

2026

AI Readiness Survey

Presented By

PEI BioAlliance

Date Prepared

September 2026



Introduction

AI is moving quickly across the bioscience industry, changing how companies discover, develop, manufacture and commercialize products. Harnessing AI presents a significant opportunity: the potential to accelerate R&D, strengthen manufacturing and quality processes, unlock greater value in existing data sets, increase the productivity of highly skilled teams - and more.

Access to the technology alone does not create competitive advantage. The ability to capture value from AI depends on organizational readiness - the right data foundations, skills and expertise, governance, leadership, and an understanding of where AI can have the greatest impact.

The PEI BioAlliance is pleased to share with you the **AI Readiness Survey** report. As the convener of the bioscience cluster, we wanted to first take a pulse on AI adoption across the cluster: how companies are using it today, where they are encountering roadblocks, and what they may need to support continued adoption. The survey also gave companies an opportunity to tell us directly where the BioAlliance and our partners can provide meaningful support.

The survey results tell us that AI use is already widespread among respondents, and that the bioscience cluster is enthusiastic about AI experimentation. It also reports that more expertise is needed to realize AI's full potential. There are also clear opportunities in governance, data readiness, workforce capability, and implementation support. This is consistent with the broader Canadian life sciences industry, where adoption is also moving quickly but data infrastructure, governance, and skills are struggling to keep pace.

We hope that you find this report as useful as we have in providing evidence for future discussions about the skills, infrastructure, expertise, and investment support that may be needed as AI adoption continues across PEI's bioscience cluster. Thank you to the survey respondents who made these insights possible.

AI adoption is moving faster than organizational readiness

Companies are already finding value. The next challenge is to build the governance, data, skills and implementation capacity that supports responsible scale.



Five strategic findings

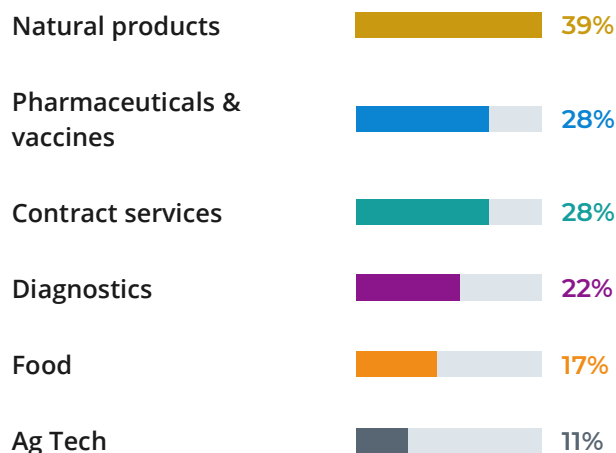
- 1. Adoption** is widespread, but maturity is still developing. Most use remains experimental, function-specific or selectively integrated.
- 2. Leadership** conditions are favourable. The gap is activation, resourcing and disciplined implementation — not persuasion.
- 3. Trust** and governance are the immediate implementation issue. Privacy, reliability, cybersecurity and IP protection lead the concerns.
- 4. Data** foundations remain uneven. Fragmentation, limited capacity and lack of standardization constrain more advanced use.
- 5. The sector** is asking for practical help. Funding, expertise, training, use cases and governance guidance are the clearest support needs.

The sector is ready for selective, governed and measurable AI adoption — not necessarily broad autonomous deployment.

A diverse bioscience sample indicates AI readiness is still developing

The survey reflects organizations across natural products, pharmaceuticals, diagnostics, contract services and manufacturing-oriented activity.

SECTOR PROFILE



READINESS AT A GLANCE

Adoption **Developing**
94% use AI; 0% say core to operations

Leadership **Supportive**
94% supportive or fully committed

Governance **Early stage**
56% informal/emerging; 0% comprehensive

Workforce **Mixed**
Integration, analytics and process skills lead needs

Data **Partial**
0% fully AI-ready; integration and standardization gaps

"We work heavily with AI, but we are limited in agentic capabilities. Running AI agents is in our future but our expertise is limiting us in doing so at the moment."

The survey provides a clear picture of AI readiness and strengths, as well as identifies priorities to move the sector forward.

AI use is widespread — but still selective rather than embedded

The sector has moved beyond awareness. Most organizations are using AI somewhere, but organizational integration remains limited.

AI PRESENCE & UNDERSTANDING

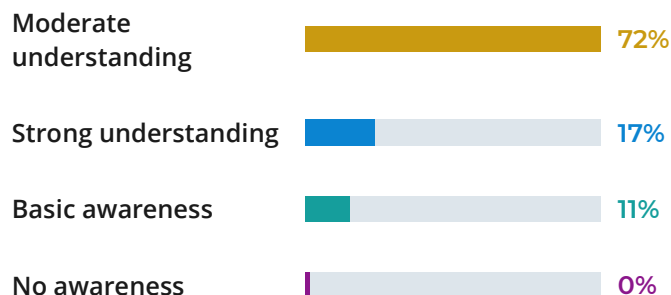
94%

currently using AI

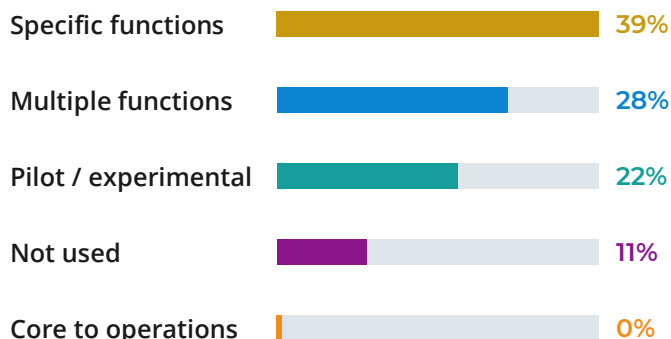
72%

moderate understanding

UNDERSTANDING OF AI



DEPTH OF USE IN OPERATIONS



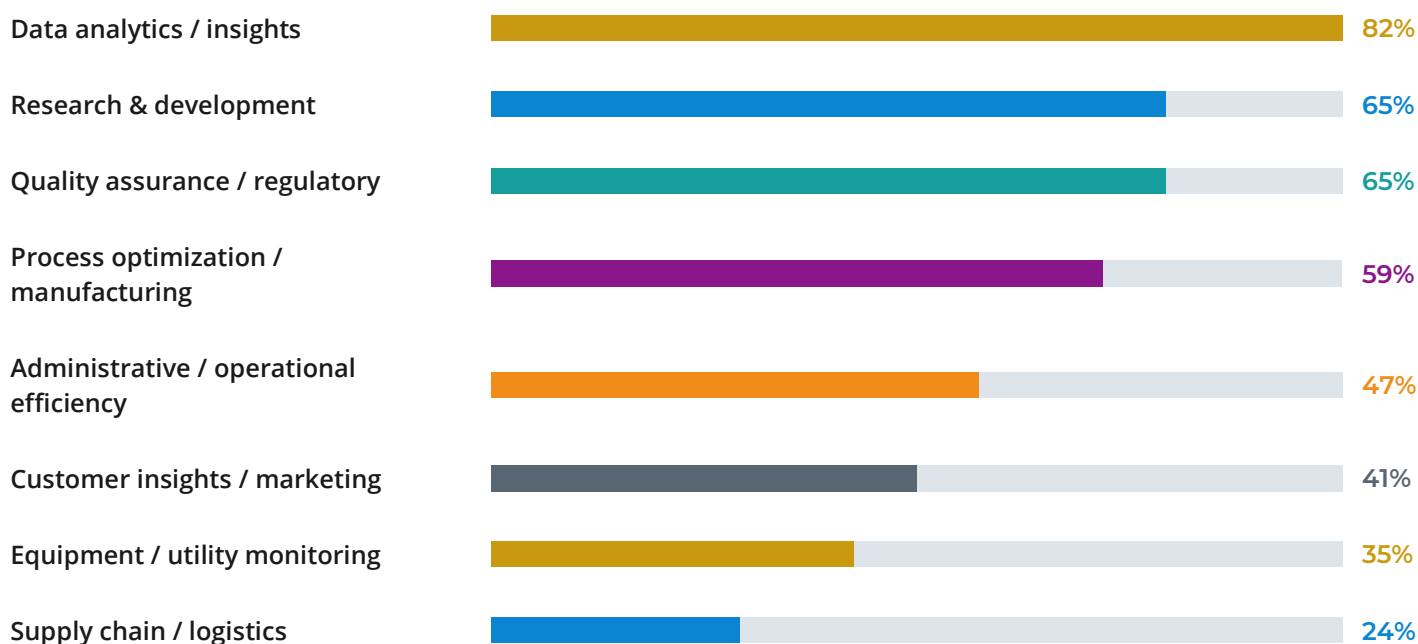
"We have deployed CoPilot licensing for 40 individuals for their use. The use case is for efficiency, content generation and data analysis. We are deploying Dynamics365 soon and there are AI use cases that we are evaluating for automations to AP and AR."

Widespread use should not be mistaken for enterprise maturity. Most companies are still learning where AI belongs and how far to integrate it.

Where AI is already being used or considered

The strongest opportunity areas combine information-heavy work with scientific, quality and operational workflows.

CURRENT OR CONTEMPLATED APPLICATION AREAS



EXAMPLES COMPANIES REPORTED

Scientific / R&D: Bioinformatics, DNA design, vaccine development, literature and market analysis

Quality / regulatory: Documentation support, review, identifying human errors and strengthening quality oversight

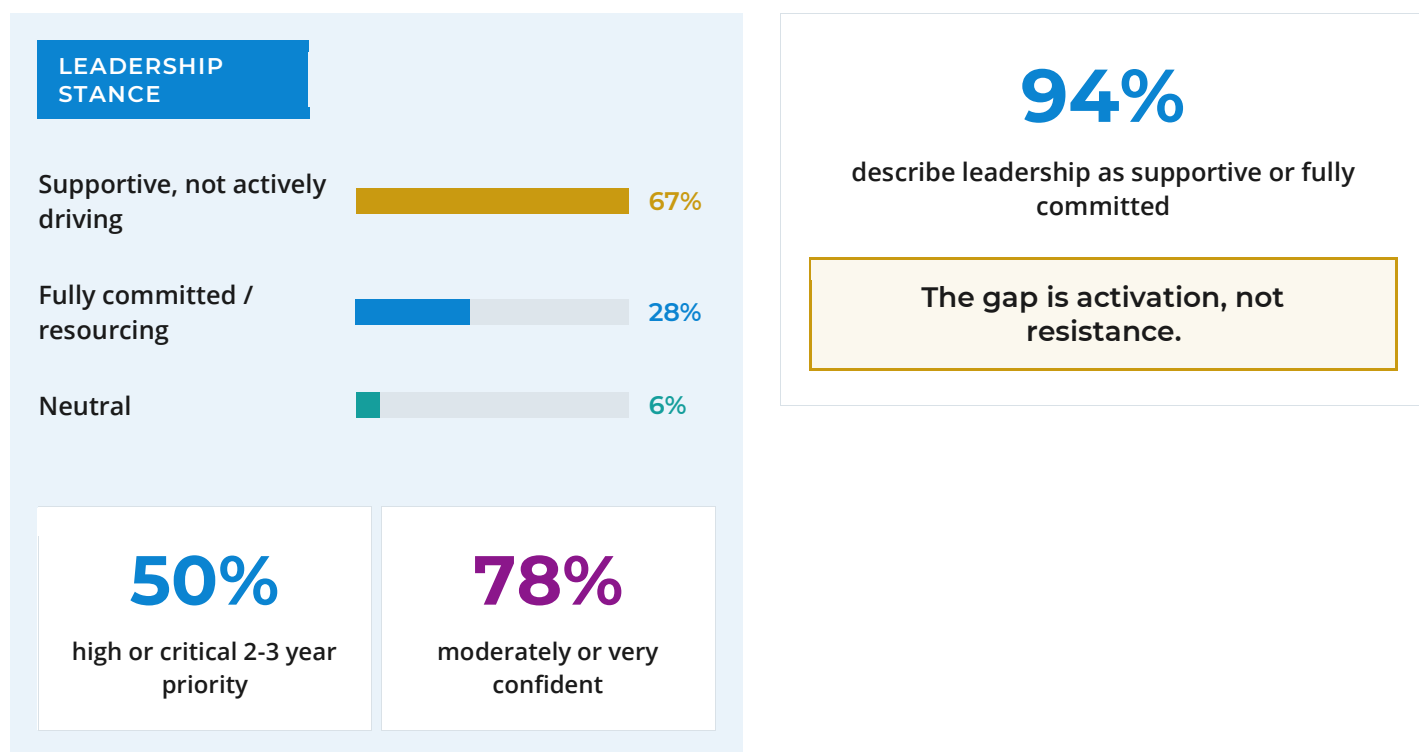
Operations: Fermentation optimization, process improvement, monitoring and finance automation

Knowledge work: Data analysis, content generation, reporting and administrative assistance

"AI is increasingly being used in regulatory compliance to improve efficiency in regulatory reviews, identify human errors in documentation, and strengthen overall quality oversight."

Leadership support is strong; the gap is activation, not resistance

Support has not always translated into active sponsorship, resourcing and implementation plans.

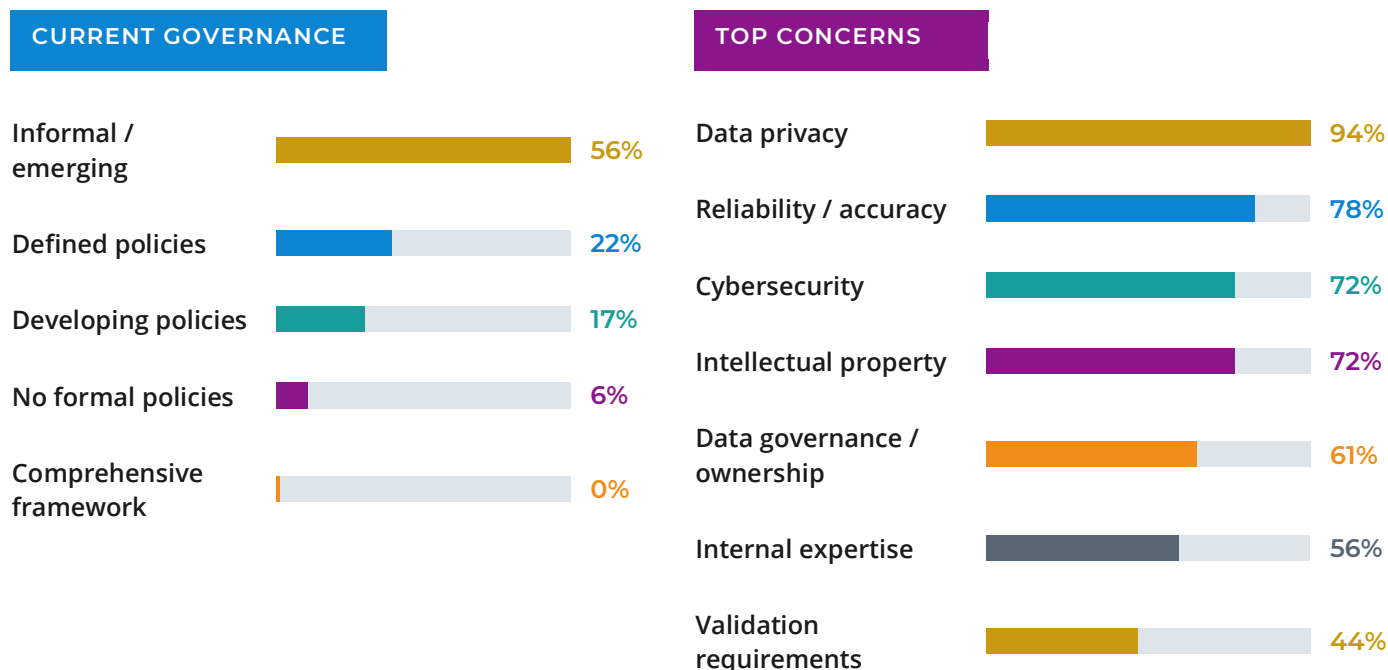


"We have a full-time statistician dedicated to AI build-out and adoption."

The sector does not primarily need persuasion that AI matters. It needs mechanisms that turn support into priorities, accountability and execution.

Responsible implementation is now the critical constraint

Formal governance remains limited even though AI is already being used in regulated and IP-sensitive environments.



“Only materials can be exposed to AI in an account that has explicit IP protection through an industrial membership/account.”

For regulated bioscience, governance should develop alongside use-case expansion — not after it.

The barrier is not lack of interest — it is implementation capacity

Cost, expertise, use-case clarity, data, integration and validation shape the adoption challenge.

MAIN BARRIERS TO ADOPTION



"Access to language models is unreliable / constantly shifting. Additionally, data sovereignty is questionable with most companies providing API tokens."

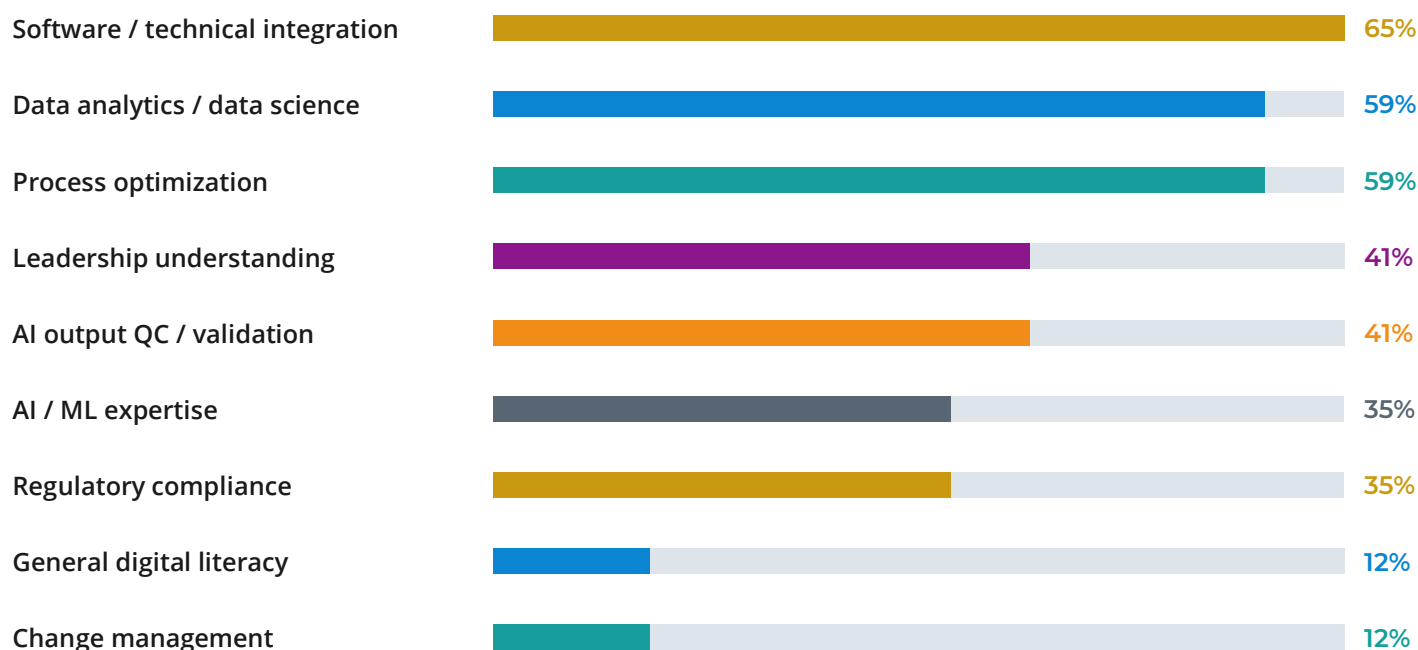
"Another barrier to use is ensuring IP is safeguarded."

The readiness challenge is operational: choosing good use cases, protecting data, integrating systems and validating results.

The skills gap is more about integration and application than basic digital literacy

Companies need people who can connect AI to workflows, data, processes and decision-making in regulated environments.

REPORTED MOST-NEEDED AI-RELATED SKILLS



WHAT COMPANIES SAID

Integration: “Integration with existing software and across multiple software platforms.”

Agents + compliance: “Help in how to work with AI agents ... and create programs that are compliant with regulatory bodies.”

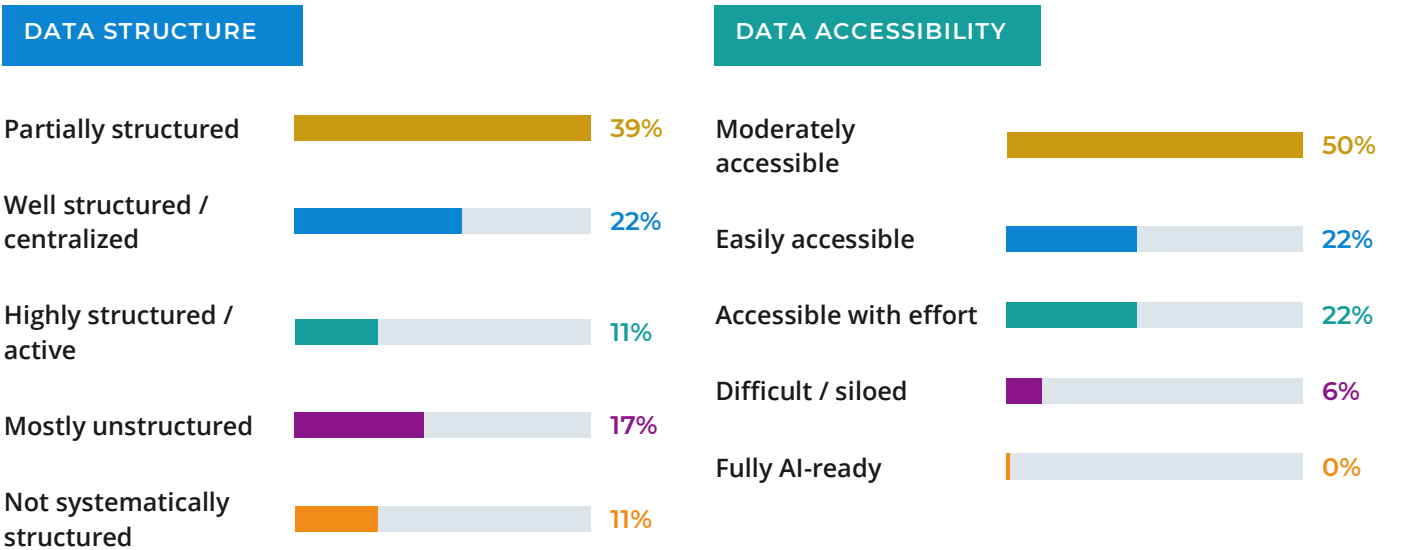
Responsible use: “An understanding of how to safely, effectively, and compliantly use AI within a regulated environment.”

Security + training: “Risk mitigation, internal training, systems that are secure / more vetted.”

Workforce development should be tiered: basic literacy, role-based use, leadership capability and specialist integration/validation skills.

Structure and accessibility are uneven

Companies hold substantial operational, scientific, manufacturing, quality and market data. The issue is making that data connected, consistent, governed and usable.



“We need to improve our data governance and clean up our data to allow for an AI tool to provide better insights.”

“We need to have one program that runs all of our data and interpretation directly.”

The issue is not a lack of data. It is the work required to standardize, connect, govern and make existing data accessible enough for more advanced AI use.

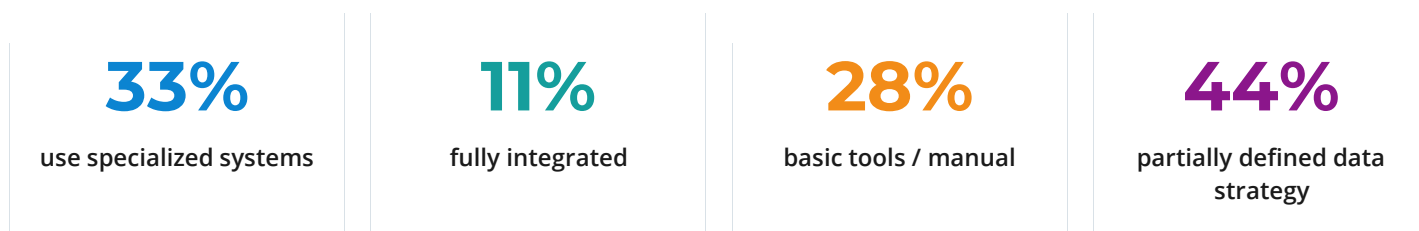
Fragmentation, capacity and standardization are the dominant data constraints

Digital infrastructure is mixed, and formal data strategy is still developing.

MOST COMMON DATA CHALLENGES



SYSTEMS & STRATEGY



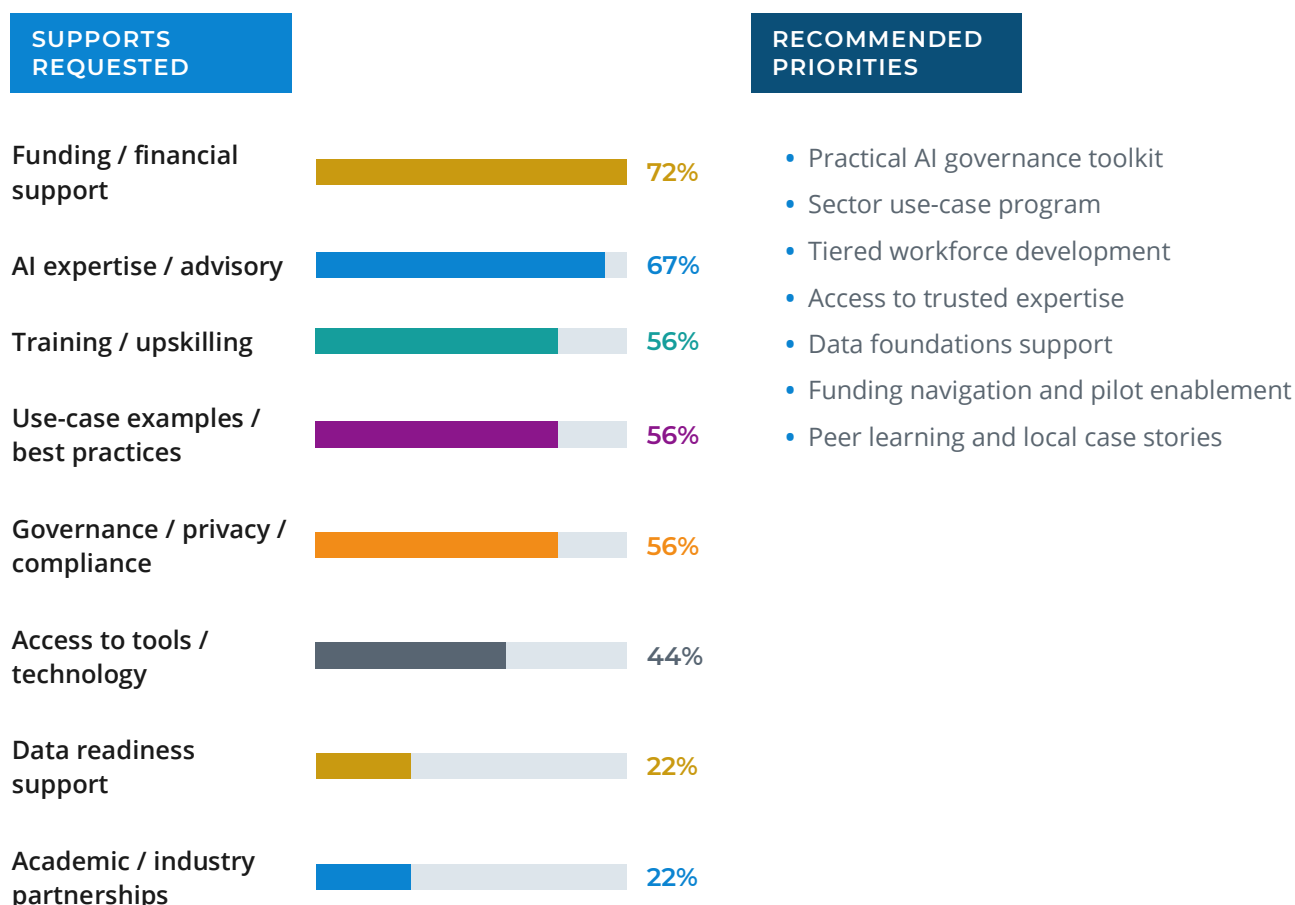
Only 11% report a well-defined and implemented data strategy.

"Contract research work is well organized; other information organization is variable."

Build stronger data foundations before expecting advanced AI to scale reliably.

Companies are asking for practical support — not more AI hype

Requested supports align closely with the barriers: expertise, training, use cases, governance and funding.



“Running AI agents is completely out of our wheelhouse and would like to know more on how to perform these tasks.”

Sector support should help companies move from interest to bounded, governed implementation with measurable value.

AI in Action: a practical pathway from readiness to responsible scale

The PEI bioscience sector does not need every company to become an AI company. Companies need to become better at choosing, governing and implementing the AI that genuinely creates value for them.

- 1. Explore:** Build literacy, identify opportunities and understand limitations.
- 2. Experiment:** Test bounded, lower-risk use cases with clear success measures.
- 3. Govern:** Set policies, permissions, validation, privacy and accountability.
- 4. Integrate:** Connect useful AI to data, workflows, systems and roles.
- 5. Scale:** Expand only where value, safety and organizational capacity are demonstrated.

PROPOSED INITIATIVES & ACTIVITIES

- 1. MicroLearning Series**
- 2. AI Playbook**
- 3. Use Case Library**
- 4. Expert Connections**
- 5. Peer Learning**
- 6. Partnership Development**

“Position PEI as a connected, responsible AI-enabled bioscience cluster by making governance, data readiness, workforce capability and practical implementation the centre of the sector response.”

How to read the findings

The survey provides a useful directional view of the PEI bioscience sector. Results should be interpreted as a readiness signal and planning input rather than a statistically representative census.

SURVEY BASIS

- Percentages are rounded in this report.
- Select-all questions may total more than 100%.
- Open-text comments have not been treated as quantitative measures.
- Company-level responses are presented in aggregate.

INTERPRETATION

- Strong signals are repeated across adoption, governance, data and workforce questions.
- The clearest pattern is a maturity gap: use is widespread, but operating foundations lag.
- Recommended priorities are derived from the observed gaps and supports requested by respondents.
- The near-term strategy is selective, governed and measurable adoption.

“The challenge is readiness, capacity and implementation, not interest.”

A question-by-question summary of the survey results follows.

Survey profile and AI understanding

Percentages rounded. Questions allowing multiple selections may total more than 100%.

Q1	Company size	1-25 employees 61%; 26-50 11%; 51-100 6%; 100+ 22%.
Q2	Industry segment	Natural products 39%; pharmaceuticals & vaccines 28%; contract services 28%; diagnostics 22%; food 17%; Ag Tech 11%; additional context 11%.
Q3	Business focus	Manufacturing/production 56%; scale-up/process development 44%; product development 39%; CRO 28%; discovery/early R&D 22%; CMO/CDMO 17%; other 6%.
Q4	Business model	Product-based 39%; hybrid 33%; service-based 28%. Comments included vaccine/CRO services, vaccine assets and specialty seed-oil ingredient manufacture.
Q5	Activities	R&D 83%; product development 83%; scale-up/process development 83%; sales/commercialization 78%; QA/regulatory 67%; manufacturing 61%; data/analytics 39%.
Q6	Primary customers	B2B 78%; both B2B/B2C 22%; B2C only 0%.
Q7	AI understanding	Moderate 72%; strong 17%; basic 11%; no awareness 0%. Comment: agentic capability is a future interest, but expertise is currently limiting.
Q8	Currently using AI	Yes 94%; no 6%; exploring/planning 0%. Comments cite vaccine tools, literature search, bioinformatics/DNA design and use of ChatGPT, Copilot, Claude and MotionAI.

Governance, use cases, integration and barriers

Percentages rounded. Questions allowing multiple selections may total more than 100%.

Q9	AI governance	Informal/emerging 56%; defined policies 22%; working on policies 17%; no formal policies 6%; comprehensive framework 0%. Comments mention enterprise/industrial accounts, IP protection, staff guidelines and policy development.
Q10	AI used / considered	Analytics 82%; R&D 65%; QA/regulatory 65%; process optimization 59%; admin/operational 47%; customer/marketing 41%; equipment monitoring 35%; supply chain 24%.
Q11	Specific use cases	10 open-text responses: vaccine development, bioinformatics, DNA design, fermentation optimization, code creation/testing, data analytics, documentation, QA/regulatory, finance automation and client-facing applications.
Q12	Operational integration	Specific functions 39%; multiple functions 28%; pilot/experimental 22%; not used 11%; core to operations 0%. Comments cite systems monitoring, analytics and efforts to consolidate software across the business.
Q13	Main barriers	Cost 56%; lack of expertise 50%; unclear use cases/ROI 38%; data quality/availability 38%; integration 38%; workforce readiness 38%; validation/audit 31%; not a priority 6%. Comments add data sovereignty, model-access reliability and IP safeguards.
Q14	Importance over 2-3 years	High priority 44%; moderate 44%; critical 6%; low 6%; not a priority 0%.

"The marketplace analysis on vaccines performed by AI is amazing ... We also use it to scrutinize our protocols to better optimize our pipelines."

Leadership, skills, support, concerns and confidence

Percentages rounded. Questions allowing multiple selections may total more than 100%.

Q15 Leadership support	Supportive/not yet driving 67%; fully committed 28%; neutral 6%; skeptical 0%; not engaged 0%. Comment: one respondent has a dedicated full-time statistician for AI build-out and adoption.
Q16 Skills needed	Software integration 65%; data analytics 59%; process optimization 59%; leadership 41%; validation 41%; AI/ML 35%; regulatory 35%; digital literacy 12%; change management 12%.
Q17 Talent / skill details	7 open-text responses emphasize software integration, AI agents, regulatory compliance, risk mitigation, secure systems, internal training and safe/effective use in regulated environments.
Q18 Supports requested	Funding 72%; expertise/advisory 67%; training 56%; use cases/best practices 56%; governance/privacy/compliance 56%; tools 44%; partnerships 22%; data readiness 22%.
Q19 Concerns	Privacy 94%; reliability 78%; cybersecurity 72%; IP 72%; data governance 61%; expertise 56%; validation 44%; integration 44%; ethics 44%; workforce/change 33%; no major concerns 0%.
Q20 Confidence in implementation	Moderately confident 50%; very confident 28%; somewhat confident 22%; not confident 0%.

"Integration with existing software and across multiple software platforms."

"Help in how to work with AI agents ... and create programs that are compliant with regulatory bodies."

"Risk mitigation, internal training, systems that are secure / more vetted."

Data readiness and final comments

Percentages rounded. Questions allowing multiple selections may total more than 100%.

Q21	Data structure	Partially structured 39%; well structured 22%; mostly unstructured 17%; highly structured/actively used 11%; not systematically collected/structured 11%.
Q22	Data accessibility	Moderately accessible 50%; easily accessible 22%; accessible with effort 22%; difficult 6%; fully AI-ready 0%.
Q23	Data types	Operational/business 78%; manufacturing/process 72%; research 67%; customer/market 61%; QA/regulatory 50%; environmental monitoring 33%; supply chain/logistics 33%; sensor 22%.
Q24	Data challenges	Disconnected systems 61%; limited staff/time 61%; not standardized 56%; quality issues 33%; limited integration 33%; lack of expertise 28%; privacy/regulatory 22%; tools, real-time access and governance 17% each.
Q25	Data systems	Specialized systems 33%; basic tools/manual 28%; cloud platforms 17%; fully integrated 11%; partially integrated 6%; no formal systems 6%.
Q26	Data strategy	Partially defined 44%; informal/ad hoc 33%; no formal strategy 11%; well-defined/implemented 11%.
Q27	Anything else to share	Responses: hands-on workshop support for AI programs/agents; continued guidance/training as tools evolve; appreciation for the initiative.

"We need to improve our data governance and clean up our data to allow for an AI tool to provide better insights."

"We need to have one program that runs all of our data and interpretation directly."