

2024 Northern Virginia Regional Tech & Innovation Study



Hidden in Plain Sight:
Northern Virginia's
Rise as a U.S. Tech Giant

November 2024



nvtc

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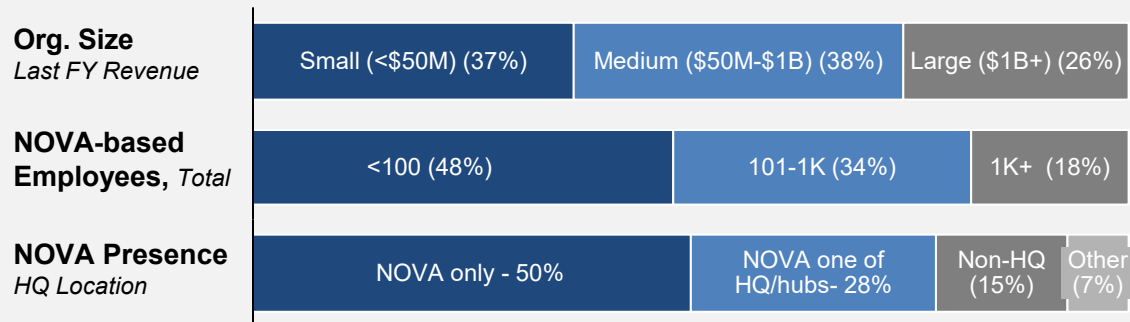
NOVA Tech & Innovation Study 2024 Methodology

Northern Virginia (NOVA) is home to a world-class ecosystem of technology-focused industries – but what would it take to reach the next level? This report explores the opportunities and challenges facing the region as seen through the eyes of its largest and most innovative technology leaders.

About the respondents:

30 One-on-one **interviews** conducted with senior leaders from top tech-focused organizations¹

82 Tech-focused organizations with NOVA operations provided **survey** responses



This report evaluates NOVA across 5 dimensions:



1. Talent: Availability of a highly skilled, educated, and diverse workforce



2. Innovation: Presence of cutting-edge ideas and tech trends where organizations see opportunity and invest



3. Ecosystem: Strong entrepreneurial system, industry collaboration, and availability of capital



4. Business Attraction: Business-friendly regulations, costs of doing business, quality-of-life, and infrastructure



5. Federal Government: Access and proximity to the U.S. Federal Government

1. Inclusive of small, medium and large public and private companies, as well as non-profits, academia, and NGOs

NVTC would like to thank McKinsey & Company for their contributions to the survey and interview process, as well as the data analysis contained in this report



Executive Summary

NOVA's Tech Ecosystem Leads the Country

#1

Largest data center market in the world, with over 2x total inventory of the next largest market

CBRE Global Data Center Trends 2024

#1

Density of high-growth companies (# firms with >\$2M in revenue per 1K firms) vs. peer tech hubs^{1,2}

Kauffmann Index of Growth Entrepreneurship

2.5x

More Computer & Information Science graduates than peer tech hubs¹

US Census, ACS 5-Yr. Estimates

2nd

Largest US metro for net tech employment, 11.2% of overall workforce^{1,3}

CompTIA State of the Tech Workforce 2024

#1

Virginia ranked **Top US State for Business in 2024**

CNBC

1. Washington-Arlington-Alexandria, DC-VA-MD-WV MSA
2. Peer MSAs include Austin, Boston, Chicago, Dallas-Fort Worth, Los Angeles, New York, Raleigh, San Francisco, Seattle
3. Net of tech industry and tech occupation employment

2024 NOVA Tech & Innovation Study: Key Insights



Talent

Access to talent is NOVA's top differentiator, but demand for tech skills is outpacing supply

- 73% consider access to talent to be a key advantage, and 55% rank it the top factor for a leading tech hub
- However, tech leaders cited acute skills gaps in AI/ML (62%), Cyber (43%), and Software Development (39%)



Innovation

NOVA leads in GenAI and Cybersecurity tech investments in the next 2-3 years, followed by Cloud

- Over 80% of local tech leaders are investing in GenAI (89%) and Cyber (83%), ~15-20% more than global peers¹
- 61% are investing in Cloud Computing (vs. 76% globally)
- Early-stage tech like Space and Quantum offer promising long-term opportunities



Ecosystem

NOVA excels at scaling growth-stage companies and can benefit from more early-stage support

- Recent surges in start-ups, VC funding, and 5-year survival rate highlight NOVA's status as a leading tech hub
- However, over 30% of tech leaders cite investment capital (37%) and the entrepreneurial ecosystem² (33%) as top barriers to growth



Business Attraction

Tech organizations are committed to NOVA, with one-third considering expanding their presence

- 77% plan to stay in NOVA, with 29% considering expansion in the next 2-3 years
- Key decision factors include the cost of doing business (84%), cost of living (83%), access to talent (78%), and quality of infrastructure (71%)



Federal Government

Proximity to the US federal government is a key advantage to the region, offering market stability

- 56% view proximity to the federal government as a top advantage
- Of the US government's ~\$77B contracted IT spend in 2023³, ~53% was performed in DC-NOVA MSA and ~31% in NOVA alone⁴
- 18% cite access to other non-federal markets as a top 3 barrier to regional growth

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. McKinsey State of Technology 2024 report ([link](#))
2. E.g., start-ups, incubators, innovation culture

3. Bloomberg Government (sourced from publicly-available contract data from USASpending.gov, FPDS, and SAM.gov); IT contract spend by place of performance

4. NOVA defined as Congressional Districts VA-01, 05, 08, 10, 11; Rest of MSA includes DC-01, MD-05, MD-06, MD-08, WV-02

Talent

The region boasts the nation's second-highest net tech employment by metro area, with 376K tech industry and tech occupation workers¹, providing a rich and diverse talent pool.

However, gaps remain as demand still outpaces supply. The region's demand for emerging tech skills has skyrocketed: AI/ML surged 111% (vs. 43% nationally) and Cloud grew 14% (vs. a 5% national decline)².

These skills gaps are exacerbated by the need for government clearances, competition from other tech companies, and shifting expectations of talent due to the rise of flexible working models and living costs in the region.

To close the skills gap, it will require a significant increase in new talent supply (e.g., academic partnerships, internships and apprenticeships at scale, skills-based hiring), re-skilling existing technologists (e.g., stackable credentials and certifications), and retaining current talent.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

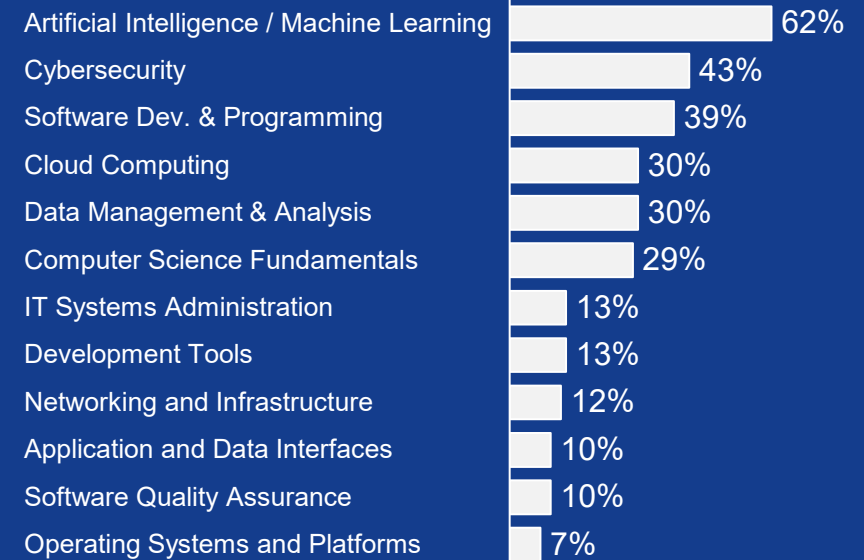
1. CompTIA State of the Tech Workforce 2024 ([link](#))
2. Greater Washington Partnership's 2024 Skills Forecasting Report ([link](#)); Lightcast

376K Net tech employment, 2nd highest US metro area¹

111% Growth in demand for AI/ML from 2019-2023 vs. 43% nationally²

14% Growth in Cloud computing & services (vs. -5% nationally)²

Tech Skills Gaps, % NOVA tech leaders



Innovation

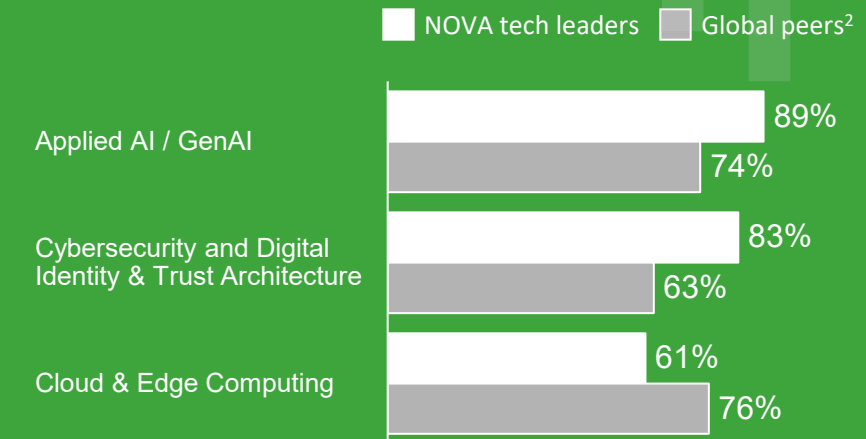
GenAI, Cybersecurity, and Cloud Computing are the top three emerging technologies that organizations are investing in for NOVA-specific operations over the next 2-3 years.

With 89% of NOVA tech leaders investing in generative AI in the near-future, above the 74% of global peers¹, there is an opportunity to accelerate the adoption of GenAI solutions at scale.

NOVA continues to lead in Cyber and Cloud tech, with 83% of tech leaders investing in Cybersecurity and Digital Identity at higher rates than global peers currently, and 61% in Cloud and Edge Computing at a lower rate than current global investment.

Although Space Exploration and Awareness and Quantum are in the early stages of tech adoption, NOVA is positioned to become a leader in both technologies due to its concentration of federal R&D facilities and tech companies.

Emerging Tech Investments, % respondents



“Innovation in Northern Virginia has a rich history leading groundbreaking developments like the internet, fueling research and commercialization of new tech, and enabling the growth of businesses.”

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. McKinsey State of Technology 2024 report ([link](#))

Ecosystem

In 2022-23, Virginia attracted over 10K startups¹ and raised \$2.5B in venture capital, ranking #8 nationally². Despite this surge, NOVA’s capital funding lags peer tech hubs^{3,4}, posing challenges especially for early-stage companies.

NOVA excels in developing growth-stage companies, ranking #1 in the number of firms that scaled up (>50 employees within 10 years) and #1 in the density of high-growth companies (>\$2M revenue per 1K firms), compared to peers^{4,5}.

The NOVA tech ecosystem is home to over 17K tech companies⁶, including some of the world’s largest tech firms, and its close ties with the US federal government uniquely drive innovation, growth, and advancement for businesses.

To solidify NOVA as a leading tech hub, tech leaders suggest enhancing the regional brand, promoting emerging tech, and strengthening the entrepreneurial ecosystem by boosting visibility and development of accelerators and incubators for better mentorship.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

- 1. VIPC press release August 9, 2024 ([link](#))
- 2. Pitchbook-NVCA Venture Monitor report
- 3. Pitchbook

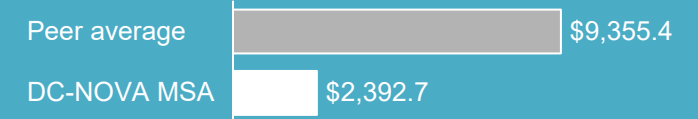
- 4. Peer MSAs include Austin, Boston, Chicago, Dallas, Los Angeles, New York, Raleigh, San Francisco, and Seattle
- 5. Austin, Raleigh & Seattle MSAs not included in comparison
- 6. FCEDA press release July 21, 2022 ([link](#))

Innovation Pipeline, Washington-Arlington-Alexandria MSA vs. peers^{3,4}

Academic R&D spend (USD per capita), 2022



Venture capital per capita (3-yr. rolling total), 2021-23



#1 Share of scale-ups^{4,5}
(% of small firms that grew to employ >50 ppl. by 10th year)

#1 Density of high-growth companies^{4,5}
(# of fast-growing companies with >\$2M in revenue / 1000 firms)

Business Attraction

Tech organizations are committed to NOVA: 77% plan to stay, with 29% considering expanding within NOVA in the next 2-3 years. Key decision factors for reducing or expanding presence in the region include ease of doing business, talent, and infrastructure.

NOVA stands out for its business-friendly regulatory environment and Virginia's grants and incentives, making it an attractive choice for companies compared to other regions, despite rising costs.

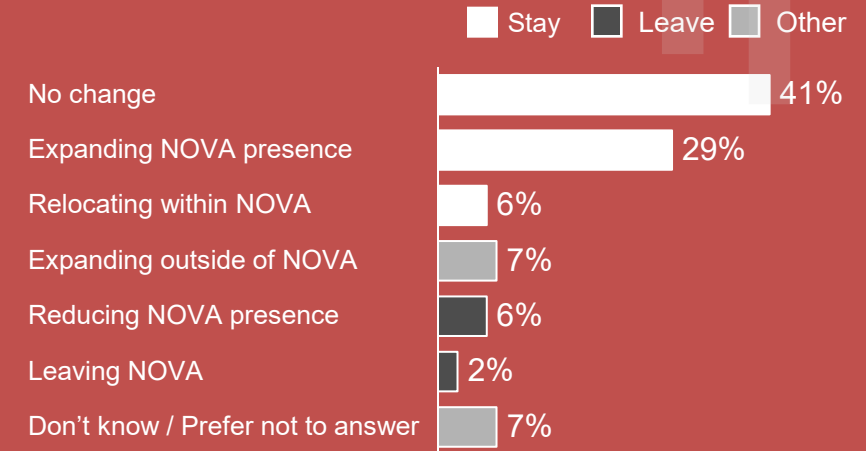
While NOVA's cost of living is lower relative to other major tech hubs, 54% of tech leaders see it as a top growth barrier. High housing costs drive out-migration, posing talent retention challenges.

NOVA boasts the nation's largest data center market (~5x capacity of Silicon Valley¹) as well as top-rated public transportation, making its infrastructure a key regional advantage.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. CBRE North America Data Center Trends H1 2024 ([link](#))

NOVA presence over the next 2-3 years, % tech leader respondents



*“Relative to the markets that NOVA competes with, people coming out of those regions **get a bargain when they come here.**”*

*“Northern Virginia’s multifaceted infrastructure, encompassing both technical and educational elements, has **established NOVA as a hub for innovation and growth.**”*

Federal Government

The US federal government is a massive customer in NOVA: of its ~\$77B IT spend on IT contracting in the US in 2023, 53% was performed in the DC-MSA region (~\$41B) and 31% in NOVA alone (~\$24B)^{2,3}. Shifts in government priorities can create budget uncertainty for tech leaders, especially for less established firms.

NOVA offers tech firms unique access to the federal government, aiding client connections and insights into mission challenges. However, start-ups and niche firms face high entry barriers due to contract procurement hurdles.

NOVA's edge is its federal government access, but 18% of tech leaders see access to non-federal markets as a potential barrier to growth, suggesting reliance on government contracts may suppress market diversification.

A federal government-centric market in NOVA offers stability but may stifle innovation. Coupled with slow tech adoption and inefficient procurement, NOVA risks being seen as lagging in embracing new technologies.

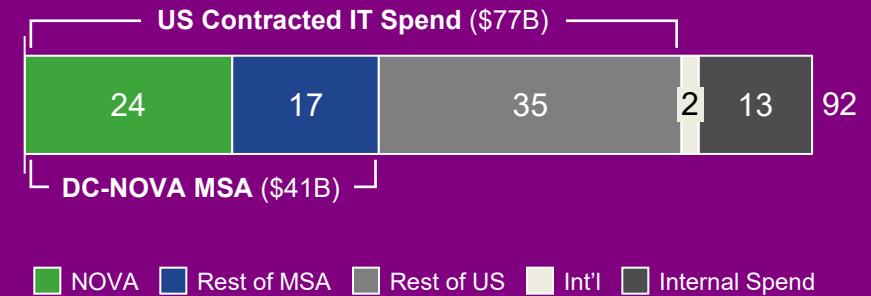
Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

- 1. ITdashboard.gov
- 2. Bloomberg Government; original data sourced from publicly-available contract data from USASpending, FPDS, and SAM.gov; IT contract spend by place of performance
- 3. NOVA defined as Congressional Districts VA-01, 05, 08, 10, 11; Rest of MSA includes DC-01, MD-05, MD-06, MD-08, WV-02

US Federal Government IT Spend, 2023

\$92B US federal government dollars budgeted towards IT¹

Federal Government IT Spend, \$B, 2023^{1,2,3}



31%

of US contracted IT spend in 2023 (\$24B) was performed in NOVA-only^{2,3}

53%

of US contracted IT spend in 2023 (\$41B) was performed in NOVA-DC MSA^{2,3}



Full Report

Talent

The region boasts the nation's second-highest net tech employment by metro area, with 376K tech industry and tech occupation workers¹, providing a rich and diverse talent pool.

However, gaps remain as demand still outpaces supply. The region's demand for emerging tech skills has skyrocketed: AI/ML surged 111% (vs. 43% nationally) and Cloud grew 14% (vs. a 5% national decline)².

These skills gaps are exacerbated by the need for government clearances, competition from other tech companies, and shifting expectations of talent due to the rise of flexible working models and living costs in the region.

To close the skills gap, it will require a significant increase in new talent supply (e.g., academic partnerships, internships and apprenticeships at scale, skills-based hiring), re-skilling existing technologists (e.g., stackable credentials and certifications), and retaining current talent.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. CompTIA State of the Tech Workforce 2024 ([link](#))

2. Greater Washington Partnership's 2024 Skills Forecasting Report ([link](#))

“

“NOVA has one of the greatest talent pools in the US, especially for the government contracting sector. This is the center of talent.”

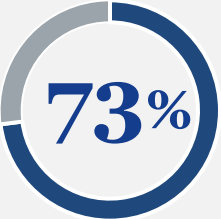
Access to highly educated and diverse talent is the cornerstone of NOVA’s competitive advantage as a tech hub

NOVA tech leaders’ perspectives on talent, % respondents

Access to talent is the most critical factor of successful tech hubs...

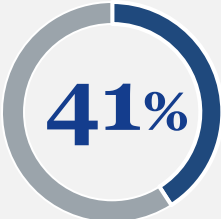


Ranked **access to talent** as one of the top three most important criteria of leading tech hubs¹

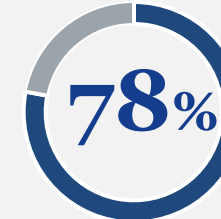


Believe access to **talent** is one of NOVA’s key advantages as a tech hub, relative to other regions²

...but also see it as crucial to continue to develop and sustain



Believe **access to talent** is also a key barrier to NOVA’s growth over the next 5 years³



Cited changes in access to talent will **impact their decision to expand or reduce presence in NOVA** over the next 2-3 years⁴

“The talent here is diverse and more global. That’s a huge benefit vs. other states – the global talent differentiates Northern Virginia.”

Insights

Access to a skilled workforce is the **#1 priority of tech leaders** – and is a key strength of the region that is critical for continued growth

Talent development and retention is **ranked as the 2nd most impactful** area of investment for NOVA operations over the next 2-3 years

*“This rich academic environment that surrounds us is important because **emerging technologies** are changing so quickly for our customers.”*

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

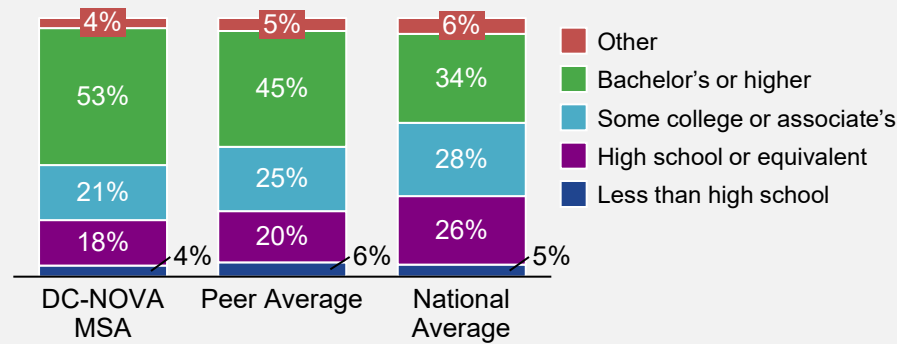
1. Appendix Q26
2. Appendix Q10

3. Appendix Q11
4. Appendix Q15; includes significant impact or some impact

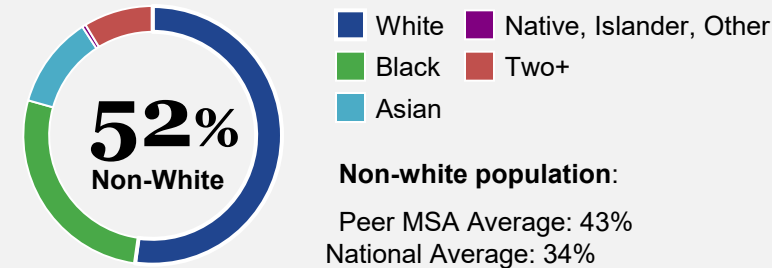
The region's workforce is more educated, diverse, and has a higher concentration of tech jobs & graduates compared to peers and US

Regional workforce metrics: DC-NOVA MSA¹ compared to peer MSAs² and national average

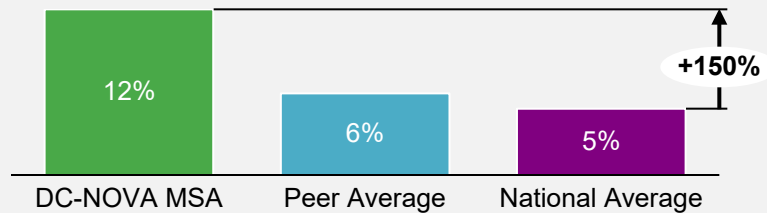
Educational Attainment in Population aged 25+
Percent, 2022, 5-year estimate



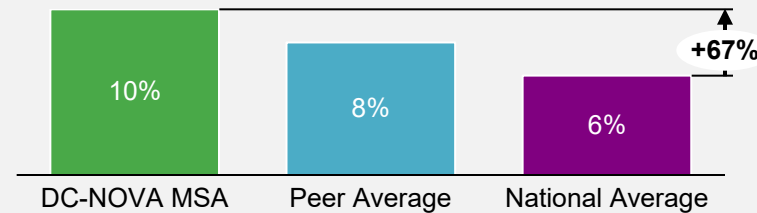
Population by Race
Percent, 2022, 5-year estimate



Computer & Information Sciences Graduates, Percent, 2021



Tech-Related Job Concentration, Percent, 2023



Insights

DC-NOVA has the **highest percentage of residents with a bachelor's degree or higher** among peer MSAs

Population is **more diverse than peer MSAs** (43%) and US average (34%)

Region produces **2x the share of Computer & Information Sciences graduates** vs. peers

Region is slightly **higher than peers for tech-related job concentration** but 4p.p. higher than US

Source: US Census, American Community Survey (ACS) 5-year estimates, Bureau of Labor Statistics, National Center for Education Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS)

1. Washington-Arlington-Alexandria, DC-VA-MD-WV ([link](#))

2. Peer MSAs include Austin-Round Rock-Georgetown, TX Boston-Cambridge-Newton, MA-NH Chicago-Naperville-Elgin, IL-IN-WI Dallas-Fort Worth-Arlington, TX Los Angeles-Long Beach-Anaheim, CA New York-Newark-Jersey City, NY-NJ-PA Raleigh-Cary, NC San Francisco-Oakland-Berkeley, CA Seattle-Tacoma-Bellevue, WA

Despite a strong talent pipeline, skills gaps exist in high-demand areas including AI/ML, Cybersecurity, and Software Development

Tech-focused skills gaps: % respondents¹

Artificial Intelligence / Machine Learning	62%
Cybersecurity	43%
Software Development & Programming	39%
Cloud Computing	30%
Data Management & Analysis	30%
Computer Science Fundamentals	29%
N/A; We do not see any skills gaps	16%
IT Systems Administration	13%
Development Tools	13%
Networking & Infrastructure	12%
Application & Data Interfaces	10%
Software Quality Assurance	10%
Other	10%
Operating Systems & Platforms	7%

Insights

Region has the highest number of AI-related job postings, surpassing the Bay Area²

Demand for AI/Machine Learning skills surged with 111% growth from 2019-2023 in the Greater Washington area, compared to 43% nationally³

Demand for Cloud computing and services demonstrated 14% growth for the Greater Washington area, compared to a 5% decline nationally³

Tech/AI jobs are expected to grow at 1.2% CAGR by 2030 within the Baltimore-DC-Richmond area³

“We are rich in talent, but we still can't keep up with demand.”

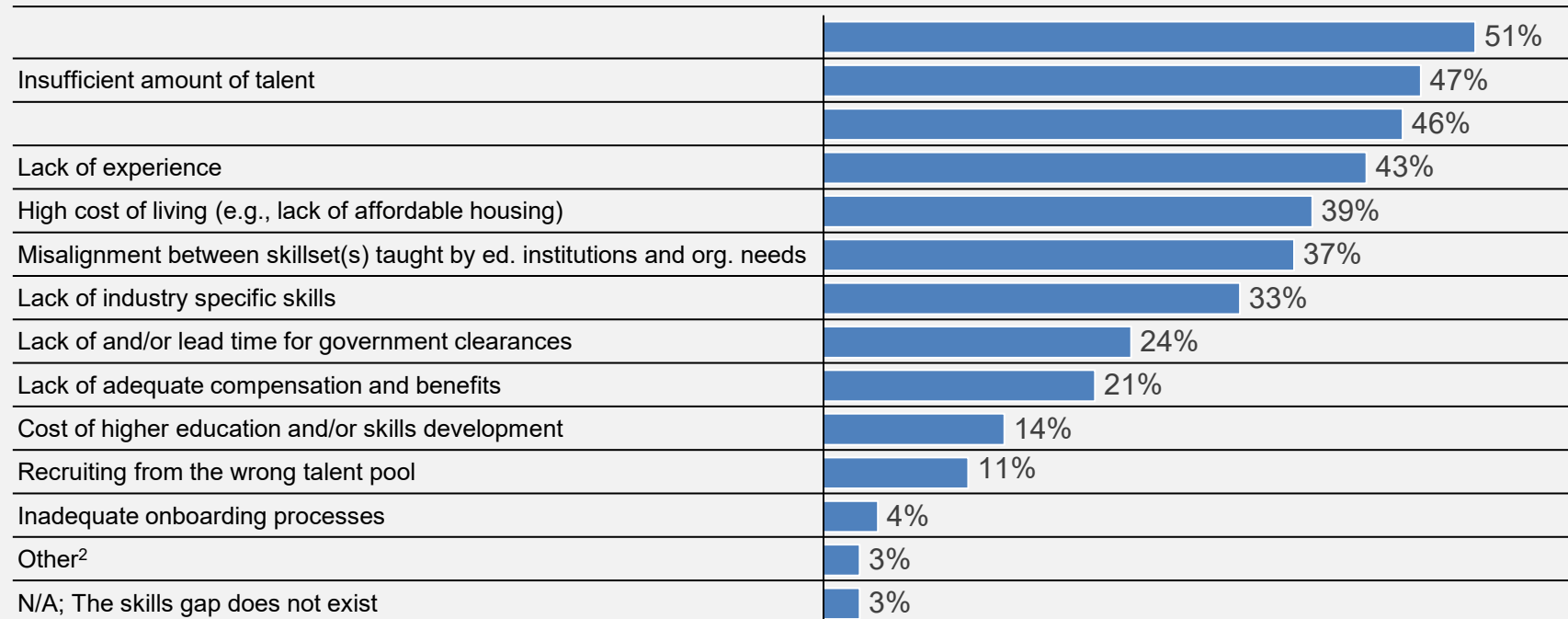
Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interview

1. Appendix Q23
 2. JLL: Three Trends Fueling AI Growth in the DC Region, February 2024; Lightcast
 3. Greater Washington Partnership's 2024 Skills Forecasting Report; Greater Washington area is defined as the Washington-Arlington-Alexandria, DC-VA-MD-WV MSA



Skills gaps exasperate NOVA's competition for tech talent, driven by lack of experience, industry-specific skills, and clearances

Perceived reasons for the NOVA tech skills gap(s): % respondents¹



“There's been a war for talent in this area for decades. The biggest challenge is tech talent who have both technical skills and agency / mission knowledge.”

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

- Appendix Q24
- Other includes: “low government contracting margins”; “overcompensation for less skilled workers”

Insights

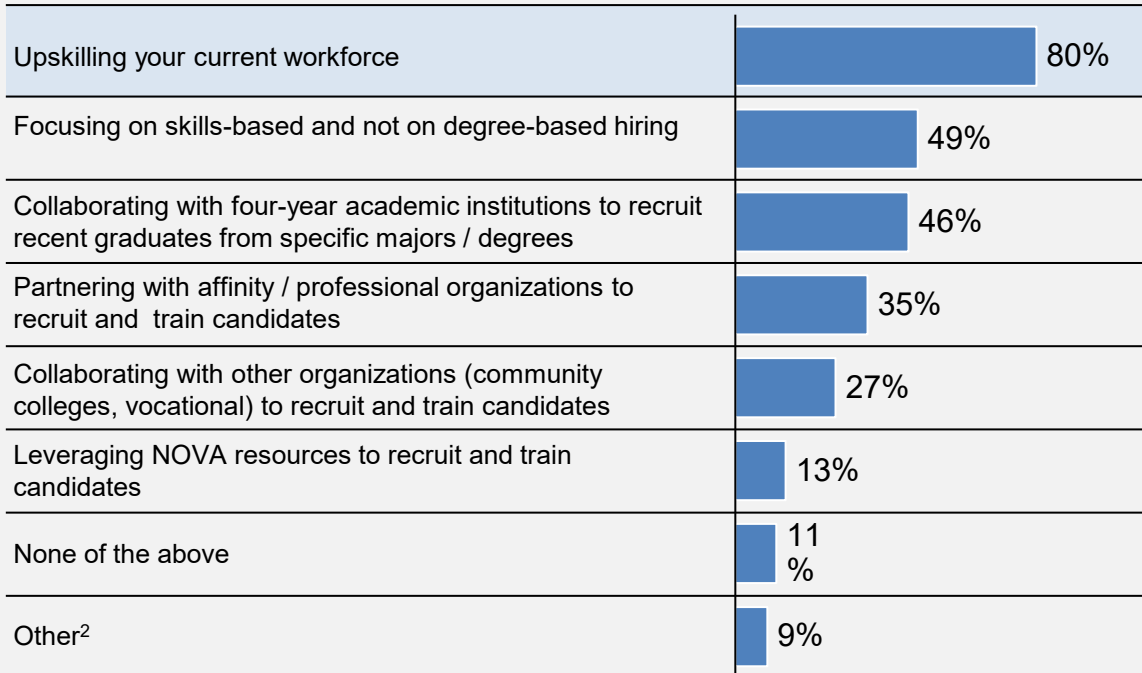
The influx of tech companies in the region has **increased competition for talent**, acutely felt by firms serving the federal government with in-person requirements

Despite a strong pipeline, there is still a shortage of tech talent, with **66% of tech leaders investing in talent pipeline development** (e.g., recruiting and retention)

The shortage is further exasperated by **stringent experience requirements and security clearances**

Up-skilling the current high quantity of technologists represents an opportunity to bridge NOVA’s skills gap in emerging tech

Effective actions to reduce skill gaps: % respondents¹



“The biggest unmet need right now is not new talent but making sure the current workforce is keeping up with today’s tech.”

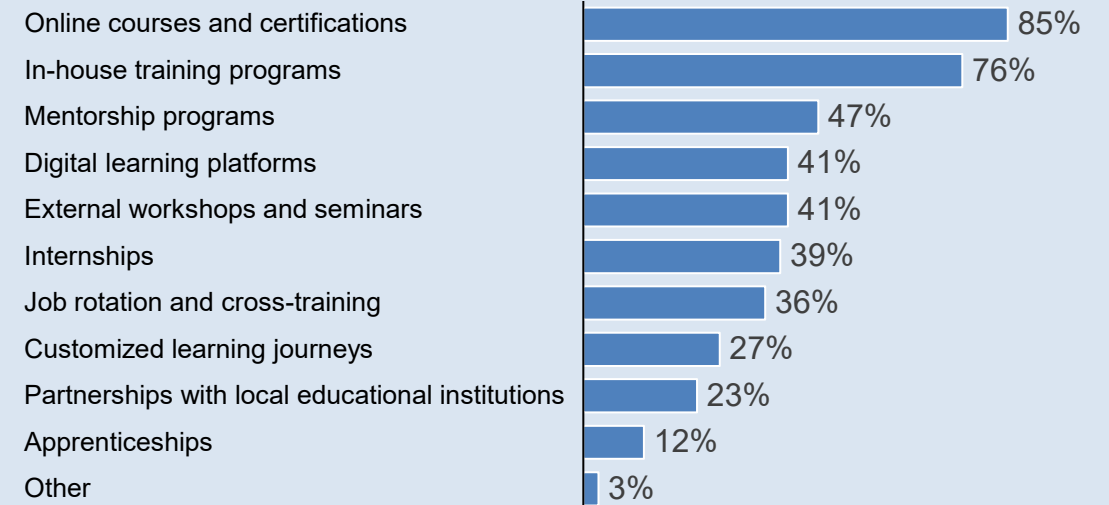
Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q25

2. Other includes “incentivizing employees to pursue certifications”, “internal mobility”, “early career pathways for solutions engineering”

28% of organizations are planning to invest in upskilling programs in next 2-3 years³

Initiatives organizations are utilizing to upskill employees⁴, % respondents

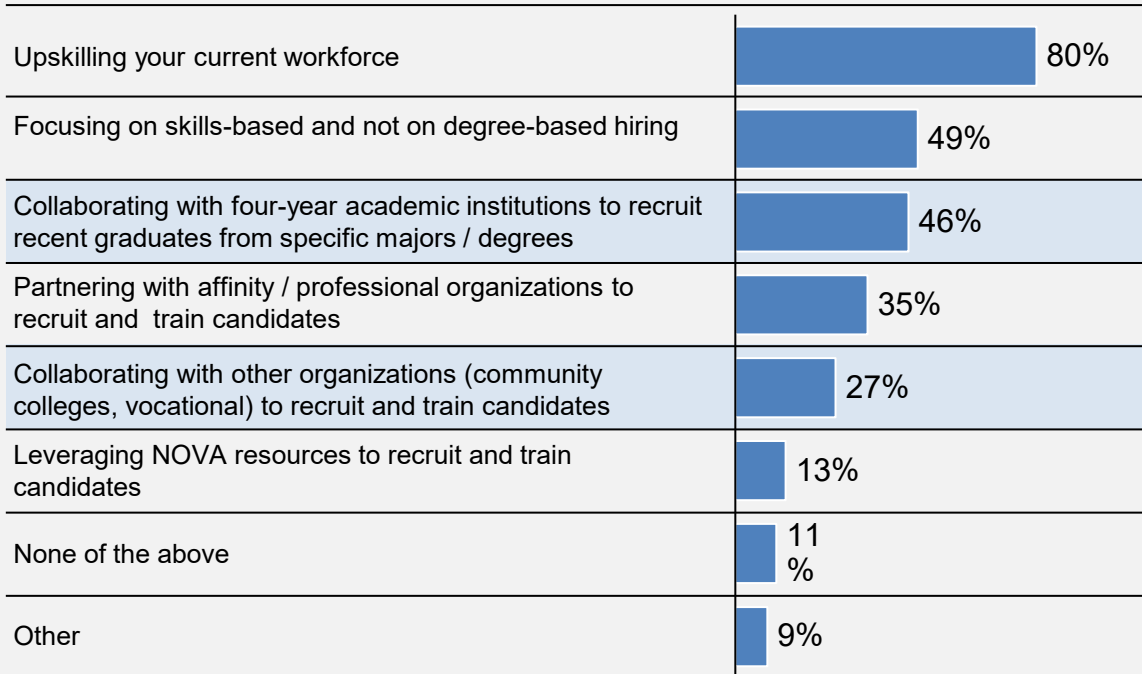


3. Appendix Q13

4. Appendix Q25A

Partnering with institutions to recruit candidates via internships and apprenticeships can help fill high-demand skills gaps

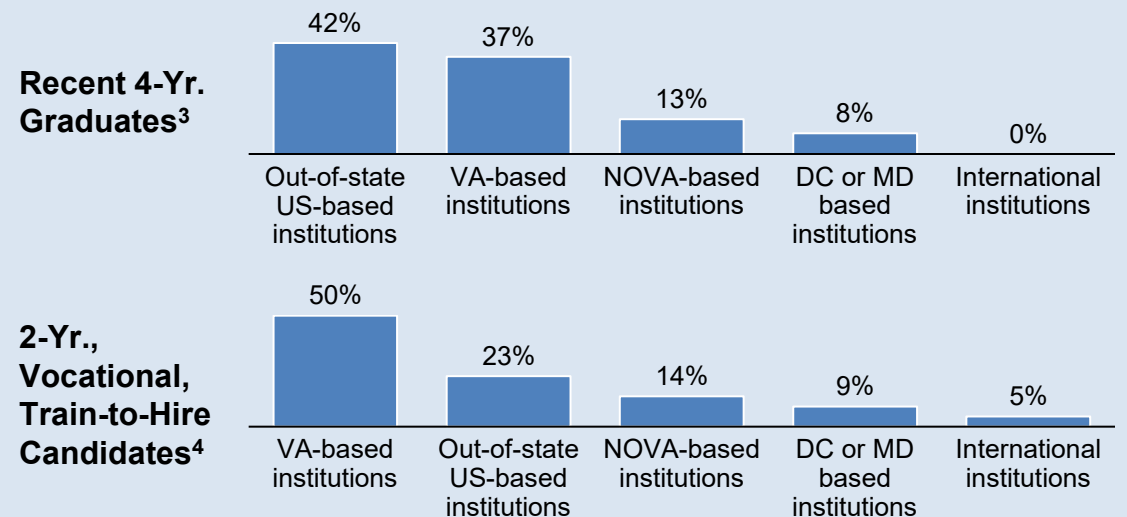
Effective actions to reduce skill gaps: % respondents¹



“If you want to fill 45,000 jobs, you need 15,000 internships a year.”

39% of organizations are who currently upskill employees
leverage internships²

Primary recruitment location^{3,4}, % respondents



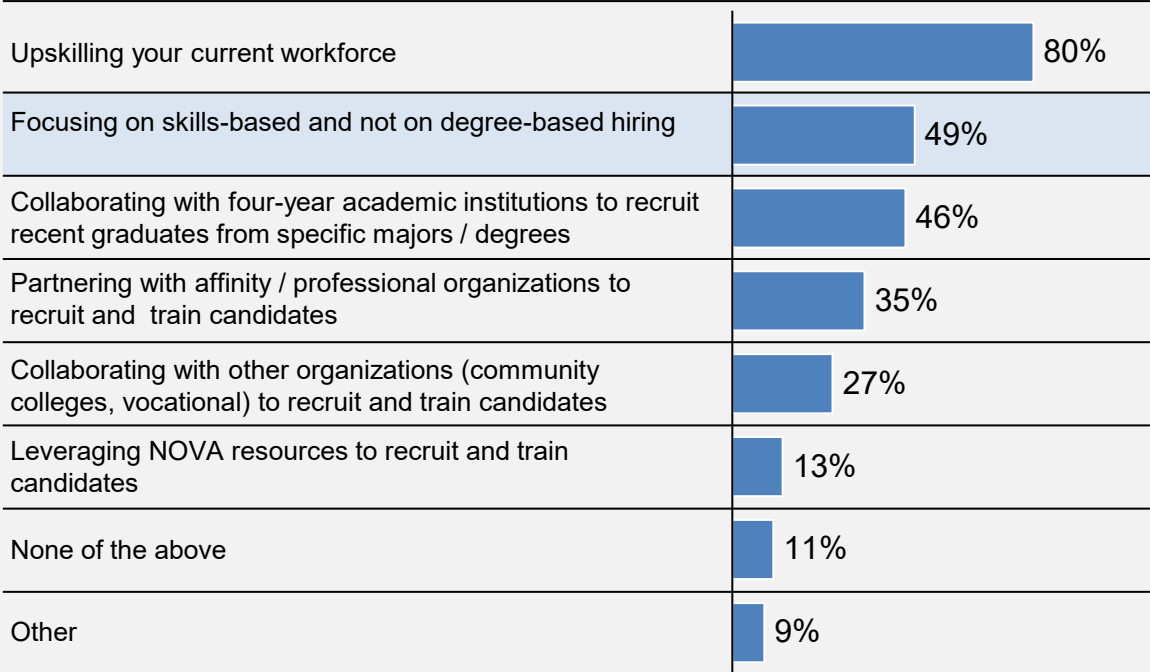
Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q25
2. Appendix Q25A

3. Appendix Q25B
4. Appendix Q25C

Leveraging skills-based vs. degree-based hiring opens the aperture of qualified candidates to help retain talent in the region

Effective actions to reduce skill gaps: % respondents¹



“We need to look at capabilities vs. resumes – focus on the marketplace of skills not degrees.”

5x

Hiring for skills is 5x more predictive of job performance than hiring for education and 2.5x more predictive than hiring for work experience²

What we heard

“Moving government more to skills-based hiring will open up a lot of opportunities in this region – there are a lot of super skilled individuals, many of whom are first generation. Certifications in certain software skill areas can make a huge difference in their ability to stay and get a job.”

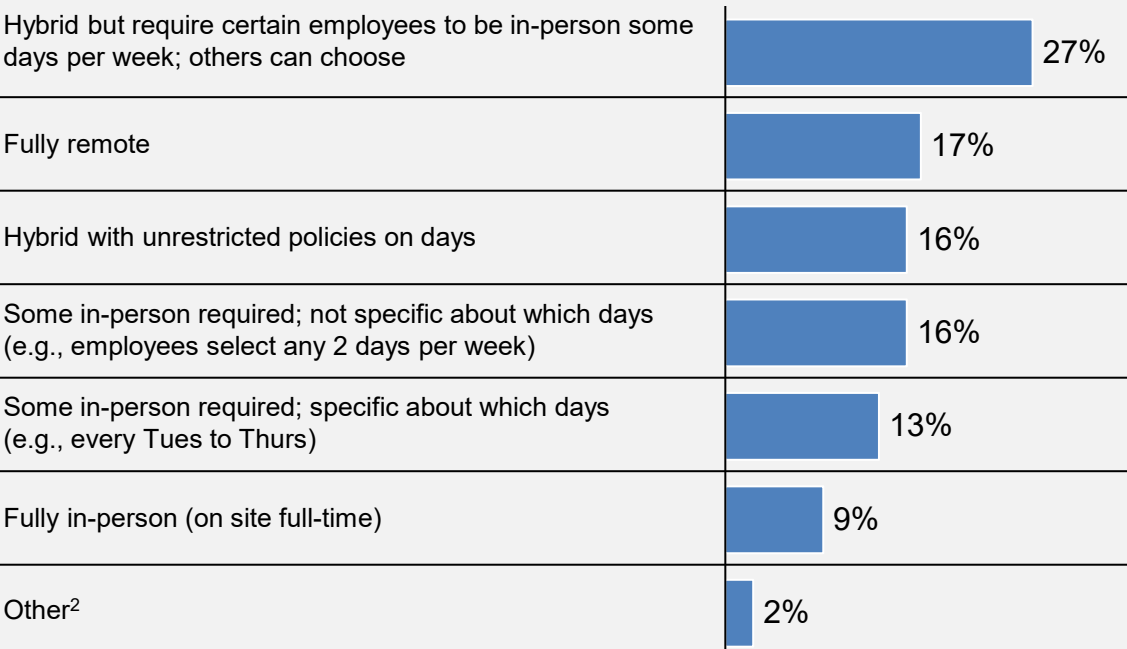
*“It’s important to make sure that graduates are ready for the jobs of the future. There’s a critical need for the state to have a more competitive, productive workforce and find incentives to **keep graduating students and those being re-skilled in the state.**”*

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q25
 2. The Markle Foundation - Skills-based Sourcing and Hiring Playbook ([link](#)), LinkedIn - LinkedIn Trends & Research - Why Skills-Based Hiring Starts with Your Job Descriptions ([link](#)), McKinsey - Diversity wins: How inclusion matters ([link](#))

Remote & hybrid models are now considered the norm to attract and retain talent, while organizations face lower occupancy rates

Current policies for NOVA employees: % respondents¹



Anticipated future changes: % respondents³

67% of organizations **do not anticipate any changes** to their current policies³, while others will transition to some **in person with specific days of required attendance** (13%) and **without specific days** (7%)

“We’ve seen a shift to hybrid work, and it’s here to stay. The flexibility it offers is something that employees value highly, and it’s becoming a standard expectation in many industries, especially tech.”

“If [talent] becomes tired of working in a closed classified environment like a SCIF, [many commercial tech firms] can hold your clearance, and you can work on exciting commercial stuff all day long.”

“The ‘return to office’ thing is a bigger question mark in NOVA than in other locations.”

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews
 1. Appendix Q21
 2. Other includes “customers dictate working model (e.g., some employees must work in SCIFs)”
 3. Appendix Q22



Innovation

GenAI, Cybersecurity, and Cloud Computing are the top three emerging technologies that organizations are investing in for NOVA-specific operations over the next 2-3 years.

With 89% of NOVA tech leaders investing in generative AI in the near-future, above the 74% of global peers¹, there is an opportunity to accelerate the adoption of GenAI solutions at scale.

NOVA continues to lead in Cyber and Cloud tech, with 83% of tech leaders investing in Cybersecurity and Digital Identity at higher rates than global peers currently, and 61% in Cloud and Edge Computing at a lower rate than current global investment.

Although Space Exploration and Awareness and Quantum are in the early stages of tech adoption, NOVA is positioned to become a leader in both technologies due to its concentration of federal R&D facilities and tech companies.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. McKinsey State of Technology 2024 report ([link](#))

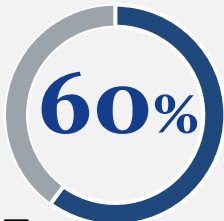


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“Innovation in Northern Virginia has a rich history leading groundbreaking developments like the internet, fueling research and commercialization of new tech, and enabling the growth of businesses.”

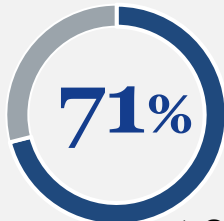
Keeping up with tech trends is top of mind for NOVA technology leaders, and organizations are investing accordingly

NOVA tech leaders' perspectives on emerging trends: % respondents



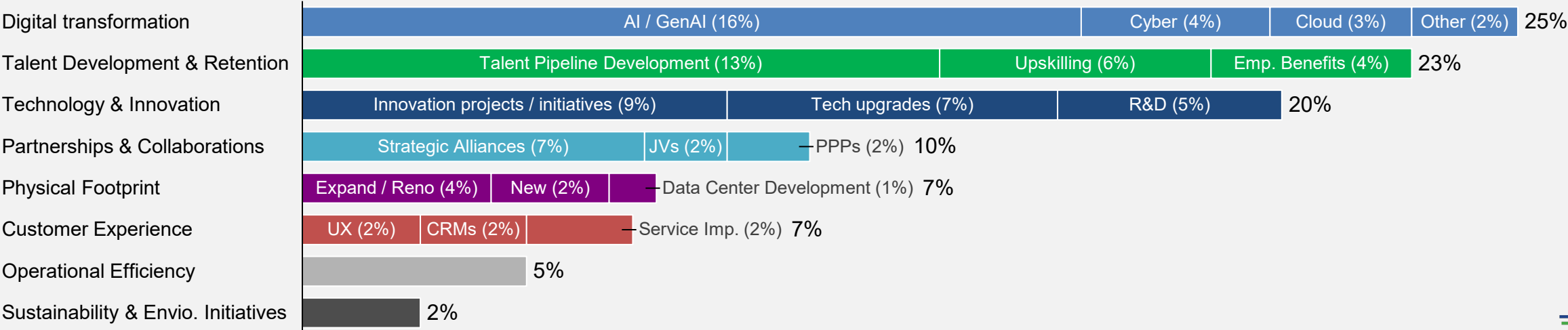
Cite **keeping up with emerging technology** as most impactful trend over the next 2-3 years¹

Of those respondents...



Believe keeping up with tech trends will **improve their organization's performance** over next 2-3 years²

Top areas of investment with highest impact on NOVA operations over next 2-3 years: % respondents³ (n=410 votes)



Source: 2024 NOVA Tech Ecosystem Survey (n=82), NVTC member interviews

1. Appendix Q8
 2. Appendix Q9
 3. Appendix Q13

Tech leaders identified GenAI, Cyber, and Cloud Computing as top areas of opportunity for NOVA-specific investments

NOVA tech leaders' perspectives on tech trends over 2-3 years, % respondents^{1,2}

	Largest opportunity over 2-3 years ¹	NOVA-specific investment over 2-3 years ²
Applied AI / Generative AI (GenAI)	84%	89%
Cloud + Edge Computing	57%	61%
Cybersecurity + Digital Identity & Trust Architecture	70%	83%
Internet of Things (IoT)	18%	16%
Quantum Computing	11%	10%
Web3 and Blockchain Technologies	10%	4%
5G and Advanced Connectivity	11%	10%
Additive manufacturing (3D/4D Printing)	5%	2%
Immersive Reality (AR, VR, MR)	12%	7%
Space Exploration & Awareness	11%	7%
Other (please specify) ³	9%	10%

Insights

AI, Cloud, and Cybersecurity lead due to high demand and cross-sector relevance

Organizations are in the **early stages of scaling productivity AI use cases**

Cybersecurity will remain a key regional priority due to the **persistent and complex nature of threats** to federal operations

Federal cloud adoption has been limited, but is **expected to grow as customers leverage secure, cloud-reliant tech (e.g., GenAI)**

Source: 2024 NOVA Tech Ecosystem Survey (n=82), NVTC member interviews

1. Appendix Q16

2. Appendix Q17

3. Responses for "Other (please specify)" includes digital engineering, CCMC compliance, DevSecOps, enterprise modernization, automation, critical event management / secure comms

Investment in AI is a priority for NOVA leaders, but the region is behind the curve when it comes to scaled adoption

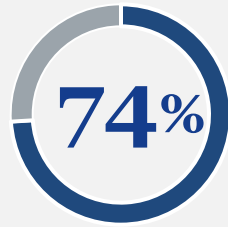
NOVA tech leaders' perspectives on AI / GenAI: % respondents^{1,2}

NOVA Tech Leaders



Rank AI / GenAI among top 3 investment priorities for NOVA operations over next 2-3 years¹

Global Peers



Self-report that they are currently investing in Applied AI and GenAI²

What we heard

“We are underperforming relative to our weight when it comes to how fast this region has adopted and has been at the forefront of the AI revolution.”

Insights

Organizations are **prioritizing internal productivity use cases**

Primarily due to **delayed adoption from the region's largest customer**, the federal government

Delayed federal government adoption is primarily **driven by risk aversion and compliance concerns**

Once barriers are addressed, **wide scale adoption and development of AI** can be expected in NOVA

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q17

2. McKinsey State of Technology 2024 report ([link](#))

Currently, organizations are mostly using GenAI for marketing & sales, and view it to be the most impactful in the near-future

GenAI adoption by business functions, % respondents^{1,2} Ranking (1= most impactful): ■ 1 ■ 2 ■ 3

	Current Usage ¹	Most impactful (2-3 years) ²
Marketing and Sales	61%	11 (Rank 3), 12 (Rank 2), 15 (Rank 1) = 38
Strategy & Corporate Finance	16%	3 (Rank 1)
Risk	22%	2 (Rank 2), 6 (Rank 1) = 8
HR	37%	8 (Rank 3), 5 (Rank 2), 3 (Rank 1) = 16
Product and/or Service Development	33%	4 (Rank 3), 6 (Rank 2), 13 (Rank 1) = 23
Supply Chain/Inventory Management	12%	2 (Rank 2), 4 (Rank 3), 1 (Rank 1) = 7
Manufacturing	6%	1 (Rank 1)
Service Operations	27%	3 (Rank 3), 6 (Rank 2), 7 (Rank 1) = 16
Other corporate functions	37%	5 (Rank 3), 9 (Rank 2), 3 (Rank 1) = 17
Software Engineering	30%	4 (Rank 3), 3 (Rank 2), 13 (Rank 1) = 20
IT	43%	4 (Rank 3), 10 (Rank 2), 2 (Rank 1) = 16
Mission-focused function(s)	23%	5 (Rank 3), 7 (Rank 1) = 13
Not applicable; my organization has not adopted AI	10%	7 (Rank 1) = 7
Don't know	7%	2 (Rank 3) = 2

Insights

NOVA tech leaders highlighted use cases in **federal government procurement practices**, including RFP responses, compliance, and document review

Other use cases include **training and onboarding** for call center employees, predictive analytics, and task automation

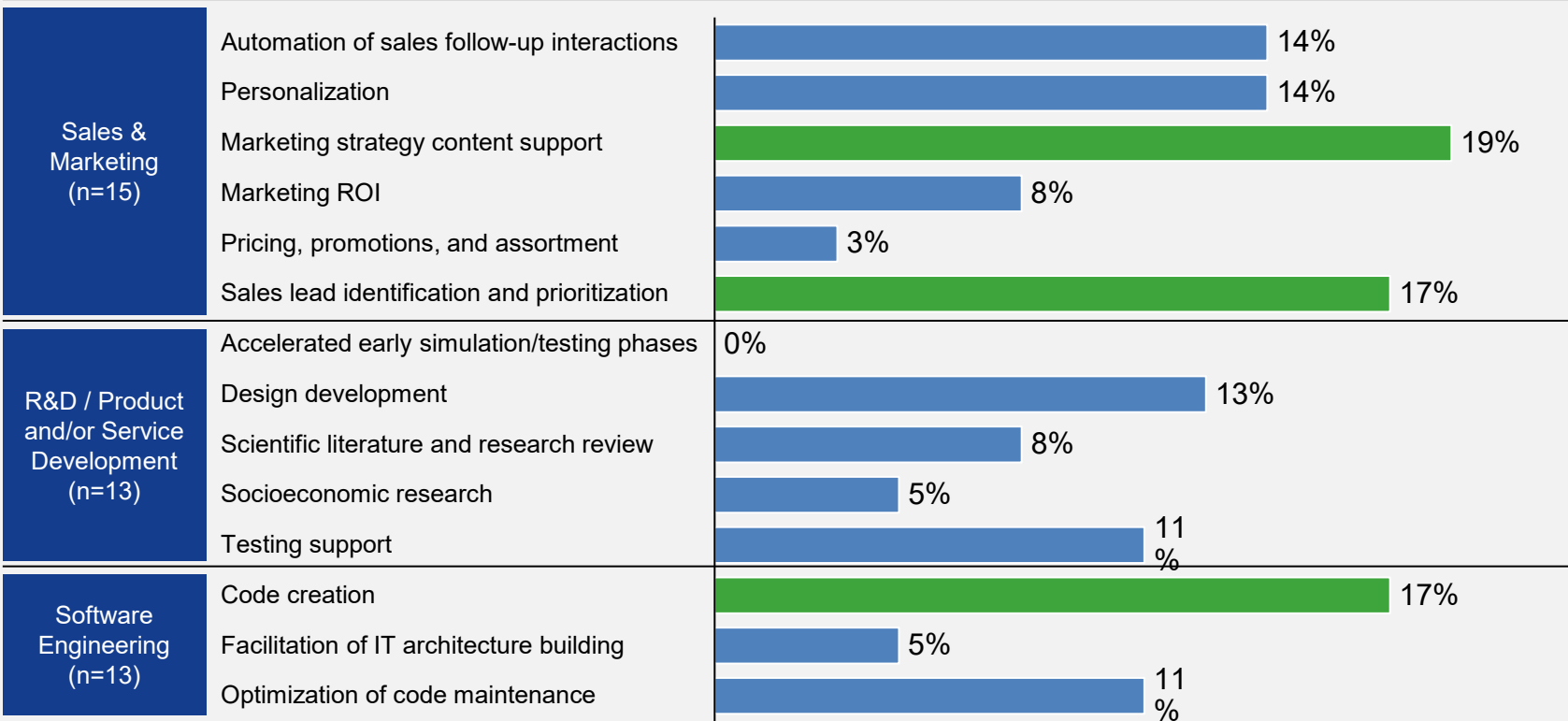
Barriers to full scale adoption include **data cleaning** and systems modernization

Source: 2024 NOVA Tech Ecosystem Survey (n=82)

1. Appendix Q18
2. Appendix Q19

Within the top business functions using GenAI, marketing strategy, sales lead identification, and code creation drive the most impact

Most impactful GenAI use cases, % NOVA respondents¹



Insights

For Sales & Marketing, **marketing strategy content support use cases** are viewed as most impactful by NOVA tech leaders, followed by sales lead identification and prioritization

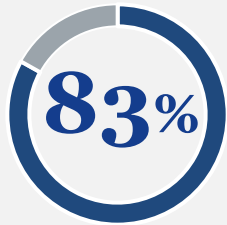
Within R&D / Product and Service Development, **design development** is viewed as most impactful use cases by NOVA leaders

In Software Engineering, **code creation** use cases are recognized as most impactful by NOVA tech leaders

Cybersecurity is a significant area of investment in the region, with NOVA continuing its position as leader in the space

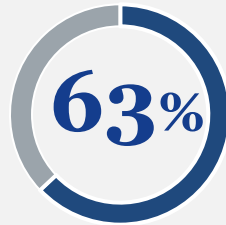
NOVA tech leaders' perspectives on Cybersecurity and Digital Identity & Trust Architecture^{1,2}

NOVA Tech Leaders



Ranked **cyber** among the **top three areas of investment** for NOVA operations over 2-3 years¹

Global Peers



Self-report that they are currently **investing in Digital Trust and cybersecurity**²

What we heard

“Cybersecurity is always going to be a big deal, and it will continue to be an area of importance for the region.”

Insights

Constant cyber threats and increased demand from the region’s biggest customer, the US federal government, drives continued investment in cyber technology

Tech leaders emphasize the importance of cyber to identify and **mitigate threats resulting from emerging tech**, such as Quantum Computing and GenAI

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

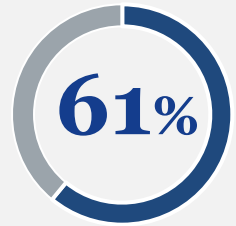
1. Appendix Q17

2. McKinsey State of Technology 2024 report ([link](#))

Cloud and Edge Computing is also a significant area of investment in the region, with the potential to grow as adoption increases

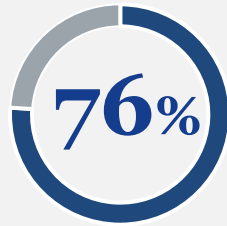
NOVA tech leaders' perspectives on Cloud and Edge Computing^{1,2}

NOVA Tech Leaders



Ranked **cloud and edge as the top three areas of investment** for NOVA operations over 2-3 years¹

Global Peers



Self-report that they are currently **investing in cloud and edge computing**²

What we heard

“Only 15-18% of the federal government has really leveraged cloud to support the mission or services for citizens, but we will see more movement as they look to leverage AI tools.”

Insights

Federal government adoption of cloud technology is expected to increase to fully leverage GenAI and other emerging technologies

Adoption of multi-cloud and hybrid-cloud solutions is expected to rise due to greater need for flexibility and scalability to meet the diverse needs of federal government missions

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q17

2. McKinsey State of Technology 2024 report ([link](#))

Space tech and Quantum are in their early stages of adoption, but NOVA organizations see long-term potential to lead in these areas

Tech leaders' perspectives on Space Technology

Despite limited priority investment over the next 2-3 years (7% of respondents)¹, NOVA has the potential to become **a leader in space exploration & awareness technology**

NOVA's advantages include being home to NASA's headquarters, key satellite agencies, and private space companies

*“From advancements in space connectivity to pioneering concepts like space computing, the area is experiencing rapid growth. **NOVA has achieved remarkable success in the space tech sector.**”*

“One area of technology that has been an unbelievable win for the region is space.”

Tech leaders' perspectives on Quantum Computing

While only 10% of respondents are prioritizing investments in it over the next 2-3 years¹, **tech leaders view Quantum as “revolutionary” tech with high long-term potential**

Given the region's cyber prevalence and Quantum applications in security, **increased investment is expected** over the longer-term

*“There is a massive future in healthcare for quantum. Being able to calculate and predict things that happen in the natural world is **not something a classical computer is geared to do.**”*

“When you say quantum, I think of a similar impact to the degree of the internet.”

Ecosystem

In 2022-23, Virginia attracted over 10K startups¹ and raised \$2.5B in venture capital, ranking #8 nationally². Despite this surge, NOVA's capital funding lags peer tech hubs^{3,4}, posing challenges especially for early-stage companies.

NOVA excels in developing growth-stage companies, ranking #1 in the number of firms that scaled up (>50 employees within 10 years) and #1 in the density of high-growth companies (>\$2M revenue per 1K firms), compared to peers^{3,4}.

The NOVA tech ecosystem is home to over 17K tech companies⁵, including some of the world's largest tech firms, and its close ties with the US federal government uniquely drive innovation, growth, and advancement for businesses.

To solidify NOVA as a leading tech hub, tech leaders suggest enhancing the regional brand, promoting emerging tech, and strengthening the entrepreneurial ecosystem by boosting visibility and development of accelerators and incubators for better mentorship.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. VIPC press release August 9, 2024 ([link](#))
2. Pitchbook-NVCA Venture Monitor report
3. Pitchbook

4. Peer MSAs include Austin, Boston, Chicago, Dallas, Los Angeles, New York, Raleigh, San Francisco, and Seattle
5. FCEDA press release July 21, 2022 ([link](#))

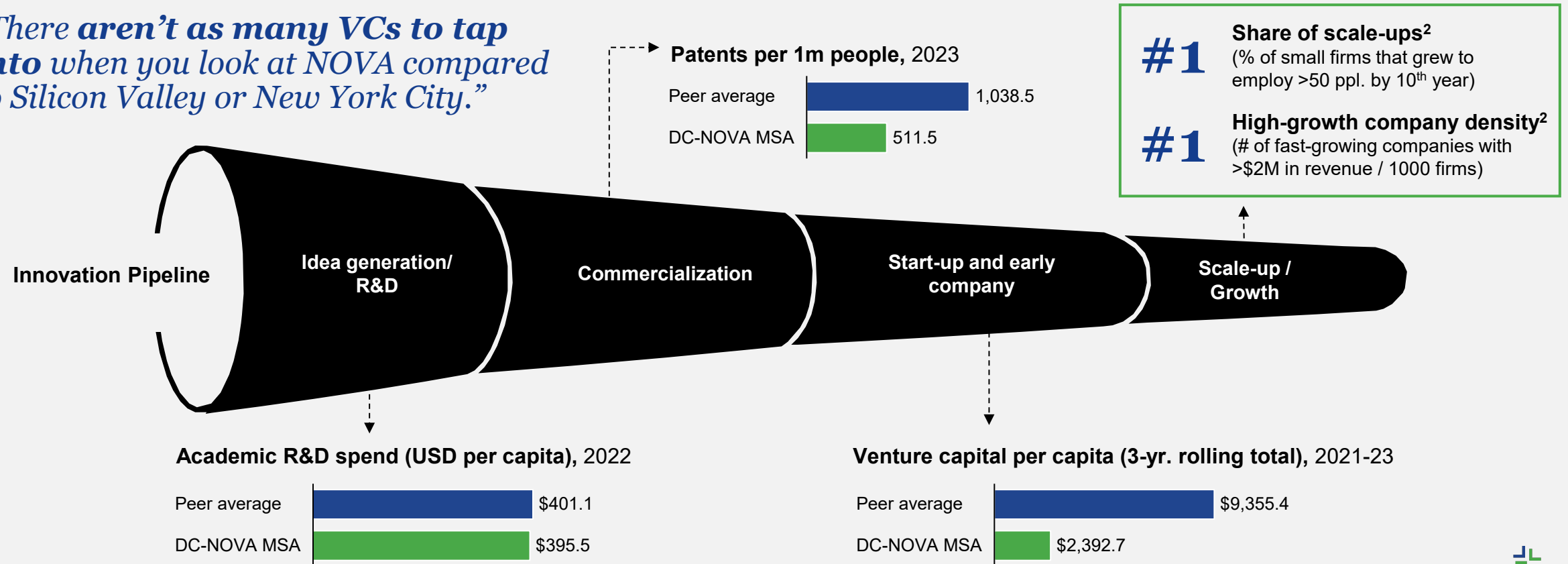
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“The unique benefit of the region is the confluence of mainstream tech companies, defense contractors, and the federal government. This creates a rich ecosystem for innovation and development.”

The region outperforms peers during the scale-up or growth stage of the innovation pipeline but lags in early-stage development

Innovation pipeline, Washington-Arlington-Alexandria MSA compared to peer MSAs¹

“There aren’t as many VCs to tap into when you look at NOVA compared to Silicon Valley or New York City.”



Source: National Science Foundation (NSF), Moody’s Analytics, PitchBook, USPTO, EMS, Kauffman Index of Growth Entrepreneurship (2018)

1. Peer MSAs include Austin-Round Rock-Georgetown, TX Boston-Cambridge-Newton, MA-NH Chicago-Naperville-Elgin, IL-IN-WI Dallas-Fort Worth-Arlington, TX Los Angeles-Long Beach-Anaheim, CA New York-Newark-Jersey City, NY-NJ-PA Raleigh-Cary, NC San Francisco-Oakland-Berkeley, CA Seattle-Tacoma-Bellevue, WA

2. Austin, Raleigh, & Seattle MSAs not included in comparison

While NOVA has access to R&D funding and multiple research institutions, patent conversion is below peers

NOVA's research ecosystem, Washington-Arlington-Alexandria MSA

60+ higher education institutions²

100+ federal labs and R&D centers²

\$2.5B total academic R&D funding in 2022³, 4.76% CAGR increase from 2012-22

NOVA's academic funding is on par, but trails peers in patent production

1:1 ratio to peer MSAs in **Academic R&D spend per capita**^{1,3}

1:2 ratio for **patents produced per 1 million people** vs. peers^{1,3}

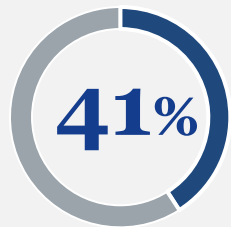
Insights

Region has an **established R&D ecosystem with slight uptick in funding over the past decade**, demonstrating research remains a priority

However, the region is underperforming in **translating research into commercialized patents**

NOVA has an opportunity to **boost access to academic institutions and funding**, as 41% of tech leaders cite it as influential in their decision to stay

NOVA tech leaders' perceptions on R&D, % respondents



of tech leaders cited **access to world-class research institutions** as impactful to their decision to stay or leave NOVA⁴

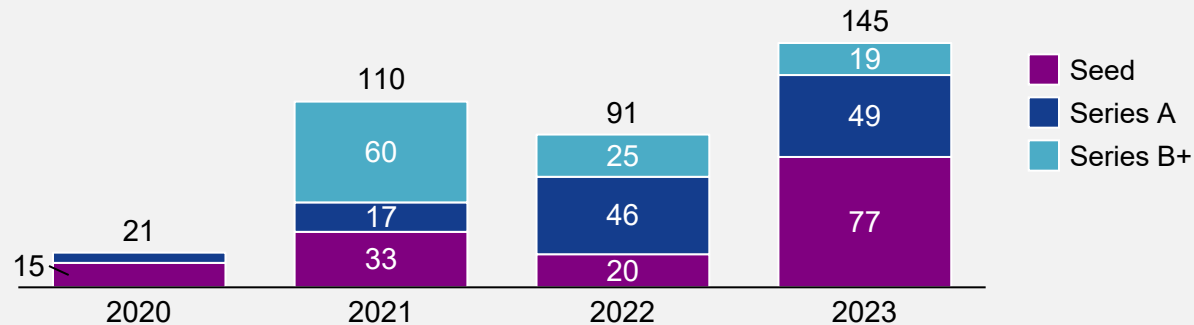
“Research seeds innovation. Basic and applied sciences and the commercialization – that’s how innovation is introduced into the market. NOVA universities integrate teaching, learning, and research together inextricably.”

1. Peer MSAs include Austin-Round Rock-Georgetown, TX Boston-Cambridge-Newton, MA-NH Chicago-Naperville-Elgin, IL-IN-WI Dallas-Fort Worth-Arlington, TX Los Angeles-Long Beach-Anaheim, CA New York-Newark-Jersey City, NY-NJ-PA Raleigh-Cary, NC San Francisco-Oakland-Berkeley, CA Seattle-Tacoma-Bellevue, WA
2. Fairfax County Economic Development Authority ([link](#)); Greater Washington Partnership ([link](#))
3. National Science Foundation (NSF), Moody's Analytics, PitchBook, USPTO, EMS, Kauffman Index of Growth Entrepreneurship (2018)
4. Appendix Q15

Despite a recent surge in high-growth start-ups and VC investment, NOVA still has room to improve

VC funding, Washington-Arlington-Alexandria MSA

Venture Capital Investment by Stage, \$M, 2020-23
adjusted for inflation



Insights

Despite year-over-year improvements, **peers spend 4x more VC per capita compared to the region**¹

Even with increased early-stage funding and the influx of VA start-ups, **37% of tech leaders see investment capital as a top barrier to regional growth**⁴ – especially at early stages

NOVA excels in company growth support, with #1 ranking for scale-ups (>50 employees within 10 years) and high-growth company density (>\$2M revenue per 1K firms) compared to peers^{1,2}

The region can leverage their success in growth-stage support to improve early-stage opportunities to increase entrepreneurial impact

1:4 average VC investment per capita compared to peer MSAs (2021-23)¹

10K high-growth / high-wage VA startups (2022-23), with estimated ~40% in NOVA³

Sources: 2024 NOVA Tech Ecosystem Survey (n=82), NVTC member interviews, Moody's Analytics, PitchBook, EMS, Kauffman Index of Growth Entrepreneurship (2018)

1. Peer MSAs include Austin-Round Rock-Georgetown, TX Boston-Cambridge-Newton, MA-NH Chicago-Naperville-Elgin, IL-IN-WI Dallas-Fort Worth-Arlington, TX Los Angeles-Long Beach-Anaheim, CA New York-Newark-Jersey City, NY-NJ-PA Raleigh-Cary, NC San Francisco-Oakland-Berkeley, CA Seattle-Tacoma-Bellevue, WA

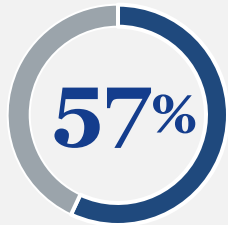
2. Austin, Raleigh, & Seattle MSAs not included in comparison
3. VIPC press release ([link](#)); expert interviews
4. Appendix Q11

NOVA tech leaders cite access to industry clusters and public-private partnerships as key regional advantages

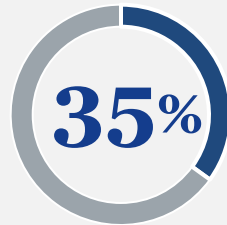
Tech companies operating in NOVA

17K+ tech companies operate in NOVA, including five Fortune 100 and 15 Fortune 500 companies^{1,2}

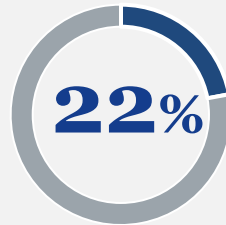
NOVA tech leaders' perspectives on industry, % respondents



Cited **access to industry clusters** as impactful to their decision to stay or leave NOVA³



Cited **strategic alliances** as top 5 most impactful area to invest in over the next 2-3 years⁴



Cited **public private partnerships** as a top 3 most important economic incentive⁵

“Access to public private partnerships is a huge benefit to operating in NOVA.”

*“It's amazing what efforts like the **George Mason Fuse Center** is doing to bring together the academic, commercial and government customers together.”*

Insights

Proximity to industry peers matters to NOVA tech leaders, as **collaboration and competition can stimulate growth**

Tech leaders believe investments in strategic alliances are impactful, highlighting NOVA's opportunity to **boost interaction channels**

Tech leaders emphasize the need for **strengthening public-private partnership awareness** and activity

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Fairfax County Economic Development Authority (FCEDA) newsletter ([link](#))
2. FCEDA press release July 21, 2022 ([link](#))

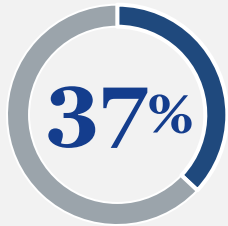
3. Appendix Q15

4. Appendix Q13

5. Appendix Q12

NOVA has an opportunity to increase collaboration and development across the entrepreneurial ecosystem

NOVA tech leaders' perspectives, % respondents



View **innovation hubs and accelerators** as a top 3 most important economic incentives¹

Examples of NOVA innovation hubs (non-exhaustive)



“The accelerator community is gaining momentum, but it could be much more public and more concerted.”

Insights

NOVA lags other tech hubs in the availability and centralization of **start-up developmental programs**

Large and small companies in NOVA want **mentorship opportunities** but lack connection channels

NOVA’s accelerator and incubator programs can benefit from **increased advertisement and broader connectivity** across the ecosystem

What we heard

“NOVA doesn’t have a clear ‘front door’ for entrepreneurs and start-up organizations. Even in other regions in Virginia, you could point to front doors for start-ups to go to.”

“Some start-ups may just not be aware of available accelerators and incubators in the NOVA region.”

Increased company development is one of five key improvements that NOVA tech leaders believe will improve the ecosystem

Potential tech ecosystem improvements	What we heard ¹
<p>1 Improve access to capital: Availability and access to VC at all start-up stages</p>	<p><i>“The angel network in NOVA is healthy because there are a lot of wealthy business folks and investors in the area, and they could be leveraged more.”</i></p>
<p>2 Enhance collaboration: Engagement between academic, public, & private sectors</p>	<p><i>“It’s important that we continue to help the career and technical centers, the community colleges, and the universities to get them together and excited about technology.”</i></p> <p><i>“What if we started an inter-university tech hub that can draw students in and be more engaged with the tech ecosystem?”</i></p>
<p>3 Improve awareness of tech expertise: Highlight NOVA’s emerging tech capabilities</p>	<p><i>“NOVA would benefit if we had a broader event that’s more representative of all of the technologies that we have to offer.”</i></p>
<p>4 Shift the public perception of NOVA: Help shift NOVA’s perceived government-centric reputation</p>	<p><i>“Unfortunately, the tech press has moved to the west coast. They’re not here, so there’s no one here to tell our story to help influence the brand in that respect.”</i></p> <p><i>“In NOVA there’s less of a culture of big risks, new ventures, and embracing the potential for failure that typically comes with start-ups and innovation.”</i></p>
<p>5 Improve entrepreneurial development: Access to accelerators, incubators & support</p>	<p><i>“There is a need for greater incubation, more accelerators, more ability within this region to go from seed to VC into private equity, to go public, and to grow into larger companies.”</i></p>

Business Attraction

Tech organizations are committed to NOVA: 77% plan to stay, and 29% are considering expanding within NOVA in the next 2-3 years. Key decision factors for reducing or expanding presence in the region include ease of doing business, talent, and infrastructure.

NOVA stands out for its business-friendly regulatory environment and Virginia's grants and incentives, making it an attractive choice for companies compared to other regions, despite rising costs.

While NOVA's cost of living is lower relative to other major tech hubs, 54% of tech leaders see it as a top growth barrier. High housing costs drive out-migration, posing talent retention challenges.

NOVA boasts the nation's largest data center market (~5x capacity of Silicon Valley¹) as well as top-rated public transportation, making its infrastructure a key regional advantage.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. CBRE North America Data Center Trends H1 2024 ([link](#))

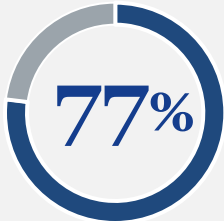
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“Northern Virginia’s multifaceted infrastructure, encompassing both technical and educational elements, has established NOVA as a hub for innovation and growth.”

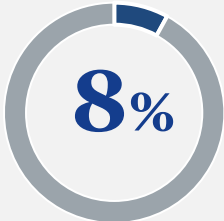
Most organizations plan to stay or expand in NOVA, citing cost of doing business, cost of living, access to talent & infrastructure as primary factors

Future presence in NOVA, % respondents¹

Most organizations expect to remain in NOVA over 2-3 years...



Are considering **staying within NOVA** over 2-3 years (either no change, expanding, or relocating in region)¹



Are considering **reducing their NOVA presence** (6%) or leaving (2%)¹

...with many organizations investing in their physical footprint



Are considering **expanding their NOVA presence** in the next 2-3 years¹, including 12% adding new real estate³



Are planning to **expand and/or renovate current real estate** in NOVA over 2-3 years³

“Access to talent is very attractive to us. That is why we have stayed here. Being in a pro-business area is certainly appealing.”

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q14; for remaining respondents, ~7% are considering expanding outside of NOVA and ~7% Don't Know / Prefer not to answer
 2. Appendix Q15
 3. Appendix Q13

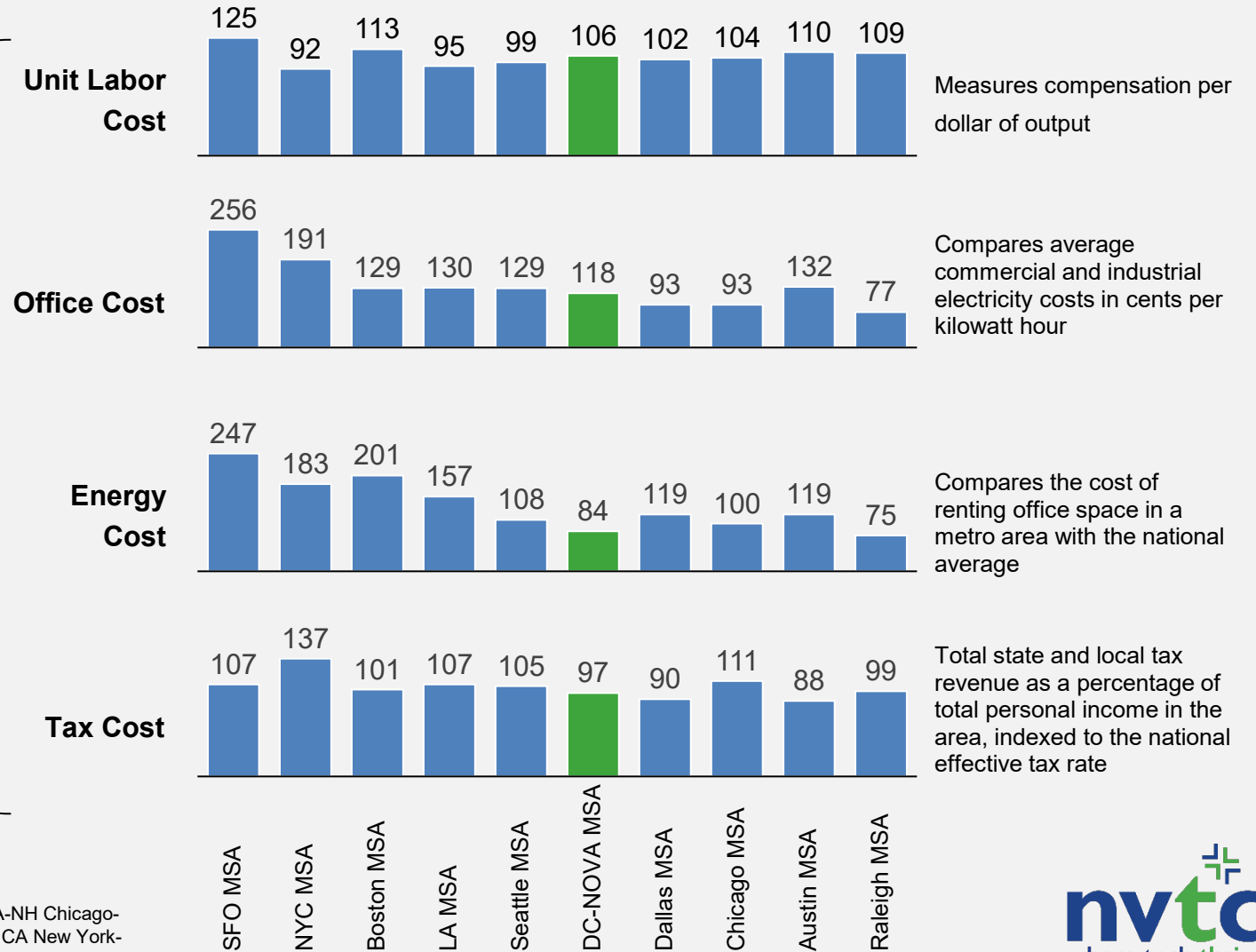
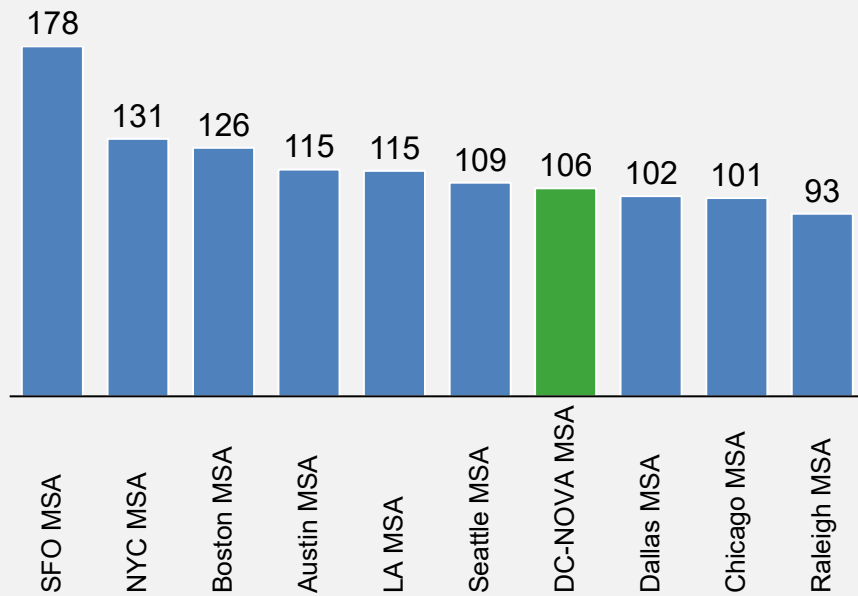
NOVA presence decision factors, % respondents² (n=82)

Factor Category	Factor	Don't know	No impact	Some impact	Significant impact
Ease of Doing Business Factors	Cost of doing business	11%	32%	52%	3%
	Business Tax	11%	22%	33%	35%
	Income Tax	11%	11%	46%	34%
Talent Factors	Cost of Living	11%	35%	48%	11%
	Quality of education system	11%	21%	45%	26%
	Access to diverse talent	11%	30%	48%	13%
	Quality of workforce or sector-based job training programs	11%	16%	41%	34%
Infrastructure Factors	Quality of infrastructure	11%	16%	55%	22%
	Access to world-class research institutions	11%	13%	28%	49%
	Access to industry clusters with organizations in the same industry	11%	15%	43%	34%

■ Significant impact ■ Some impact ■ No impact ■ Don't know

While it is more expensive to do business in the region than the nation overall, the region has lower costs of doing business relative to peer MSAs

Cost of doing business^{1,2}
2021, 100=US Average



Source: Moody's Analytics

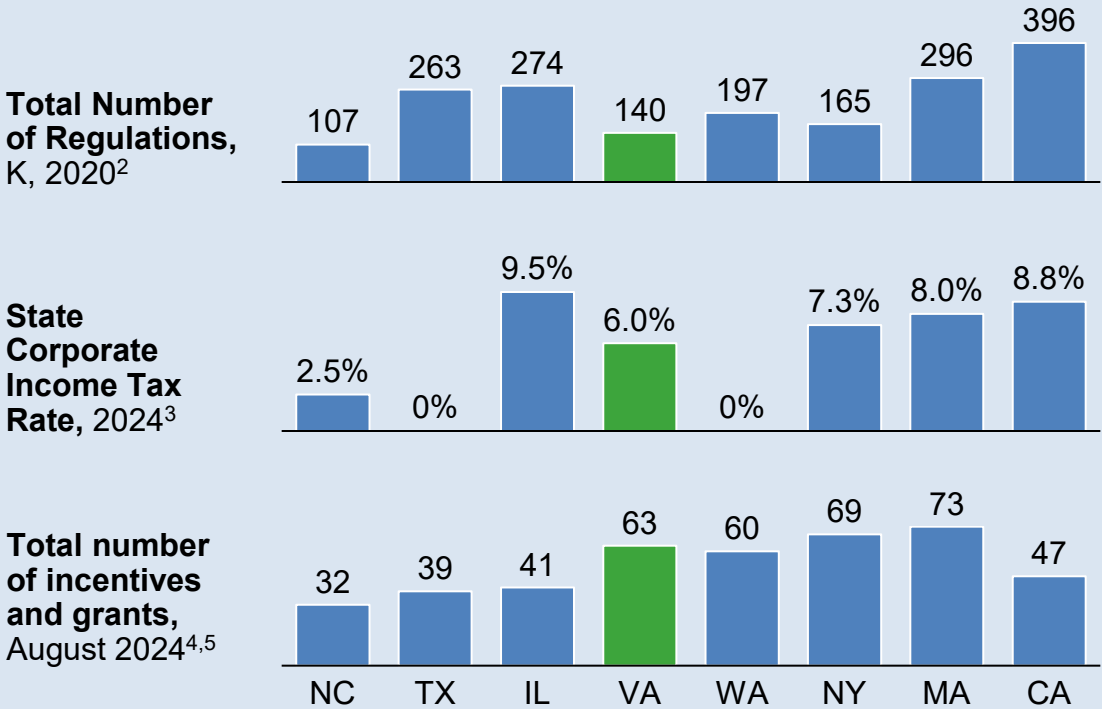
1. DC-NOVA MSA: Washington-Arlington-Alexandria, DC-VA-MD-WV ([link](#))
2. Peer MSAs include Austin-Round Rock-Georgetown, TX Boston-Cambridge-Newton, MA-NH Chicago-Naperville-Elgin, IL-IN-WI Dallas-Fort Worth-Arlington, TX Los Angeles-Long Beach-Anaheim, CA New York-Newark-Jersey City, NY-NJ-PA Raleigh-Cary, NC San Francisco-Oakland-Berkeley, CA Seattle-Tacoma-Bellevue, WA

Tech leaders value Virginia’s business-friendly regulations and tax incentives, making NOVA an attractive region for organizations

Most important economic incentives: % respondents¹

Business-friendly regulations	49%
Access to affordable housing	38%
Tax incentives and credits	35%
Workforce development programs	34%
Innovation hubs and accelerators	37%
Access to private capital	24%
Investment in Infrastructure	27%
Public-private partnerships	22%
Grants and subsidies	15%
Real estate and development incentives	12%
Reduced tariffs and trade barriers	5%
Other (please specify)	2%

Virginia has lower corporate income tax rates and number of regulations compared to other states with tech hubs



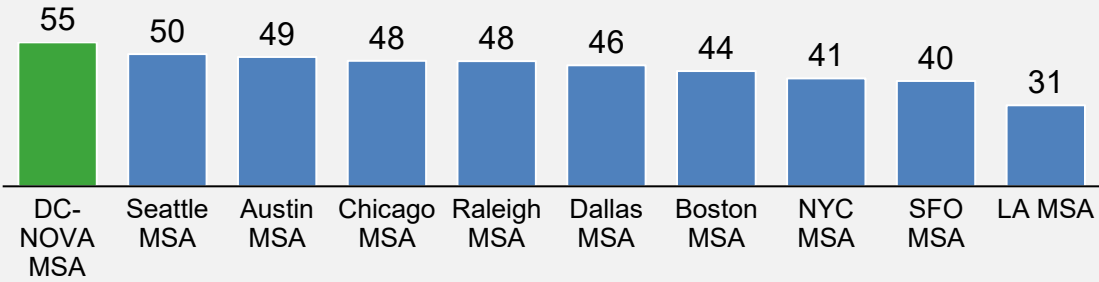
Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q12
 2. Ascend ([link](#)), Quant Gov ([link](#))

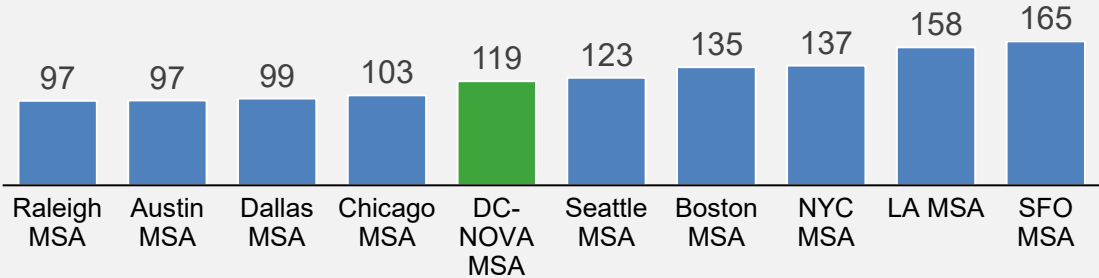
3. Tax Foundation ([link](#))
 4. The Council for Community & Economic Research (C2ER)
 5. All states correlate to nine peer MSAs

While many leaders perceive cost of living to be a challenge for the region, NOVA fares favorably relative to peer MSAs

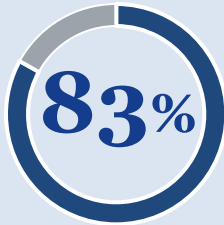
Median annual earnings, adjusted for cost of living, \$K, 2022–23¹



Cost of living index of peer MSAs, 2024
100=US Average¹



NOVA tech leaders' perspectives on cost of living, % respondents



Cited **cost of living** (e.g., cost of housing, childcare, healthcare) as impacting their decision to stay in the region²

Insights

Tech leaders cite cost of living to be a major challenge for the region, but relative to peer MSAs, **NOVA residents have the highest median earnings when adjusted for cost of living**

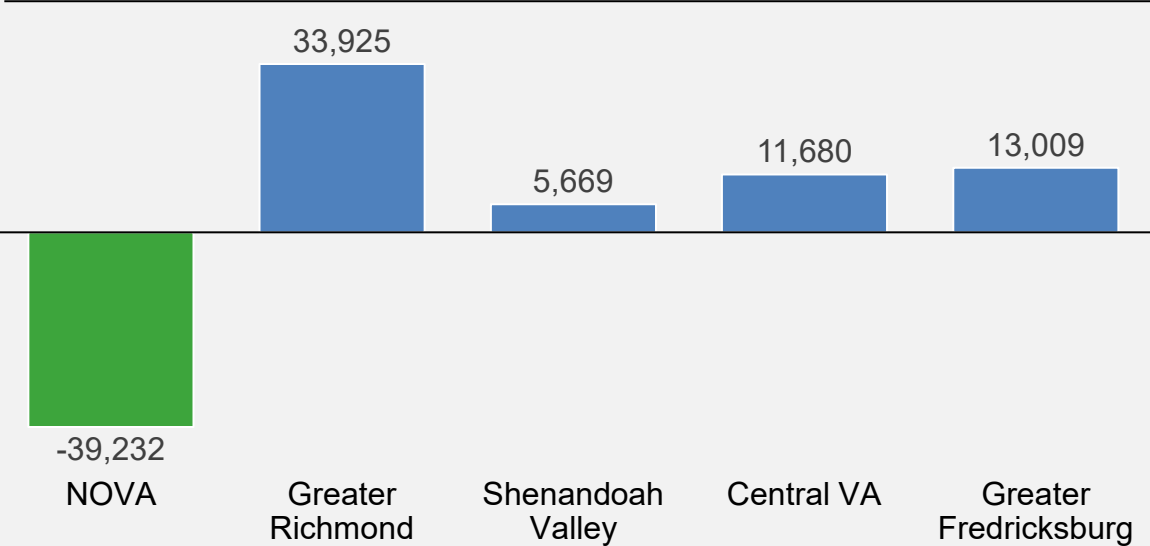
While NOVA's cost of living is higher than the national average, **it is still among the lower half of peer MSAs**

“Relative to the markets that NOVA competes with, people coming out of those regions get a bargain when they come here.”

Source: 2024 NOVA Tech Ecosystem Survey (n=82), NVTC member interviews
1. The Council for Community & Economic Research (C2ER) 2024; DC-NOVA MSA is Washington-Arlington-Alexandria, DC-VA-MD-WV ([link](#))
2. Appendix Q15

However, affordable housing remains a challenge for retaining talent in the region

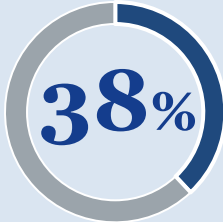
Net migration by Virginia regions¹, 2019-2023



NOVA tech leaders' perspectives on affordable housing, % respondents¹



Ranked quality of life (e.g., affordable housing, healthcare, amenities) as a **key barrier to growth** for NOVA²



Cited **access to affordable housing** as a key economic initiative, the second highest behind business-friendly regulations³

*“This boils down to our young people. When they move to the area, they stay here for a year or two and then **they're leaving because the cost of rent is high, and the cost of buying a house is astronomical.**”*

*“Home prices and housing costs **make it very difficult for a lot of young people to be able to afford to live closer to DC,** so they have to spread out.”*

Source: 2024 NOVA Tech Ecosystem Survey (n=82), NVTC member interviews

1. UVA Cooper Center of Public Service ([link](#)); NOVA includes counties (Arlington, Fairfax, Fauquier, Loudoun, Prince William, Rappahannock) and cities (Alexandria, Fairfax, Falls Church, Manassas, Manassas Park)
2. Appendix Q11
3. Appendix Q12

NOVA excels in the attractive quality of life factors that top businesses and talent are looking for in a tech hub

Why NOVA stands out



15/20

of the best public high schools in Virginia are in NOVA¹



2/10

of the US cities with the best public transportation in the nation are Arlington and DC²



2/11

of the safest cities in America are in NOVA³



99%

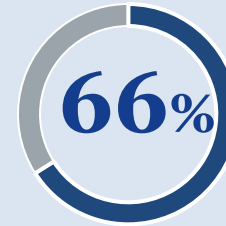
of Arlington and D.C. residents live within a 10-minute walk of a park vs. 55% nationally with both areas having 2/5 highest park scores in the US⁴

“NOVA enables an amazing quality of life: Arts, music, public transit, dining, it’s all here.”

NOVA tech leaders’ perspectives on quality of life, % respondents¹



Ranked **quality of life** (e.g., affordable housing, school system, healthcare, amenities) as a **top three advantage** of NOVA as a leading tech hub⁵



Cited **quality of education system** (e.g., early childhood, K-12, public higher education) as a factor impacting their decision to stay⁶

“From a lifestyle perspective, the region is attractive, particularly for younger talent - the area provides a robust lifestyle.”

“The ability to move around the region is an advantage, whether that’s access to the metro or IAD and DCA airports.”

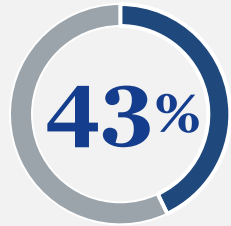
Source: 2024 NOVA Tech Ecosystem Survey (n=82), NVTC member interviews

1. Niche 2024 Best Public High Schools in Virginia ([link](#))
2. 2024 US News & World Report ([link](#))
3. 2023 Smart Asset Safest Cities in America ([link](#))

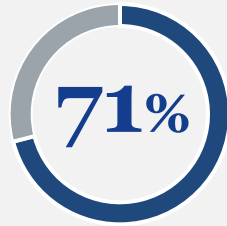
4. Trust for Public Land, 2024 Park Score Rankings ([link](#)); DC ranked #1, Arlington ranked #5
5. Appendix Q10
6. Appendix Q15

NOVA's extensive tech infrastructure serves as a driver for economic growth in the region

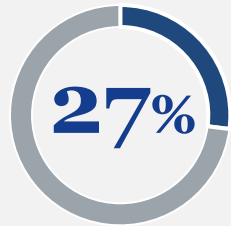
NOVA tech leaders' perspectives on industry, % respondents



Ranked **infrastructure** (e.g., advanced tech infrastructure and reliable transportation) as a top 3 advantage of NOVA¹



Cited **quality of infrastructure** (e.g., public transport, digital access, roads and bridges) as impactful to their decision to stay or leave the region²



Cited **investment in infrastructure** (e.g., transportation, utilities, amenities) as a top 3 most important economic incentive³

“Northern Virginia is particularly well equipped with the foundational kind of connectivity that you need for data centers, while also serving as a global hub and crossroads for data traffic.”

NOVA's “Data Center Alley”⁴

~45% of the **total inventory of the top 8 most active data center markets** in N. America is in NOVA

>5x **more inventory than Silicon Valley** and over 4x more inventory than Dallas-Ft. Worth, the next highest N. American market

“There is nothing like NOVA’s cloud capacity on the planet, and there are not bigger pipes coming in any region like ours.”

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q10
2. Appendix Q15

3. Appendix Q12
4. CBRE North America Data Center Trends H1 2024 ([link](#))

Federal Government

The US federal government is a massive customer in NOVA: of its ~\$77B spend on IT contracting in the US in 2023, 53% was performed in the DC-MSA region (~\$41B) and 31% in NOVA alone (~\$24B)^{1,2}. Shifts in government priorities can create budget uncertainty for tech leaders, especially for less established firms.

NOVA offers tech firms unique access to the federal government, aiding client connections and insights into mission challenges. However, start-ups and niche firms face high entry barriers due to contract procurement hurdles.

NOVA's edge is its federal government access, but 18% of tech leaders see access to non-federal markets as a potential barrier to growth, suggesting reliance on government contracts may suppress market diversification.

A federal government-centric market in NOVA offers stability but may stifle innovation. Coupled with slow tech adoption and inefficient procurement, NOVA risks being seen as lagging in embracing new technologies.

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

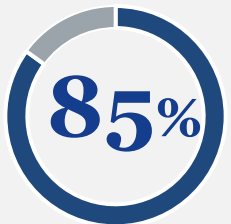
1. Bloomberg Government; original data sourced from publicly-available contract data from USASpending, FPDS, and SAM.gov; IT contract spend by place of performance
2. NOVA defined as Congressional Districts VA-01, 05, 08, 10, 11; Rest of MSA includes DC-01, MD-05, MD-06, MD-08, WV-02

“

“One of the main factors driving growth in NOVA is the significant investment in technology by the federal government. This influx of capital has been a powerful catalyst for growth.”

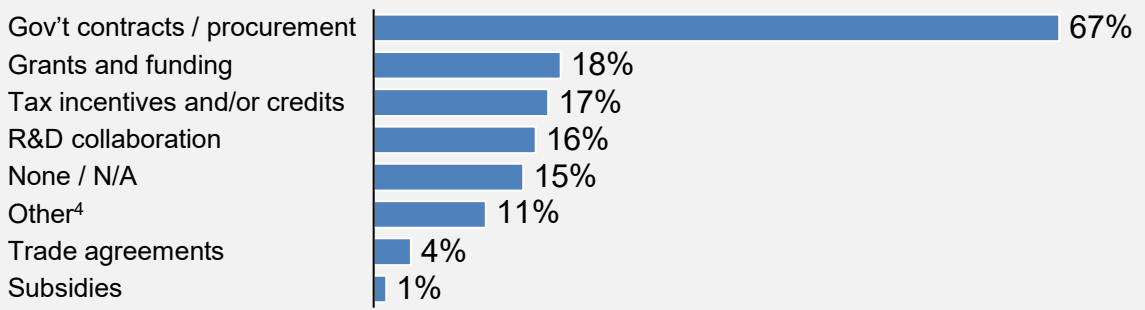
Many tech organizations in NOVA benefit from access to one of the world's largest IT customers, the US federal government

Tech leaders' perspectives on government, % respondents



Of organizations receive some sort of **federal government-related work and/or benefit signaling the importance of the federal government to the region**³

Federal government affiliation & benefits³, % respondents



“The largest customer in the world is the federal government, and its in our backyard.”

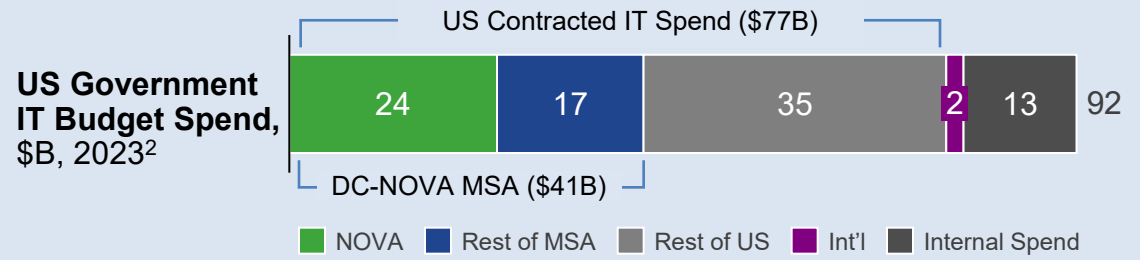
Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. ITdashboard.gov
 2. Bloomberg Government; Original data sourced from publicly-available contract data from USASpending, FPDS, and SAM.gov;
 IT contract spend by place of performance

US federal government IT spend, 2023

~\$92B federal government dollars were **budgeted towards IT in 2023**¹

~\$77B federal government **spend on external IT contracting in the US in 2023** (84% IT budget)^{1,2}



31% of US-based contracted IT spend in 2023 (\$24B) was **performed in NOVA-only**^{2,5}

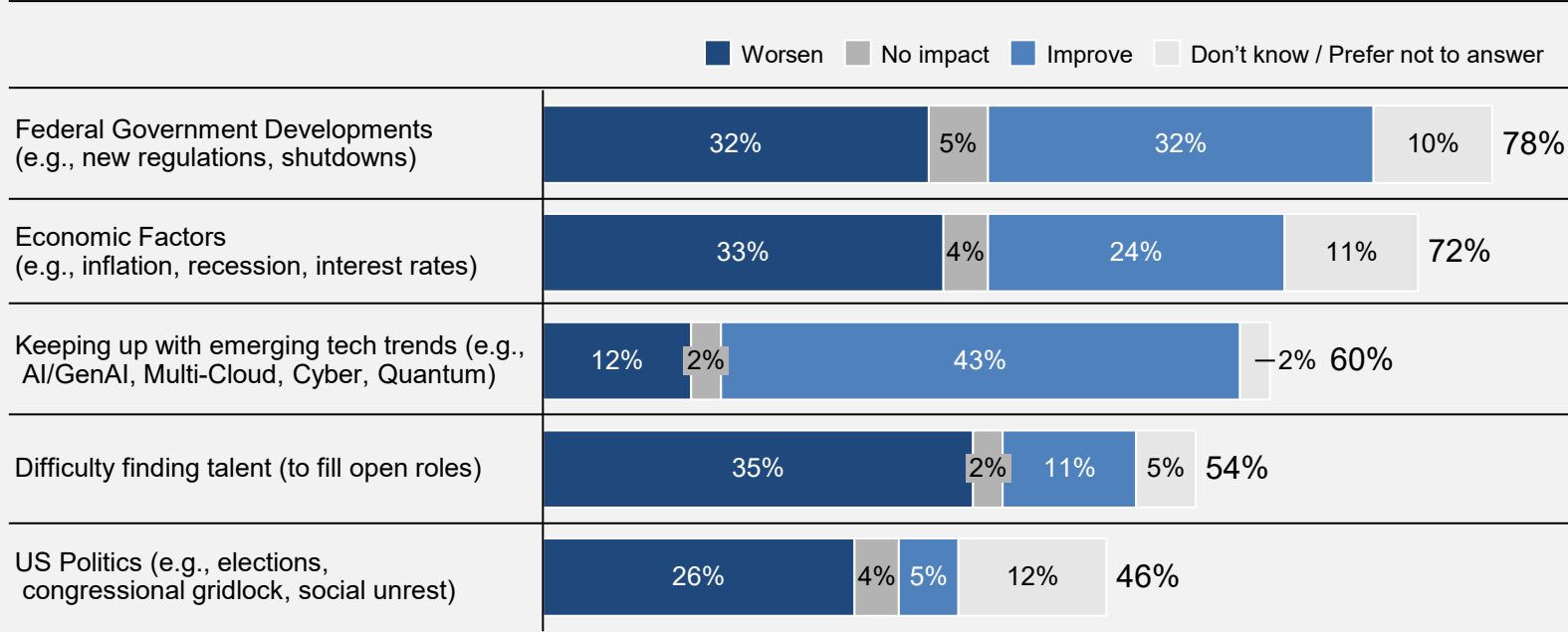
53% of US-based contracted IT spend in 2023 (\$41B) was **performed in NOVA-DC MSA**^{2,5}

3. Appendix Q7
 4. 'Other' responses were towards supporting government contractors
 5. NOVA defined as Congressional Districts VA-01, 05, 08, 10, 11; Rest of MSA includes DC-01, MD-05, MD-06, MD-08, WV-02



Trends around federal government developments and economic factors are top of mind for NOVA tech leaders

NOVA tech leaders' top 5 most impactful trends over next 2-3 years, % respondents^{1,2}



Insights

NOVA leaders view **federal government development trends as most impactful**, even when compared to difficulty finding talent

Tech leaders are evenly split about whether US federal government developments will **improve or worsen organizational performance** over the next 2-3 years

Tech leaders monitor federal developments closely because **budget pressures may force agencies to prioritize contracts, impacting availability of opportunities** for new or less established companies

“The federal government is a driver for the advancement of public sector and citizen services not just here, but across the country and around the world.”

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

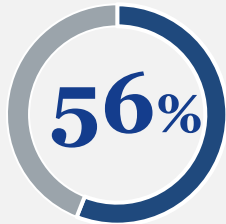
1. Appendix Q8
2. Appendix Q9



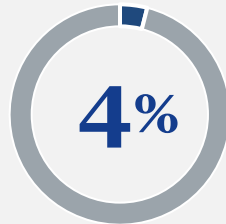
Most companies in NOVA view access to stable federal government contracts as an attractive value proposition that lock players in

NOVA tech leaders' perspectives on government & other markets, % respondents^{1,2}

Most view access to the federal market as a regional benefit...

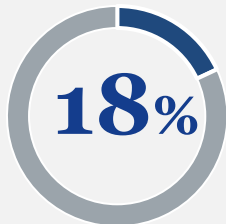


Ranked **proximity to federal government for contracting opportunities** as top 3 advantages of NOVA¹



Believe there is a lack of government contracting opportunities as a **barrier to NOVA's growth**²

...but acknowledge that this may limit access to other markets



Cite **access to other markets** as a barrier to growth for NOVA as a leading tech hub²

*“NOVA may house the 10 most **valuable future tech companies**, and they should be working on **public sector missions**. We've got to find a way to bring them in and make it easier.”*

“Once you're in the federal market, you're connected, and you build your business around it. It's hard to envision doing something else.”

Insights

Over half cite **proximity to the federal government as one of NOVA's key advantages**, second only to access to talent

Barriers to entry for federal government contracts are high, which can hinder new entrants and overall regional growth

The insular nature of federal contracting **limits “crossover” to commercial markets**

Public sector could better leverage private sector advancements, including start-ups **via incumbents to gain market access and minimize risk**

Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Appendix Q10
2. Appendix Q11

NOVA garners a “slow to adopt” reputation due to its affiliation with the federal government market

What we heard about working with the federal government¹

*“When you think about the **entire procurement cycle**, it could be a **good three to maybe four years** from ideation to when somebody actually gets to start on it.”*

*“Some say government tends to be slow to adopt emerging technologies with some agencies slower than others, but **we also currently have government customers that have a willingness to adopt.**”*

*“There is no question: **the adoption of newer tech is slower in the contracting space**, mainly because of the nature of compliance for federal contracts.”*

*“If we're so heavy-government, then people coming out of university may look at the area through that lens too. **If the job market is mostly government-related, then talent might go to other places.**”*

What this translates to...

- 1 Federal government contracting can **time intensive, bureaucratic, and potentially restricting** towards entry of new / commercial firms
- 2 The federal government market is **slower to adopt to emerging technology**, which creates limitations for opportunities growth for the tech hub
- 3 People may have **preconceived thoughts on NOVA**, which could limit tech talent attraction and retention

About the Northern Virginia Technology Council (NVTC)

NVTC is the trade association representing the Northern Virginia technology community.

As one of the nation's largest technology councils, NVTC serves companies from all sectors of the industry, from small businesses and start-ups to Fortune 100 technology companies, government contractors, as well as service providers, academic institutions, and nonprofit organizations. More than 460 members look to the organization as a resource for networking and educational opportunities, peer-to-peer communities, policy advocacy, industry promotion, fostering of strategic relationships, and branding of the region as a major global technology center.

Learn more at nvtc.org.

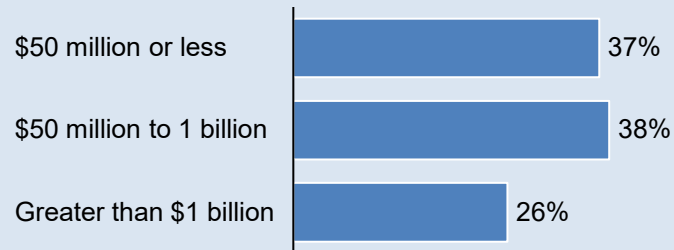


NVTC would like to thank McKinsey & Company for their contributions to the survey and interview process, as well as the data analysis contained in this report.

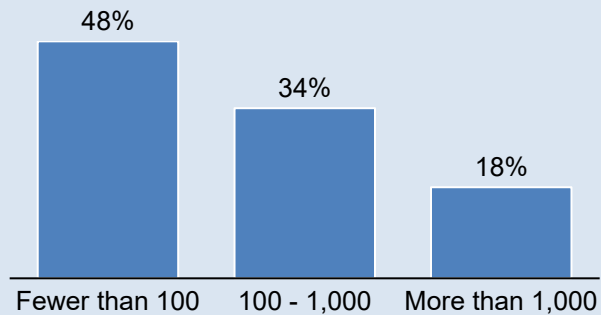
Appendix

Survey respondents' demographics

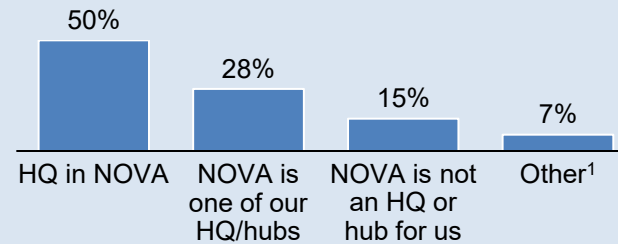
Revenue:



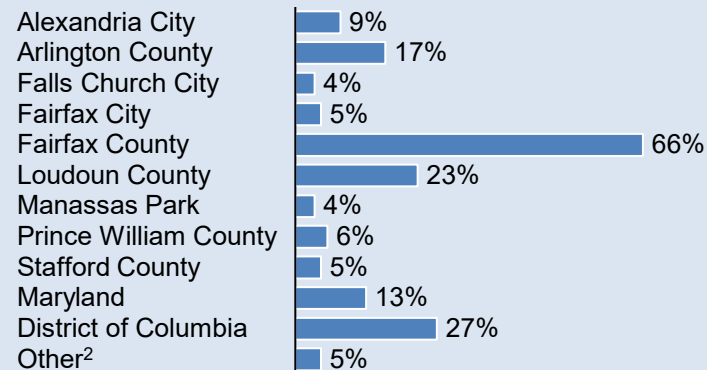
Total NOVA employees:



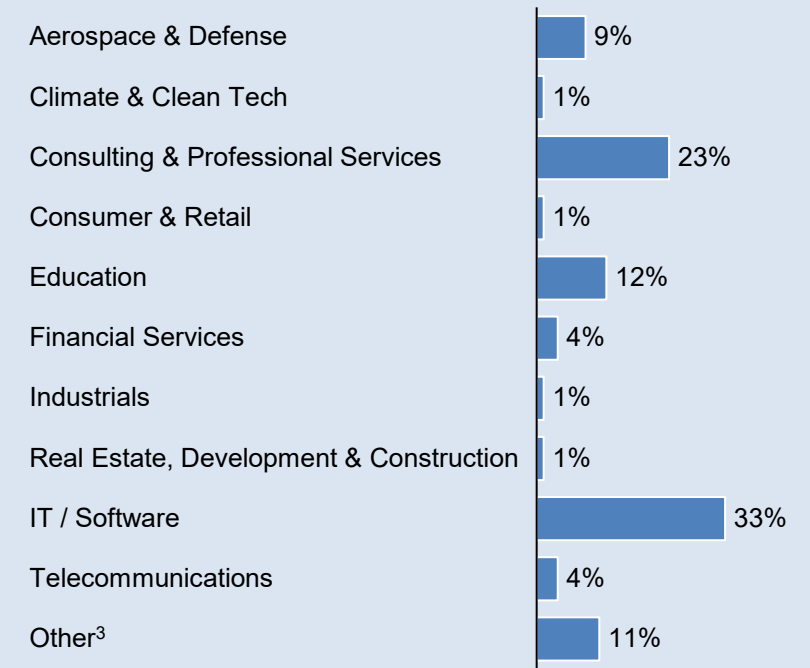
Regional NOVA affiliation:



Regional NOVA location:



Industry:



Source: 2024 NOVA Tech Ecosystem Survey (n=82); NVTC member interviews

1. Other includes: "Office in DC and employees in NOVA and DC", "Residence of high percentage of employee base", "Office in Washington DC, not our headquarters"

2. Other includes: WV, CA, TX, or other states

3. Other includes: "Public Sector"; "Insurance & Risk Consulting"; "Lighting"; "Research Institute"; "Technology manufacturer"; "Legal"; "Government, but involved with most of the above"; "Professional services"

NTVC Survey Questions (1/3)

Question Number	Survey Question
Q1	What <u>primary</u> industry does your organization operate in? Please <u>select one</u> .
Q2	What was the global revenue of your organization in the most recent fiscal year? Please <u>select one</u> .
Q3	How many total employees does your organization have? Please <u>select one</u> .
Q4	How many of your organization's employees are based in Northern Virginia (NOVA)? Please <u>select one</u> .
Q5	What is your organization's affiliation with Northern Virginia? Please <u>select one</u> .
Q6	Where are your regional operations located? Please <u>select all that apply</u> .
Q7	In which ways does your organization work with or benefit from the federal government? Please <u>select all that apply</u> .
Q8	What emerging trends and situations do you expect to most impact your organization over the next 2-3 years? Please indicate 1, 2, 3, 4 and 5 to <u>rank up to 5 items</u> – 1 having the most impact.
Q9	How do you expect these trends and situations to impact your organization's performance over the next 2-3 years? Please <u>select one in each row</u> .
Q10	Which of the following do you believe are the key advantages that position NOVA as a leading tech hub, relative to other regions? Please <u>select the top three</u> .
Q11	What do you perceive as the key barriers to NOVA's growth as a leading tech hub over the next five years? Please <u>select the top three</u> .
Q12	What economic incentives and / or benefits are most important to your organization in Virginia? Please <u>select the top three</u> .
Q13	Across the themes below, what specific areas is your organization planning to invest in over the next 2-3 years that will have the biggest impact on your operations in the NOVA region? Please <u>select the top five</u> .

NTVC Survey Questions (2/3)

Question Number	Survey Question
Q14	How, if at all, is your organization considering changing its presence in NOVA over the next 2-3 years? Please <u>select the most likely option you are considering</u> and note that 'presence' is defined in terms of number of employees based in NOVA.
Q15	How will changes in the following impact your organization's decision to expand or reduce its presence in NOVA over the next 2-3 years? Please <u>select one in each row</u> .
Q16	For <u>your organization</u> , which of the following technology areas or trends represent the largest opportunity over the next 2-3 years? Please <u>select the top three</u> .
Q17	Specifically for your organization's <u>operations in NOVA</u> , which of the following technology areas or trends are you investing in over the next 2-3 years? Please <u>select the top three</u> .
Q18	In which of the following <u>business functions</u> has <u>your organization adopted generative AI (GenAI)</u> ? GenAI is defined as Machine-learning algorithms such as ChatGPT that can create new content, including audio, code, text, images, etc. Please <u>select all that apply</u> .
Q19	Of the business functions you selected, where do you believe <u>GenAI will have the most impact</u> for your organization over the next 2-3 years? Please <u>rank the top 3</u> with 1 – Most impactful.
Q20	Within the business function you identified as most impactful, what specific GenAI related business activities will drive the most impact? Please <u>select all that apply</u> .
Q21	What are your organization's current policies on 'remote' / 'hybrid' work for employees affiliated with your NOVA locations? Please <u>select the best option that applies</u> .
Q22	How do you expect these policies to change in the future? Please <u>select the best option that applies</u> .

NTVC Survey Questions (3/3)

Question Number	Survey Question
Q23	In which of the following skill families does your organization see gaps between the skills that your organization needs for its NOVA operations and your current talent pipeline? Please <u>select all that apply</u> .
Q24	Across the themes below, why do you believe the skills gap(s) exists? Please <u>select all that apply</u> .
Q25	Which of the following actions has your organization found to be the most effective in helping to reduce the skills gap? Please <u>select the top three</u> .
Q25A	What initiatives is your organization utilizing for upskilling your employees?
Q25B	Where does your organization primarily recruit recent graduates?
Q25C	Where does your organization primarily recruit and/or train candidates?
Q26	Leading tech hubs are characterized by having elements of the following criteria. Please rank these in order of importance to your organization, with 1 - most important. Click and drag answer choices up or down to reorder list.
Q27	Optional free response: What role could NVTC play to help strengthen and/or improve the NOVA tech ecosystem and accelerate innovation in the region?



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