

Futures2 Strategy Report

Internet2, InCommon, SecondMuse

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Table of Contents

- I. [Executive Summary](#)
- II. [Introduction: InCommon's Strategic Direction](#)
 - A. [Futures2 Planning Process](#)
- III. [Landscape Trends & Opportunities](#)
- IV. [5-Year Strategic Objectives](#)
 - A. Value Proposition
 - B. Technical Recommendations
 - C. Addressing emerging security protocols
 - D. Product implementation & integration
 - E. Wayfinding & support
- V. [Tactics & Implementation: An Innovation Framework for InCommon](#)
 - A. Define the challenge and target outcomes
 - B. Engage experts in an innovation cycle
 - C. Evaluate and publish shared approaches
 - D. Implement feedback
- VI. [Conclusion](#)

Executive Summary

Overview

Over the last 20+ years, Internet2's InCommon has become a trusted partner for the strategic creation, evolution, and maintenance of Identity & Access Management infrastructure, services, workforce development, and software for Higher Education & Research. To build on this role, the InCommon Community, Internet2's Trust & Identity Leadership, and SecondMuse have conducted a futuring exercise to develop a shared statement of direction and strategic areas of activity that will drive where InCommon's IAM capabilities need to be in 2028.

SecondMuse conducted a 3-month consultation and research process to surface feedback from InCommon's membership community. This research process asked the community about the major trends impacting Higher Education and Research; industry trends and other external forces that institutions are considering; what higher education and research IT need to support or protect against; what products and services are most valuable; what capabilities InCommon needs to develop and what is no longer needed; and what InCommon should do to provide strategic value to the communities it serves.

Key Focus

InCommon will provide the most value to the R&E community as the collective authority on how to facilitate and promote digital collaboration by recommending the appropriate blends of IAM-related products, middleware, and services, and providing governance, support, and resources to R&E institutions and their partners. To achieve this, InCommon is not required to compete with commercial providers, but rather, leads the community in the process of devising creative, sustainable solutions for IAM. It will be critically important for InCommon to evolve its role to ensure that the higher education and research community can continue to seamlessly collaborate across institutions without sacrificing security.

Challenges for InCommon to Address

Over the next 5 years, InCommon should re-center its community and advisory bodies on crafting shared solutions in order to respond to the common IAM trends, challenges, and areas of opportunity expressed by the community in this research. Those are:

- A. Integrating next-generation security protocols and solutions into InCommon's central governance structure
- B. New digital learning modalities impacting Higher Ed & Research require more fluid credentialing within IAM systems
- C. Skills gaps and knowledge loss that InCommon and Internet2 should work to fill

- D. Proliferation of commercial offerings is increasing pressure for member institutions to adopt them and move away from InCommon
- E. Demand for improved unification, automation, and interoperability of IAM infrastructure that InCommon's resources should support

Strategic Objectives

Based on the research findings, five Strategic Objectives have been identified that InCommon should drive toward over the next 5 years:

1. InCommon releases an evolved value proposition to the community, showing its current and prospective members that it is prepared to take on an active role as the standard-bearer for IAM systems within R&E.
2. Internet2 provides the InCommon membership community with technical recommendations for how to select, implement, and maintain IAM infrastructure in support of digital collaboration. This is done by recentering existing working groups around the known challenge areas, and engaging these working groups across InCommon's [key audience groups](#).
3. InCommon assembles an Innovation Group to convene the community around emerging security protocols and proactively advise members on critical updates to IAM systems.
4. InCommon promotes product implementation and integration to increase engagement with Federation and the Trusted Access Platform. By conducting Product Improvement Sprints, Internet2 provides actionable guidelines and technical solutions for connecting Internet2 products to commercially available solutions that are used by community members.
5. Internet2 communicates about its product and service offerings in ways that allow for all InCommon audience groups as well as prospective members to find their own tailored pathway into Federation that is unique to their institution's needs and constraints.

Achieving these objectives will ultimately position InCommon as the go-to authority on digital collaboration and security for Higher Ed & Research institutions. By 2028, InCommon is sought after as the source of truth for how any R&E institution can create a unique, cost-effective, scalable, trusted IAM system using a strategic blend of Internet2 products and commercially available offerings.

Recommended Approach

The InCommon membership is a community of experts and professionals across Higher Education & Research – part of a global collective that values and promotes collaboration and learning. The overall approach InCommon takes should be an ecosystem-based one, whereby InCommon leads as the authority of the collective. Through a four-step, repeatable process, InCommon will effectively engage the membership collective to achieve target outcomes (as outlined in the Strategic Objectives), publish the results, and share them with the collective. The

ecosystem-based approach we recommend is [a four-step process](#): (I) Define the challenge, (II) Engage experts in an innovation cycle, (III) Evaluate and publish shared approaches, (IV) Implement feedback.

Introduction: InCommon's Strategic Direction

Since its inception, Internet2's InCommon has been an important resource to the Higher Ed & Research community as a trusted partner for Identity and Access Management (IAM). This infrastructure is crucial for multi-institutional collaboration, allowing researchers and academics to come together in service of scientific discovery and advancement. Over the last 20+ years, the IAM landscape has changed dramatically with new commercial entrants in the space, emerging security concerns, and growing skills gaps and knowledge loss amongst the IAM community. This has left the community grappling with major questions about the infrastructure that will be needed to support their organizations in the coming decade. InCommon is in a unique position to help the community navigate these questions and ensure continued, secure, and accessible collaboration for years to come.

Over the next 5 years, InCommon must step into the role of collective authority for IAM best practices in Higher Ed & Research. To be a collective authority means that InCommon will be responsible for creating and disseminating guidelines, best practices, and shared solutions from the combined experience of the federation. The community needs a trusted body not only to convene the experts, but also to synthesize their expertise and translate it into tangible outcomes. This evolution in InCommon's role will amplify the value of the collective, convening multiple perspectives to investigate and solve shared challenges, as a competitive advantage against commercial entrants. The value of the collective is what's lost when members move to commercial solutions. The Higher Ed & Research community itself is best positioned to solve their common challenges, and InCommon must funnel the community's expertise and energy toward strategic outcomes that will optimize for accessibility, collaboration, and security for many years to come.

Futures2 Planning & Execution Process

The Futures2 Planning process was initiated by the Internet2 Trust & Identity Division and the InCommon Steering Committee to develop a shared statement of direction and strategic areas of activity that will drive where the Higher Ed & Research IAM capabilities collectively need to be in 2028. SecondMuse was engaged to facilitate an in-depth consultation process to synthesize the needs, priorities, and collective knowledge of members and prospective members across InCommon.

The process included:

- Four facilitated focus groups that engaged 90 participants across InCommon's advisory committees, Internet2 staff, InCommon Catalysts, and component architects;

- A needs assessment survey distributed broadly to the community, collecting 126 responses;
- Desk research with a focus on competitive analysis;
- Eight one-on-one in-depth stakeholder interviews and an Areas of Opportunity Roundtable with seven stakeholder participants, engaging a total of 15 participants across higher education, research, and industry.

The findings from this process are the foundation for this strategy report, and uncovered clear themes in the needs and priorities of InCommon members and prospective members. They are synthesized below into five critical strategic objectives for InCommon to achieve over the next five years.

Landscape, Trends, & Opportunities

These trends and opportunities (A-E) were identified from the consultative process and desk research (Phase 2) of this project. They comprise the current landscape of how InCommon members manage their IAM systems as well as direction for the future.

A) Next-generation security protocols and solutions

InCommon community members are aware of trending security protocols, risks, and emerging solutions. These include but are not limited to: OIDC, OAuth, and Zero Trust as well as cybersecurity frameworks such as NIST and CMMC. The community is looking to InCommon to lead in integrating these protocols, technologies, and innovations into InCommon's central governance structure.

B) New learning modalities requiring more fluid credentialing

Higher Ed & Research institutions recognize that the needs of their audiences and stakeholders are evolving. We see examples of digitally-driven change all around us: institutions expanding their offerings to broader audiences seeking to take advantage of continuing education opportunities that are accessible outside of the classroom. This diversification of higher education's audiences and their needs will require more fluid credentialing from IAM systems. Technologies such as passkeys, Bring Your Own Identity, and eWallets are at large.

C) Skills gaps and knowledge loss

The InCommon community noted a growing skills gap as a result of events, like early retirement, that lead to loss of legacy knowledge. Respondents from the consultations expressed that IAM system management and architecture requires a particular skill set, and that finding professionals who are willing to and capable of working in Higher Ed & Research IT departments is challenging.

D) Proliferation of commercial offerings and increasing pressure to adopt them

IT departments of InCommon member institutions face real challenges when integrating and using InCommon products: murky implementation pathways and costs, keeping current with software updates, elusive technical support, and little authority regarding next-generation security protocols. These challenges make it difficult for IT departments to justify sticking with Federation and the Trusted Access Platform. And, with industry providers not incentivized to support InCommon products, this creates a ripe opportunity for members to adopt commercial solutions and move away from Internet2.

E) Demand for improved unification, automation, interoperability of IAM infrastructure

IAM departments across the institutions consulted are focused on unifying, automating, and interoperating their IAM systems. Target improvements include creating integrated, seamless connections across platforms that achieve a sustainable multi-platform approach; strategically engaging third parties; and achieving or maintaining automation within IAM systems to reduce manual processes needed to support Federation.

Take the needs Higher Ed & Research institutions have with regard to provisioning and deprovisioning, and managing user lifecycles and permissions as an example. Today, practitioners and architects struggle to quickly assemble effective solutions and maintain them on their own. These constraints create technical debt and stretch IT departments beyond their means, leaving little-to-no resourcing to keep up with rapidly changing compliance requirements. The increasing variety of multifactor authentication standards between many existing third party offerings make it difficult for InCommon member institutions to understand these standards and comply with them. IT departments are looking to InCommon to recognize these challenges and offer guidance and resources that allow IAM practitioners and experts to implement flexible, dynamic solutions for their own IAM ecosystems.

5-Year Strategic Objectives

Key Audience Groups

The table below defines the key audience groups consulted in this research. The 5-Year Objectives address these audience groups collectively. The strategies presented for each objective will require that InCommon and Internet2 carefully consider and optimize for each audience group's needs.

Group	Audience	
Users in Research & Education	Large research universities Medium-sized universities/colleges Small colleges Community Colleges	Cultural orgs (museums, libraries) K-12 Research Federal Agencies
Partners	Industry Service Providers InCommon Catalysts Regional Education Networks	International Partners Advisory Groups
Internet2 Staff	Internet2 staff members	

Table 1: Key Audience Groups

The table below shows the role types and areas of expertise within the audience groups consulted:

Area	Role	
Administrator or General Management	Regional Network Administrator Community manager	Training & Education Staff in a Finance or HR role
Business Contributor	Business analyst Business owner	Business development expert
C-Suite	CIO CISO	CTO CEO
IAM Contributor	IAM Architect IAM Practitioner	
IT Contributor	Other IT Contributor Network Operation & Telecom	IT manager
Leadership	IAM Director/Leadership Other IT Senior Leadership	
Library	Library professional	IAM for library services
Product & Program Operations	Product Manager Project Management	Program Manager Compliance Lead
Research computing	Research computing Research infrastructure providers	Research and data professionals Data Community Facilitator
Security & Privacy	Security Analyst	Privacy & Security
Software	Developer	

Table 2: Audience Role Types and Areas of Expertise

Specific Objectives

1) InCommon releases an evolved value proposition to the community.

→ **Objective:** This value proposition communicates that InCommon is the go-to solution for R&E institutions looking to build trusted, cost-effective, up-to-date IAM systems.

→ **Strategy:** By developing and broadly communicating a strong value proposition in the process outlined [here](#), InCommon will demonstrate to the community that it is willing to take an active role as the standard-bearer for IAM systems within R&E. With this action, existing and prospective InCommon members become confident that moving forward, InCommon is prepared to support and advise its variety of members on how to effectively use Internet2's middleware products and strategically connect with commercially available offerings.

→ **Potential Outcomes:**

- **Clearly defined value proposition:** A newly written value proposition that is published on the InCommon website and in marketing materials.
- **Shared messaging resources:** A messaging toolkit to be leveraged by InCommon staff, advisory boards, and members.
- **A community statement:** An outward facing statement for the community to collectively advocate for federation.
- **Collective action campaign:** An advocacy and outreach campaign to increase willingness to support InCommon platforms by industry providers and third-party vendors.

2) Internet2 provides the InCommon membership community with technical recommendations for how to select, implement and maintain IAM infrastructure.

→ **Objective:** InCommon members feel supported by the guidance Internet2 offers them. These recommendations address a variety of common needs and critical challenges specific to the audience groups that the InCommon community is composed of. This level of targeted support and leadership distinguishes Internet2 and, by extension, InCommon as the authority on IAM for R&E.

→ **Strategy:** Internet2 recenters existing working groups around known challenge areas, including developing technical recommendations and blueprints. These working groups should engage across InCommon's [key audience groups](#). Over a one-year period using [this repeatable process](#), these working groups should develop three recommended technical stacks that address the key challenges and needs of each of the various audience groups. An acceptable outcome in this process is also determining areas that InCommon considers out of scope with regard to their technical objectives. In this case, InCommon can maximize value for the community by recommending specific partners,

products or services that can address the challenge at hand. Internet2 Staff should facilitate making these recommended technical stacks visible and available to the broader membership community via the Newsletter and internet2.edu. In this process, Internet2 should also update how InCommon Catalysts provide recommendations to community members.

→ **Potential Outcomes:**

- **Prioritization scheme:** A framework is established and high priorities are identified, formalizing which technical blueprints and supportive materials should be developed first. See “Product Audit” in Objective 4’s Potential Outcomes)
- **Technical blueprints:** Clear technical recommendations are packaged and disseminated to the community.
- **New partnerships:** InCommon’s scope of work is clearly defined, with complementary organizations in the broader ecosystem positioned and prepared to identify complementary or overlapping domain areas. New partnerships are developed.

3) InCommon assembles an Innovation Group that convenes the community around emerging security protocols and proactively advises members on critical improvements and updates to IAM systems.

→ **Objective:** IAM experts within R&E should know that one of the valuable benefits of InCommon membership is knowing how to quickly and efficiently learn about emerging protocols and requirements in order to integrate them into their IAM system. A security-focused Innovation Group provides InCommon members with the confidence that they will be receiving valuable guidance on current security best practices and Federal security regulations. Members shift from taking a reactive to a proactive approach with regard to enhancing their security approaches. Membership engagement and retention increases. New community members join Federation due to enhanced security offerings.

→ **Strategy:** InCommon assembles an Innovation Group to assess challenges and opportunities within security specific to Higher Ed & Research organizations, following [this process](#). The Group leverages the community to make collective decisions around where to invest in new infrastructure and approaches. Solutions that should be addressed first include:

- Formalized recommendations around emerging security protocols (OIDC, O-Auth, Zero Trust) and authentication techniques (passkeys, Bring Your Own Identity, eWallets)
- Evolutions to InCommon TAP product roadmaps
- A shared identity flagging solution, system, protocol, or agreement to ensure that when an identity is flagged or compromised at one institution, other institutions that may be affected are notified

In addition, these shared approaches and best practices are formalized into the technical recommendations and guidelines from Internet2. The Innovation Group sets clearly defined requirements for a product development roadmap.

→ **Potential Outcomes:**

- **Recommendations around priority protocols:** Next-gen security protocols are identified and prioritized in product and service recommendations, with InCommon integrating these into technical blueprints according to audience group trends and needs.
- **Exploring emerging areas of concern:** InCommon working groups explore and report on emerging challenges for the community, such as remote learning and fluid credentialing.
- **Partnerships with standards bodies:** Working relationships are established with individuals and organizations that are subject matter experts in the space.

4) InCommon promotes product implementation and integration to increase engagement with Federation and the Trusted Access Platform.

→ **Objective:** InCommon takes the lead in upleveling the community to better address the integration challenges that were expressed in the consultation process. These challenges speak to the experience that industry providers have in supporting InCommon products: existing restrictions on admin accounts that are difficult to work around, and the manual, labor-intensive processes required to integrate with InCommon.

→ **Strategy:** Using data and feedback from Phase II of this work, Internet2 revisits its product inventory in order to examine what products are most used, for what purposes, and by which audience segments. This information will inform which products and services to prioritize providing actionable guidelines and technical solutions for. The end goal is for Internet2 to be the authority to the community on what products and services to use based on interoperability needs and implementation constraints.

→ **Potential Outcomes:**

- **Product audit:** All TAP products and IAM middleware are consolidated into a list and assessed for usage and effectiveness. The most widely used products will be prioritized for implementation support, and less utilized products may be deprioritized or even decommissioned.
- **Updated product roadmaps:** In the process of identifying top products to recommend, Internet2 revisits TAP product roadmaps to define interoperability and integration needs.

5) Internet2 communicates about its product and service offerings in ways that allow for all InCommon audience groups as well as prospective members to find their own tailored pathway into Federation that is unique to their institution's needs and constraints.

→ **Objective:** Each of the [key audience groups](#) that compose the InCommon membership identified aspects of IAM system management that need improvement. While themes exist across the needs of

these groups, institutions must be able to see their needs being anticipated by the solutions Internet2 presents moving forward.

→ **Strategy:** In order for Internet2 to find the right language and pathways to make its service offerings and support resources will require that Internet2 first must understand the nuanced needs across the community. During the one-year process of developing Opportunity #2, Internet2 should use this gained understanding to deploy its community management experts to [innovate on](#) how these technical stacks are communicated, where they are published, and how they are distributed for maximum visibility to the right stakeholders.

Ultimately, clear pathways for engagement from within and outside the community will lead to an overall stronger position for InCommon within the Higher Ed & Research space as well as in the commercial IAM space.

→ **Potential Outcomes:**

- **Audience-specific pathways into and through InCommon:** Customer journey maps document how to bring in and guide audience groups through establishing federated identities and joining InCommon. New supportive channels are established.
- **Small school pilot:** A regional pilot is established with an anchor institution to recruit small schools into InCommon; a successful pilot would conclude that a small college can easily find its own pathway into Federation, or an MSI could reach out to the right point of contact and get support in vetting a particular Federation entry pathway.
- **Support infrastructure:** New customer success infrastructure supports existing members to stay in the federation.

Tactics & Implementation: An Innovation Framework

InCommon will achieve the strategic objectives as laid out in this document by embodying the approach of the collective authority. This new lens will support the realization of these objectives, leveraging the InCommon ecosystem in a new way to provide value for the Higher Ed & Research community.

InCommon should re-center the community and its advisory bodies on crafting shared solutions to common challenges by engaging in time-bound intentional innovation cycles that drive toward its strategic objectives over the next 5 years. This can be understood through a four-step, repeatable process:

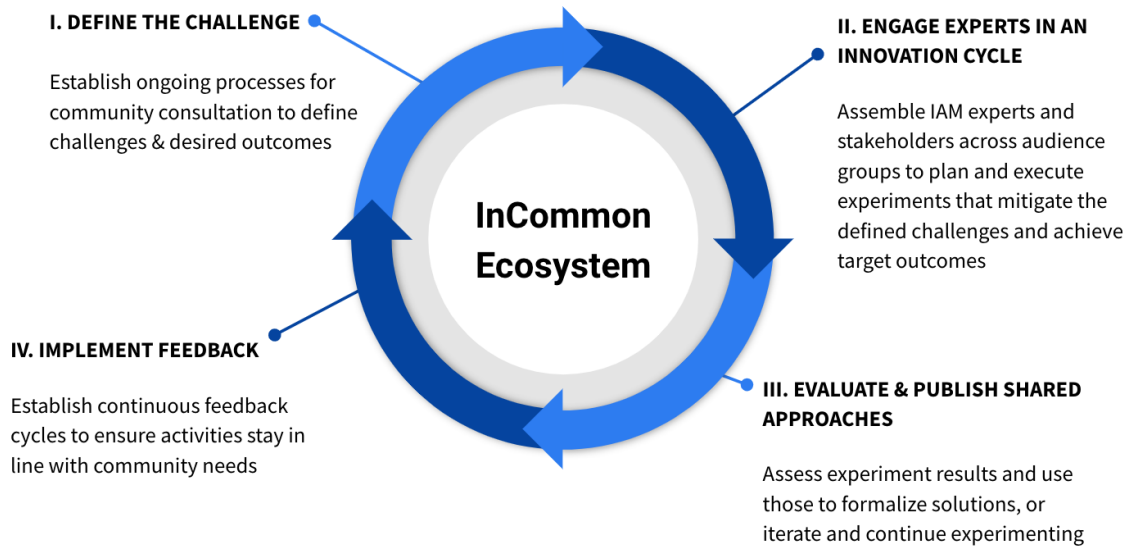


Image 1: InCommon Ecosystem Process Diagram



Image 2: Innovation Cycle Breakdown

I. Define the challenge and target outcomes

Identify and prioritize the challenge your community is facing. Who does it impact? What systems are compromised? How might conditions improve if this challenge is mitigated? How will you know this issue is no longer prevalent? Start to answer some of these initial questions within yourself or a group of people who are also exposed to this challenge everyday.

- Do you have any ideas for how to mitigate this challenge, and approaches for implementing some solutions? Jot them down in one place.
- Do you have a theory or hypothesis? Document it so that you can start to include others in your thinking.
- Make your goals ambitious! What would be fulfilling for you to work on? What are solutions that you believe are most valuable to your community? How do you want your environment, product, team to be different after this work?

Scope & Sequence Target Outcomes

In order to achieve strategic objectives as a community and successfully leverage collective knowledge and decision making, groups should scope out their challenges and define target achievable outcomes. These target outcomes should be simultaneously prioritized and sequenced in order for this body of work to build upon itself and achieve broader strategic objectives. The target outcomes alluded to in this report can all be scoped and sequenced in 6-18 month cycles, depending on the complexity of the challenge area. Below is a sample of how InCommon might scope innovation cycles, based on the strategic objectives.

Strategic Objective	Challenge Area & Target Outcomes
Value Proposition, messaging & advocacy [Objective 1]	Cycle 1 Value Proposition: Crafting a value proposition with shared messaging resources
	Cycle 2 Drafting a community statement: Leveraging updated value proposition and messaging to create outward facing statements for the community to advocate for federation
	Cycle 3 Collective Action: Building an advocacy and outreach campaign to increase willingness to support InCommon platforms by industry providers and third-party vendors

Technical Recommendations [Objective 2]	Cycle 1 Mapping technical blueprints: Identifying which technical blueprints will be of highest value to the community
	Cycle 2 Designing technical blueprints: Based on the results of cycle 1, craft a few high-priority blueprints to launch to the community
	Cycle 3 Distribution & evaluation: Distribute blueprints to the community, gather feedback, and evaluate success to inform the development of future recommendations
Innovation & Security [Objective 3]	Cycle 1 Next-gen security protocols: Assess next-generation security protocols and identify which, if any, need to be considered for implementation in product roadmap or development of shared approaches for the community
	Cycle 2 Developing recommendations around priority protocols: Based on the results of cycle 1, develop recommendations around high-priority next-gen security protocols for integration into the InCommon approach
	Cycle 3 Exploring emerging areas of concern: Exploration of emerging challenges for the community, such as remote learning and fluid credentialing
Product [Objective 4]	Cycle 1 Product audit: All TAP products and IAM middleware are consolidated into a list and assessed for usage and effectiveness
	Cycle 2 Revisiting roadmaps: Prioritizing the most widely used products, re-visit product roadmaps to define interoperability and integration needs
	Cycle 3 Product consolidation: Identify less utilized products, consider whether such products should be deprioritized or even decommissioned
Wayfinding & support [Objective 5]	Cycle 1 Mapping audience-specific pathways into and through InCommon: Building customer journey maps to document how to bring in and guide audience groups through establishing federated identities and joining InCommon
	Cycle 2 Small school pilot: Facilitating a regional pilot with an anchor institution to recruit small schools into InCommon, identifying possible grant funding sources
	Cycle 3 Support infrastructure: How might InCommon build customer success infrastructure to support existing members to stay in the federation?

Table 3: Sequencing Target Outcomes (Sample)

II. Engage experts in an innovation cycle

These suggested steps make up the bulk of the work to sketch, test out and implement solutions that address the defined challenges that ladder up to :

- A. Identify audiences to engage in designing an experiment that will test out a solution to achieving the target outcomes defined
- B. Determine the method by which you will convene the right experts and perspectives
- C. Design your experiment
- D. Communicate

A) Audiences to engage

Each challenge area will require a different combination of audiences in order to achieve the target outcomes. Audiences should be engaged based on 1) what domain expertise is needed to solve the challenge at hand and 2) what perspectives are required to ensure solutions meet the specific needs of institution types. Audiences to engage should include:

- a. **Higher Education:** Larger universities can be leveraged for their technical expertise around federated IAM. Small schools, tribal colleges, and minority serving institutions must be engaged proactively to ensure their unique needs are considered.
- b. **Research:** The unique use cases of research stakeholders can help identify where products, services, and tools need to be in the future.
- c. **Federal agencies:** Federal agencies are important stakeholders as they can drive engagement across the entire community.
- d. **Industry:** Industry participants should be included for their expertise in areas of interoperability and making InCommon's TAP portfolio as easy to implement and integrate as possible.
- e. **Catalysts, vendors, and architects:** These important InCommon partners should be engaged heavily as their contributions are key to ensuring the community is supported in their IAM infrastructure.
- f. **Ecosystem:** Additional ecosystem participants, such as libraries, should be defined and engaged on a case-by-case basis.

B) Methods of convening

There are many methods to convene the community toward shared solutioning. This can be done through leveraging existing advisory bodies to form committed working groups around the challenge areas. It can also be achieved by leveraging additional strategies to engage a wider audience, enlist experts who are unable to commit to long-term engagement, and more efficiently manage resources.

- a. **Committed working groups:** Groups of 5-12 stakeholders, actively facilitated by Internet2 staff, that convene regularly to generate a shared definition of the problem, ideate solutions, and build consensus around recommendations, resources, or solutions to pilot and build.
- b. **Innovation challenges:** Short-term sprints that engage a wide audience in brainstorming & designing solutions, can be run virtually or in-person through a dedicated event or built into existing conferences.
- c. **Facilitated workshops:** One-time sessions that bring together key stakeholders to generate important inputs and feedback for InCommon initiatives.
- d. **Product development fellowships:** Cohorts of emerging IAM professionals designed to provide capacity building while bringing talent together to achieve target outcomes.
- e. **Development funds:** Pooling resources to invest in new solutions, governed by a decision-making body.

C) Design the experiment.

Scope out a pilot that tests the chosen approach. Get approval from a sponsor for running it.

- What are the key performance indicators that would determine if proof of concept is being achieved? What are the potential areas of risk, and markers of failure? What strategies might you deploy if things start to go off track, or don't go as expected?
- What resources are available to you to run this experiment? What is your budget? How much time is available?
- Do you have the right team in place to begin testing proof of concept? Which individuals should be part of this process, and why? What specific skills and experience do they bring? Assemble the best team that will design and execute this experiment according to plan and scope.
- How will progress be tracked? What tool will be used? How often will the team meet to discuss this? What stakeholders will progress be reported to?

D) Run the pilot and communicate early, often and with detail:

- Are you getting results? What are they? How are they received by the team? Are there varying interpretations of what the results mean? What is being learned?
- Keep an eye on the areas of risks and failure points identified earlier. Are you approaching these? Do you need to pivot or make a change?

III. Evaluate and publish shared approaches

At the end of the pilot, how did things go?

- Was proof of concept achieved? Should the idea be formalized, with findings and best practices published and disseminated?

- Did things not go as the team expected? Should the pilot be revisited and the approach be iterated upon?
- Is it time to move onto another idea and leave this one behind? Why?
- Overall, what is being learned? How will these learnings be incorporated into future work? What more would the team like to learn about this approach and challenge area?

InCommon should take ownership of funneling this collective knowledge into valuable resources for the community. These resources can take many forms, including but not limited to:

- Messaging and communication resources
- Audience-specific toolkits
- Technical guidelines and blueprints
- Best practices and recommendations
- Recommended external partners, products, or services
- Thought leadership on next-generation protocols and emerging technologies
- Product improvements or roadmaps

This step is critical to positioning InCommon as the collective authority. For members and prospective members who may not be deeply participating in the creation of shared approaches, they will be able to trust that when they come to InCommon, they find guidance, resources, and compelling solutions.

IV. Implement Feedback

A final, crucial step is to continuously gather feedback from the community that validates results. Consider processes that are:

- Lightweight, automated, can run in the background
- Designed to extract and consolidate actionable insights that measure against the KPIs set in the planning phases of the experiment
- Able to easily inform whether community needs are being met by these new solutions
- Revisited regularly by the team, discussed, and shared with stakeholders

Stringing together a few methodologies can support the collection of robust feedback, from a wide array of community members, and routing that feedback to the right people who can integrate the knowledge and put it into practice:

- Annual impact surveys:** Periodically surveying the entire membership to measure the impact and effectiveness of InCommon offerings and surface emerging challenges and opportunities
- Solution-specific consultation:** Surveys, interviews, focus groups, and other dedicated methodologies to gather feedback to improve specific offerings
- Evergreen webpage to submit feedback:** An easily accessible place, such as a dedicated web page, for community members to leave feedback at any time

Conclusion

The dedicated Higher Ed & Research experts of InCommon were incredibly engaged in this work. Based on their feedback and participation, it is clear that this global collective values and promotes collaboration and learning.

The group is ready to be led in the process of devising creative, sustainable solutions for IAM. The community is looking to InCommon to lead as the collective authority in this effort. The optimism and deep industry knowledge from the community pave the way for an exciting future for InCommon. With InCommon leading the process of working toward the outlined Strategic Objectives, the community will:

- Be galvanized by demonstrated leadership and calls to action
- Feel seen in the process of being called upon to participate
- Be energized by being part of devising solutions that directly impact their local ecosystems
- Feel inspired as they are reminded that they are part of building the future of InCommon

By embracing an ecosystem-centered approach and tackling objectives in planned, repeatable cycles, InCommon will operationalize toward setting the Higher Ed & Research industry standard for flexible, dynamic, inclusive IAM infrastructure, facilitating important academic collaboration and scientific discovery for years to come.