attracts Investment

This category measures the amount of per capita venture capital investment and combined government and private sector research and development. Venture capital investment data comes from PitchBook. R&D investment data comes from the National Science Foundation's Business Research and Development and Innovation: 2020 data available Oct 2022. (Table 13). The combined normalized scores are graded on a curve and assigned letter grades from A+ to F.



Broadband

Grades are assigned based on fixed and mobile internet speeds and the percentage of households subscribing to broadband.

Ookla United States' Mobile and Fixed

Broadband Internet Speeds (August 2022)

using median fixed and mobile download and upload speeds, and data on the percentage of households subscribing to a broadband service from the 2021 American Community

Survey. The combined normalized scores are graded on a curve from A+ to F.



Drones & Advanced Air Mobility

CTA policy and research experts assign A plus to F grades, based on laws and regulations affecting consumer and commercial drone operations, and electric vertical takeoff and landing (eVTOL) aircraft.



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Entrepreneurial & Small Business Activity

Using quarterly workforce indicators data from the <u>U.S. Census Bureau</u>, this category tracks number of new jobs per capita created from Q3 2017 through Q2 2022 by firms with fewer than 50 employees, as well as the number of businesses formed over the most recent 5 years according to the Census Bureau's <u>Business Dynamics Statistics</u>.

States are graded on a curve and assigned letter grades from A+ to F.



Human Rights

This category uses data from the National Right to Work Legal Defense Foundation to grade whether a state is "right to work" and the Movement Advancement Project to assess whether a state has LGBTQ nondiscrimination laws. The category is bimodal assigns an A+ to states that allow workers to decide whether to join an established labor union and an F to states that force workers to participate in pay and pay dues to unions. Also, states were assigned A+ through F grades based on the presence of state legislation protecting workers from discrimination on the basis of sexual orientation and or gender identity. The combined normalized scores are assigned a letter grade from A+ to F.



Innovation-Friendly Sustainable Policies

CTA policy and research experts assign an A+ to F grade based on how laws and regulations meant to support environmental sustainability – on topics such as recycling of electronics, product packaging and energy efficiency – impact the consumer technology industry. Regulations may inhibit, support or be neutral in how they impact innovation.



Self-Driving Vehicles

CTA policy and research experts assign A+ to F grades based on state laws and regulations affecting the development, testing, and operation of self-driving vehicles.



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Tax Friendliness

Using data from the Tax Foundation's 2022 State Business Tax Climate Index, this grade is derived from numerical scoring data, including corporate and individual income taxes, sales tax, unemployment insurance tax and property tax rates. States are graded on a curve and assigned a letter grade from A+ to F.



Tech Workforce

This grade is based on the per capita number of technology related jobs and per capita apprenticeship graduates. Using data from the United States Census Bureau's American Community Survey 2021, this category measures the percentage of a state's population age 25 years and older holding a graduate or professional degrees. The jobs data comes from the Bureau of Labor Statistics May 2021 occupational Employment Statistics Survey. The apprenticeship data comes from the Department of Labor's **Employment and Training Administration** for fiscal year 2021, states are graded on a curve and assigned a letter grade from A+ to F. The advanced degrees data comes from the United States Census Bureau's American Community Survey 2021. Potential Source -CompTIA State of the Workforce



Telehealth

CTA policy and research experts assign
A plus to F grades, based on laws and
regulations affecting telehealth technologies.
Grading relies heavily on Medicaid
reimbursement policies regarding telehealth
procedures from the Center for Connected
Health Policy's Connected Health Policy State
Telehealth Laws and Reimbursement Policies
report. States are graded and assigned letter
grades from A+ to F.



Tort Reform

This category evaluates each state's legal environment, according to three metrics: Metric A uses the U.S. Chamber of Commerce, Institute of Legal Reform, 2022 Tort Costs in America to quantify annual tort costs per household in the state. Metric B draws on the Institute for Free Speech, 2022 Anti-SLAPP Statutes Report Card to assess whether states have laws in place to prevent plaintiffs from bringing legal actions without merit solely for the purpose of coercing, intimidating or silencing defendants; states that have such laws earn higher grades, while states that do not earn lower grades. For Metric C, CTA policy and research experts assess whether companies are compelled to pay damages to class action plaintiffs who claim to have suffered no actual injuries.



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Overall Grade

The overall innovation scorecard grade captures a state's overall support for innovation based on the criteria above. Each criterion receives equal weight in the final scoring formula. Final composite scores are then graded on a curve to determine which of the four tiers a state will be ranked in: Modest Innovator, Innovation Adopter, Innovation Leader or Innovation Champion.



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