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Futures2 Research Synthesis

Internet2, InCommon, SecondMuse

Overview

This document summarizes high-level research findings from the consultation process of the [Futures2 Project](#). A diverse set of audiences and community members across the InCommon community were engaged through a variety of methodologies (see [Appendix](#)). Areas of inquiry included: IAM trends and challenges, InCommon's offerings and business model, and opportunities for growth and evolution.

Reference documents

These documents are numerically cited in the research findings.

1. [Kickoff roundtables](#)
2. [Survey results](#)
3. [Interview synthesis](#)
4. [Desk research](#)
5. [Stakeholder roundtable](#)

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NEEDS & OPPORTUNITIES

1) Simple, direct, effective communication combined with a strong value proposition

- A strong value proposition and clear, compelling messaging were commonly expressed desires across audience types.^{1,2,3,5}
 - *“Single greatest challenge is trying to address broad community requirements with narrow focus on articulating the value current offering of IAM tools could provide”* - IAM Practitioner and member of Internet2 Staff
- Currently, communication is overly complex and could benefit from being simplified^{1,2,3}
- Both partners and members^{2,3} cited the need to leverage collective action along with strong messaging in order to amplify the importance of federation and protect the community from being overtaken by commercial competitors
 - *“I think that that is a fundamental question for the InCommon community. How, how can all the voices [together say]... we want you Microsoft to support [federation].”* -Federal Agency member

2) Clearly defined technical solutions, recommendations, and support mechanisms

- A prominent theme from the consultation process is the need for clear technical recommendations. A variety of audience groups, including higher ed organizations, partners and catalysts, and staff members expressed this.^{2,3,5}
- IAM departments are presently focused on improving in the following areas:
 - **Unification:** Unifying IAM infrastructure; modernizing IAM systems^{2,3}
 - **Interoperability:** Creating integrated, seamless connections across platforms; achieving a multi-platform IAM approach; knowing when to engage a third party^{1,2,3}
 - **Automation:** For smaller schools, achieving automation. For industry partners, reducing manual processes needed to support federation. For larger institutions, maintaining automation.^{2,3}
- Members are in need of general support infrastructure for InCommon’s products^{1,2,3}
 - *“When you go to a commercial entity, you know they’ll figure out how to make that work. Now you’re paying a lot of money, but they’ll figure out how to make that work. And the problem right now with InCommon that I see at least is, I don’t really see a way to be able to say, who do I write a check to, to solve this problem?”* - CIO at a Medium sized college
- Partners and staff expressed a need for improved written documentation that includes technical recommendations and implementation guidance for a variety of audience groups.^{1,2}

3) Guidance, shared approaches on how to address security risks and next-generation protocols

- Community members anticipate evolving IAM approaches to enhance security. There is interest in collectively devising solutions to next-generation security protocols (OIDC, O-Auth, Zero Trust) and authentication techniques (passkeys, Bring Your Own Identity, eWallets).^{1,2,3}

- *“We collectively need to adopt these zero trust principles, but also in terms of any potential change in the protocols that are allowing us to federate” - Federal Agency member*
- *“Interested in understanding how InCommon can help with NIST, CMMC, etc compliance requirements that are coming.” - CISO at a Large research university²*
- Members, partners and staff spoke to a need for Internet2-sponsored support for identity governance administration^{1,2,3}. This could include a shared identity flagging system to notify other institutions when a user that has access to their systems has been compromised.³

4) Multiple audience groups need a tailored pathway into federation, including:

- Small colleges, tribal colleges, and MSIs need a pathway to federation that addresses the high barriers in their way, particularly cost and ease of implementation.^{1,2,3,5}
- Small, multi-institution research projects experience similar budgetary constraints.³
- From a security standpoint, existing members could benefit from third parties with whom they share university data, such as the National Student Clearinghouse, joining the federation.³
- NIH participation is a driver for some to enter federation³, and InCommon could benefit from recruiting additional federal agencies^{1,5}.
- Vendor-specific engagement pathways may also facilitate greater industry support.³

CHALLENGES

5) Integration and implementation of InCommon solutions continues to be challenging

- Members comment on the absence of a “turnkey”, “out of the box”, or “complete” technical solution offered by InCommon, and integration is a challenge.^{1,2,3}
 - *“[InCommon hasn’t] delivered a full solution... There’s no conduits [or] connectors that are designed to say, ‘When you’re hooking it up to PeopleSoft, here’s how [to connect], you’re going to be looking at a two or three month effort, and you could cost it out.’” - CIO, Medium sized college*
- InCommon products are difficult for industry providers to support due to restrictions on admin accounts and manual processes required to integrate with InCommon.³
- Additional product challenges: keeping up with software updates³, murky implementation pathways and costs^{2,3}, and lack of solutions around next-gen security protocols (see #3).

6) Federation is losing headway to commercial offerings

- Pressure to switch to commercial solutions is growing, and it is a near universal feeling that transitioning to a commercial solution is the equivalent of pushing an “easy button”.^{1,2,3}
 - *“We’re in a mode of consolidating onto Microsoft services for IAM because they have been providing what we need, are easy to implement and manage, and are bundled cost-effectively. We... are concerned that their support has been going downhill and their prices going up... but it’s difficult for [InCommon] to compete on capabilities and ease of use” - Information Security Officer at a Medium sized college*

- In addition to having more resources, commercial solutions have the competitive advantages of clear value propositions⁴, effective marketing⁴, clear implementation pathways^{3,4}, defined costs³, accessible support³, and lower perceived risks³.

7) Skills gaps, knowledge loss, and lack of support hinder strong IAM infrastructure

- Higher ed and research institutions are facing growing skills gaps and knowledge loss amongst their IAM functions, ultimately making it easier to outsource to commercial offerings.^{1,2,3}
 - *“It is difficult to hire for skill sets... it is one of the big factors in determining what to use or not use.”* - Director of Technical Services at a Medium sized college
- Related challenges include: tech debt, finding the right consultants, and CIOs balancing complex demands on their time and attention.

BENEFITS & VALUE PROPOSITION

8) Many are motivated to stick with the federated approach to optimize for accessibility, collaboration, and security

- Many InCommon members highly value the federation and are motivated to see it grow and succeed. Members value the security, common trust framework, and ability to collaborate and access research opportunities across institutions.^{1,2,3}
 - *“InCommon is the Identity Federation Provider that assists US Higher Education and Research organizations in providing secure and seamless access to organizational resources for all its members. Leveraging an Identity Federation Provider simplifies connecting to new resources that you are onboarding.”* - Principal Architect at an ISP
 - *“Pushing the easy button [is] unintentionally pushing the insecure button”* - CIO, R1 University
- Prospective members may also be motivated by these same benefits.
 - *“Jupiter Hub is a catalyst for us [to implement federated logins].”* - CIO, Small College

9) Existing offerings to build upon:

- InCommon provides value to the community by offering a space to convene around best practices, shared solutions, tools, trends and challenges:
 - *“Bringing in guest speakers from the IAM community to present and having leadership participate in InCommon events... has helped [make developers understand that the easiest solution is not necessarily the best].”* - International program manager at a Federal Agency
- Eduroam and certificates were mentioned frequently as favorite services.^{2,3}
- Communicating NIH requirements is valuable, particularly to the agency itself, and may be a driver for new members to join.^{2,3}
 - *“That requirement from the NIH’s part made sure that a lot of the existing research universities had to stay with InCommon... has driven a lot of the current customers that we have to come to us [to join InCommon].”* - InCommon Catalyst