Introduction

Background

In 2003, InCommon evolved out of the Internet2 middleware initiative as an extension of its work in the identity and access management realm. Recognizing both the need for effective federated identity management and the opportunity to accelerate and promote shared practices, Internet2 worked with the larger higher education (HE) community to create the InCommon initiative.

In 2004, InCommon was established as a single-member limited liability company (LLC) for two reasons. First, the LLC would shield Internet2 from potential liabilities associated with this new federated identity service, a completely new construct for the facilitation of trusted identity-based interactions on the network. The second goal of the LLC structure was to provide a separate governing body that would focus its efforts on creating effective policies and practices and a business model for the federation's services in the midst of a highly dynamic environment of continued innovation. With a small number of initial members, it was uncertain this effort in federation would succeed. The commitments of many IT leaders in the HE community and the lack of a rigid structure provided the flexibility and impetus for InCommon to experiment and move forward.

The LLC charter delegates the responsibility of InCommon to a Steering Committee, an appointed committee of roughly ten individuals who rotate through the committee on three-year terms. The InCommon Steering Committee ("Steering") is appointed by its own members to represent a cross-section of HE: public, private, large, and small institutions, as well as corporate partners. Steering has also created a technical advisory committee (the TAC) to advise the federation on matters related to technology, specifications, standards, and other practical matters of importance to the community. Many of the members of the TAC also participate in Internet2's middleware initiatives and the Middleware Architecture Committee for Education (MACE).

In 2006-2007, Internet2 underwent a sweeping review of its governance. The community-led governance and nominations committee (GNC) made significant changes in the Internet2 governance model that led to the creation of four advisory councils, changes to the composition of the Board of Trustees, and the development of a new Internet2 strategic plan. InCommon and several other LLC-based initiatives were not included in the scope of the GNC's modifications. InCommon continued to develop as a distinct concern.

Motivation for Change

InCommon's success over the years, roughly doubling in size annually, has led to rapid growth and the current acknowledgment by many in the HE community and federal government that InCommon is becoming a critical component of the nation's cyberinfrastructure for research and education. InCommon's critical role as trust broker for the HE community and its many partners requires that it continue to develop as a

reliable organization that provides 24/7 production-level services for scholarship, research and education. This has led to a renewed commitment by Internet2 leadership and the HE community to ensure InCommon's stability and vitality into the future.

While InCommon LLC's charter outlines clear fiduciary and governance responsibilities, InCommon Steering has no clear powers within Internet2's governance to affect budgetary decisions and resource allocation. Likewise, Internet2 governance has no clear power to affect decisions related to InCommon's business model, scope, pricing plan, participant categories, etc. Additionally, InCommon is not explicitly mentioned in Internet2's new strategic plan.

Given the rapid pace of technological change and HE's evolving needs for identity and trust services, continued flexibility and responsiveness are also needed. The specific nature of the organization must include more explicit funding commitments and commensurate accountability, clear decision making authority and mechanisms, and clear responsibility for strategic directions and management of available resources.

All of these factors have combined to initiate the formation of a plan for InCommon's future.

InCommon's Future

To support the continued foundational work of creating a production-level identity federation in the U.S., Internet2 and InCommon Steering have created an InCommon Future group, a task force composed of leaders from Internet2's governance councils, InCommon Steering, and the HE community at large. Their charge, described in detail in a separate document, is to gather community feedback, culminating in a recommendation to the Internet2 Board of a three-year plan for InCommon comprising: Membership criteria; Scope of services; Governance & Representation; and a Financial plan to support these activities.

The following document, prepared by the InCommon Future group, has been drafted for community input. Recommendations will evolve from this draft as a result of discussions and feedback.

Sections include:
- Risks
- Services
- Member Segmentation
- Governance & Representation
- Financial Plan & Organizational Structure

InCommon Future

- Draft for Community Comment -
Strategic Planning Framework:
- •Risks,
- •Services,
- •Members,
- •Governance,
- •Financials

Risks to the Success of InCommon

1. Substitutes for Federated Identity: Diverse Standards (e.g., user-centric) and Commercial developments: other large user identity sources, workflow hubs, ...

2. Vendor Support & Interoperability: Standards, Software Packages, Metadata

3. Institutional Rigidity: Changes to and Complexity of Identity Management, Legal Precedent, Long-standing business practices

4. Volunteerism: support for and reliance on community volunteers for: technical strategy, policy leadership, market influence, partner engagement

5. Innovation and Leadership

   5.1. Key partners: federal gov agencies and labs, state and regional associations, k12 systems, international R&E partners

   5.2. Continual evolution of federation approach: SAML2, Metadata, Federating Non-Web Resources, Interoperability of identity approaches

   5.3. Keeping R&E Interests at the identity table: Keeping policies appropriate for R&E resources and practices, keeping the system open, attribute aggregation, transitive trust.

1. Substitutes for Internet Identity

- **"Internet identity"** may supplant institution-based federation. An alternative consumer-based model often called "Internet identity," composed of a large number of identity providers, ranging from very large to very small, largely commercial, and generally undifferentiated. Users appreciate the freedom to choose any provider, and the low barrier to create a new identity. Assurance, authenticity and community have to be built up entirely online, i.e., without benefit or need of institutional support.

- Other companies also wish to leverage identity management services via less open federation mechanisms. Companies are already in the space (certification, workflow hubs) and interests may start to overlap, for example in health care. State governments may build on motor vehicle or voter registration systems to create identity services. These organizations may be able to create service offerings that are more robust, full-featured, efficient, usable or authoritative than R&E and InCommon, and squeeze R&E out of the market.

2. Vendor Support & Interoperability

- Vendors who are suppliers of federating technologies could decide to use a **competing standard** or not support R&E federation directions if no commercial marketplace develops.

- One of the most immediate benefits of joining InCommon is federated access a wide range of online service providers,. With a single policy and technical solution, campuses spend little time negotiating individual arrangements. While larger service providers can manage implementation, smaller online services, numbering in the hundreds in the R&E market, need significant assistance at the start, from basic concepts to testing pre-production environments with campuses.

3. Institutional Rigidity & Resources

- Federation is **complex** for institutions both at the technical and business levels.

- Participation in a federation requires an institution to have relatively mature identity management on campus. Standards and software packages compete, leading to technical instability and effort to achieve interoperation.

- Moving business and academic processes to federation may require changing long-standing practices or contracts.

- Lack of legal precedents may delay decision-making indefinitely.

- It may be that only a small percentage of institutions have the resources to overcome these obstacles, making federation out of reach for the community in general.

- Much of the value in federated identity will emerge from using roles and entitlements with external partners, and HE may not be able to modify its business practices to make use of these capabilities, reducing the value of the federation.

4. Efforts of and Reliance on Volunteers

- InCommon is a community activity. Community members

  - evangelize new vendors

  - analyze service opportunities

  - develop technical strategies

  - do interop testing, etc.

  - Volunteers often self-organize, but often need help with coordination, documentation, and follow through. Core staff efforts are needed to support and reward volunteer activity.

5. Innovation & Leadership

- The R&E community's development of federated identity ensured the resulting standards, software, practices, and services fit the needs of the community. Continued R&E leadership is needed:

- **Innovations to the federation system** (e.g. attribute aggregation from multiple sources, semantic mechanisms, inter-federation, non-Web based identity) . InCommon has had great success providing fully-interoperable services among all members using the SAML 1.1 protocol, primarily using the Shibboleth system. The current SAML version, 2.0, is now implemented by many vendors. Moving the community to support the new protocol version will require technical support, evangelism, scheduling.

- **Key partners**: To ensure national-level interoperability among regional and other vertical communities: we could move to a separate state-based approach (or K-12, Health Care, etc.), without a national level service or consistency & openness in architecture.

- **Emerging**: The Internet identity space is currently very active and volatile, with many vendors, organizations, and technologies competing for mind- and market-share. R&E community must engage appropriately with these communities or risk being an outlier.

Services Principles

- InCommon today provides reliable federated access to distributed resources, content, and services.

- InCommon is uniquely positioned to provide federation services that support software-as-a-service (SaaS) and cloud computing.

- InCommon should position itself as *THE* provider for higher education by setting a high standard for technical quality and for higher ed values such as privacy protection.

- Throughout this document we highlight the many opportunities where InCommon can forge partnerships within the community to offer new services and meet the needs of the community.

As a community...

- Many organizations and institutions have contributed to the success of this middleware direction, initiative, and service.

- How aggressively should we pursue the advancement of federated identity?

- Which organizations should perform the capabilities and services needed?

With that in mind:

- There are 4 categories of service activities. InCommon:

  1. Is committed to a set of **core** services to continue and improve upon

  2. Is committed to a set of **promised-in-development** services to deliver

  3. Is reliant upon **adjacent** middleware activities that could or could not belong to InCommon

  4. Could offer **additional** innovative services, expanding its role.

1. Core

- Basic: Continue operating and upgrading core functions:

    - Registration Authority

    - Metadata Registry

    - Discovery of User IdP (WAYF)

    - Support for key constituents: registrars, financial aid officers, libraries, researchers, others

    - Convene the community for continued evolution and mutual direction setting

2. Promised - In - Development

- **Silver (assurance framework)**: Finalize compatibility with federal govt, work with audit community for adoption and practicability, upgrade federation operations, work closely with campuses in new audit process, develop legal and business framework, work with partners to support implementation on campuses

- International **Inter-Federation**: work with federations in the EU on policy and technology issues: user privacy laws, transitive trust, metadata use, etc.

3. Adjacent Middleware Activities

- The following services are critical to the success of federated identity for the R&E community. InCommon will rely on these activities. Should InCommon consider them out of scope in the next 3 years or as core to its own activity set?

3.

Shibboleth Software development

- Maintain and improve the Shibboleth system

3.

Shibboleth Training

- Run regular training sessions for Shib and IdM installations.

- Document Shib recommended best practices and maintenance.

- Make Shib easier to install, easier to learn how to work with.

- Work with Microsoft to develop materials for campuses using Windows and Active Directory to implement eduPerson attributes and Shibboleth.

Consulting: Installing Shib

- Work to develop standards and documentation so that recommended external vendors are available.

- Create a network of commercial or other partners for deploying Shib SPs and IdPs

3.

Attributes

- Develop standard attribute release & acceptance policies for easier, more scalable adoption and implementation.

- Coordinate development of new attributes such as those based on roles and entitlements.

- Support user agents to manage attribute release

3.

Outreach for Federating Campus Identities

- Work with Software Vendors to support needed developments related to SAML, third party metadata, etc.

- Work with higher education consortia such as the Council of Independent Colleges, the American Association of Community Colleges, the Common Solutions Group, the Committee on Institutional Cooperation, the Consortium of Liberal Arts Colleges, and others to identify opportunities and needed services.

- Work with K-12, state networks and systems, and other strategic industries to promote their adoption and use of common technologies, platforms and standards and to ensure their ability to interfederate seamlessly with higher education.

- Encourage Microsoft to promote SAML federation as a preferred model for leveraging Live@EDU ecosystem – develop a training program for Microsoft VAR's to be certified in deploying SAML-based federation services.

- Actively recruit services of high value to the community

- Encourage Internet2, EDUCAUSE, others to support adoption and to offer member services through InCommon

3.

Leadership

- Maintain a presence at the Internet Identity table:

  - standards bodies such as OASIS

  - Communities of innovation such as Liberty, other identity forums

  - Key software vendors for end-users, and IdM for the enterprise

3.

Innovation

- There are two ad hoc and non-scalable parts of the user experience (selecting an IdP and managing the release of attributes) that are addressed by **InfoCard**, an open standard developed by Microsoft. Developing the capability for InfoCards to be used with Shibboleth will significantly improve the user experience for federation members.

- **OpenID** is an alternative and somewhat complimentary form of Internet identity. By including OpenId support in Shibboleth, sites will be able to use both forms of identity

- Other R&D: Attribute aggregation, dynamic metadata, etc.

4. Additional Opportunities

- The following are services that InCommon could (or should?) engage in, if the mission of InCommon were to expand in line with community need and support.

- Alternately, InCommon could seek out partner organizations that would leverage InCommon and provide the following services to the community either as a non-profit or commercial offering.

4.

Non-Web Based Trust

•Several large Grid communities (in the US and internationally) want to leverage federated identity. Work has been done to date but has not been deployed widely in the Grid community. Assisting Teragrid, Open Science Grid and others in deploying federated identity technologies and effectively engaging with universities is needed.

•This could be an excellent opportunity for partnership with one these communities to work with InCommon on specifications and leverage resources within the particular community to provide a scalable and generalized service.

4.

Virtual Organization support

- Determine if COManage or something similar should be a service offering either through InCommon directly or through a service provider.

- As with grid support, this could be an excellent opportunity to develop a well-defined partnership with one or more groups to deliver collaboration tools to that particular community. InCommon would likely need to provide some support for metadata.

4.

Custom Federation Services

- Provide outsourced federation services for other federations.

- InCommon could function like a top level domain (TLD) and create federations for other groups.

- InCommon would stand up the domain and run the infrastructure for the signed meta-data with regular updates based on requirements.

- InCommon would negotiate costs for administrative support if that was desired; otherwise the outside group would define the membership criteria and approve members.

- 24/7 Help Desk Support

- Possibly a generalized IDP for guests and others of that federation

4.

Server Certificate Service

- Providing a CA that issues server certificates for the R&E community.

- Supported by all major browsers

- Possibly partner with an existing server certificate authority.

4.

EduRoam in the U.S.

- There has been some limited interest in providing EduRoam services (accessing wireless networks using institutional credentials and a RADIUS hierarchy)

- The would be an excellent project for collaboration between the US and International community to pilot and demonstrate inter-federation trust in a lower risk environment

4. Run an IDP for higher education.

- Run a single IdP for guests of InCommon institutions

- Run IdPs for R&E institutions that do not have the technical expertise or resources to manage one independently

- Partner with some group(s) serving higher education to have them run an IDP for higher education that provides level 1 or level 2 identity proofing for secure applications.

4. Centralized Services strategy

- A federation is a natural vehicle for supporting many other layered services that take advantage of a trust fabric.

- National HE federations in many countries provide examples: Library content licensing in the UK, nationally-run administrative applications in many countries, etc.

- In many cases these may be run by federation members and usefully remain distinct from the federation per se. In other cases it may be very useful for the federation to provide these services directly.

- InCommon should develop a strategy for identifying, analyzing, and choosing whether to pursue service opportunities. In general, where possible we should encourage building strong partnerships to fulfill these opportunities.

Members

Segmentation and Member Organizations Served

InCommon will serve the higher education R&E community.

Particular needs include:

- Continued support for resource sharing and access to content and services.

- Higher Assurance Identity needs, such as partnerships with NIH, NSF, other federal agencies.

- International inter-federation

- Other cyberinfrastructure research support such as supporting federated access to grids

InCommon will *not* be limited to the higher education R&E community.

- Organizations sharing common interests with the HE R&E community may participate, but must do so on terms that respect the requirements of higher education members.

- Corporate & Other Service Partners should be encouraged not only to join but to engage more actively with their own customer community in increasing federated activity. InCommon should provide channels and communication vehicles to allow participants to network and engage effectively with community members.

- K-12 Community: It is not clear how the K-12 community should relate to InCommon in the long term; it shares important connections with the HE R&E community but equally important differences. Unique issues include scale, enterprise vs. citizen identity (parents, volunteers, kids), consent & privacy of minors, technology budgets. InCommon's current commitment is to work with K-12 to better understand these issues and needs as a prelude to defining the most effective organizational solutions

Members by Needed Service Level

- Leadership Organizations: universities and companies that innovate independently and have a high degree of internal expertise

- Best Practices Organizations: universities and companies that readily adopt what leadership orgs are doing, usually with a bit of training

- Pragmatic Organizations: universities and companies that adopt tried and true technologies for bottom line results or out of necessity. Typically do not have in house expertise and rely heavily on partners and consultants.

  - Organizations with little in-house technical expertise, and who require complete turn-key identity management services will not, within this three year period, be fully supported by InCommon's set of articulated services.

Membership: Levels

- A more active set of responsibilities should be included for all participants, such as involvement in volunteer efforts, internal stakeholder engagement, bringing more participants into the federation and successfully engaging in federated access with those that are in the federation.

- A diminished participant class may distinguish those who do not or cannot engage actively.

- The Governance/Financial section outlines a tiered model whereby those who are represented at the governance level are a subset of InCommon participants.

Governance

Improving Transparency, Accountability, and Representation

Principles for Effective Governance

- Those involved in governance should have accountability for setting strategic direction and hold senior management responsible to make sure that InCommon meets its commitments in the strategic plan.

  - Governance of a member-based organization usually requires that the governance group (council, board, etc.) set the budget and fees.

  - Representation on the governance group should be transparent and give the members some conduit to have their voice heard. Whether by election or appointment, including groups that set policy and technical priorities (such as the Technical Advisory Committee).

  - In a service organization such as InCommon, many participants that use a service have no desire to be involved in governance. Translated, being a consumer of a service does not imply the consumer must have a role in governance.

Now is the Time That Internet2 Should Review Governance

- Internet2 should review governance for the following reasons:

  - Since 2004, InCommon has evolved significantly, with the potential for hundreds of new members over the next 18 months. The governance model established in 2004, with InCommon as a separate corporation and Internet2 the sole member may not fit the present circumstances.

  - In 2007, Internet2 undertook a new governance model based on the work of the GNC and established four advisory councils. The current governance model does not involve the advisory councils in governance.

  - Proper governance is fundamental to being able to successfully implement the InCommon strategic plan

Internet2 Should Establish Partnerships to Support InCommon

- To leverage the services of InCommon requires that a participating member have a local identity management system in place and have qualified staff capable of implementing Shibboleth on their campus. Establishing partnerships for the broad range of activities outlined above could make this easier for campuses to do.

- Internet2 should partner with IT consultancies and support companies to help campuses establish the local identity management services they need to participate in federation. Internet2 should partner with sister organizations to do education and outreach to the larger community.

- Partnerships provide a way to leverage organizational expertise outside of Internet2 and InCommon to advance the broader goals of InCommon. Partnerships might be as simple as a MOU establishing shared responsibilities; or might be as complex as groups investing in InCommon with a partial claim to ownership, and/or they may want to have to a voice in governance.

Process For Developing a New Governance Model Model

- Internet2 should undertake a legal review to see if the risks associated with federated trust management still warrant a separate corporate entity.

- Internet2 should reach out to potential partners to identify if they have interest in participating in the review of governance.

- Internet2 should create a group, headed by someone associated with the Internet2 board to chair the InCommon governance review. This group should contain key stakeholders from the InCommon Steering, Internet2 advisory councils, potential partners, government, and a service provider to review the best approach to governance using some of the options on the next slide as a starting point.

Possible Options for InCommon Governance

(in no order)

- Remain an LLC but align management and decision-making bodies to Internet2's governance structure;
- Dissolve the LLC and fold InCommon back into Internet2 and define management and governance based on current Internet2 leadership and council structure (liability issues would need to be reviewed);
- Form a partnership with one or more groups and define governance based on the expectations of the partnership;
- Become an organization wholly independent from Internet2 (perhaps with some contractual relationship).

Governance Principles the Group Should Consider

- For InCommon to deliver the production services to participants it needs to be financially stable.

- InCommon governance should put InCommon on a path where becoming an independent organization is possible.

- InCommon governance should demonstrate accountability and transparency to the broader R&E community.

Representation: the Role of a Steering Committee

- The InCommon Steering committee is currently the group listed as the "board" when thinking of InCommon as a corporation.

- There is an ongoing need for both a technical advisory group and an policy advisory group. Normally "boards" do not focus heavily on policy development.

- There is an ongoing need to keep some policy advisory group to remain in place to support InCommon. Usually, this groups recommends policy to the "management team and board"

- Steering members are currently appointed, carefully selected to balance voices in the community. Other possible methods are by election openly or by demographically represented criteria (type of institution, size, geography).

The Role of Senior Management in Governance

- Senior management is fundamental to the success of an organization in executing a strategic plan.

- The senior management of InCommon (CEO, COO, etc.) does not have the proper level of authority or accountability to deliver on the strategic plan.

- The new governance structure should ensure that senior management, in whatever organization, has the authority and accountability to implement the strategic business plan.

Financial &
Organizational Structure

Principles

- InCommon will review member charges with the goal of developing robust production quality services and having a positive cash flow in 2010.

- Any excess revenue will be used to fund community priorities for increased adoption and research & development.

- InCommon's primary focus is on meeting the needs of higher education participants.

- To support members outside of higher education, InCommon will consider providing metadata management services for other groups that want to federate (e.g. K12, states, others) in the form of other federations.

Pricing and Packaging

- One of the most pressing needs is to establish a business model, with pricing and packaging that both builds a solid independent economic base and accommodates the diverse institutions and service offerings we will provide higher education. At a minimum:

  - price points need to be reviewed and set for both InCommon and InCommon Silver.

  - partnerships with other organizations and vendors need to be established to support institutional adoption.

Federating Members Outside of Higher Education

- Groups such as K-12 districts, state agencies, and other non-profit members are likely to be interested in using the power of federation. InCommon the federation should remain focused on serving the needs of higher education.

- InCommon LLC may decide that as a service it should offer metadata management services to other groups to allow them to set up their own federation. These metadata management service offerings should be priced to cover costs plus overhead for InCommon. This gives each federation the opportunity to set their own policies and pricing for membership.

- InCommon Inc. as a research and development effort should focus on support for building cross-federation trust models.

Participant Pricing Options

- Option 1. Everyone pays the same fee.

- Option 2. A tiered pricing model for sizes and types of organizations (universities and corporations) based on some simple, transparent and publicly reported criteria, such as annual revenue or budget.

- Option 3. Either option 1 or 2 but institutions that are members of a partner organization (Internet2 or some other partner) receive a discount on membership costs in InCommon.

- Option 4. Multi-institutional discount. If a single entity will organize a group of members and function as the trusted point of contact for the group in billing and administration we should provide discounts that make this appealing.

- Should fees cap the number of IdPs per organization? We currently discourage IdP proliferation by allowing only 1 IdP per org per annual fee allotment. Universities may register more than 1 IdP for an additional annual fee.

- Should fees cap the number of SPs (services) registered per organization or not? Currently, an Org may register up to 20 services per annual fee, then 20 more for additional fees.

- Work is done in verifying the ownership of domain names within each registered IdP or SP's metadata. We want to encourage proliferation and use while recognizing variable costs.

Fees for Service Providers

- Non-profit service providers should be charged the same rate as higher education members (recognizing they may not be eligible for some discounts).

- Service providers should be allowed and encouraged to market the benefits of using InCommon to other universities that are InCommon participants or considering joining InCommon.

- Government Agencies, who benefit substantially by federating with university identity providers who must provide high level-of-assurance credentials, should also pay to benefit from participation in the federation.

Other revenues

- Silver and other services will require additional "à la carte" fees, beyond the basic annual fee tiers.

- Funding partnerships with other organizations that have an interest in the success of InCommon and in federated identity management.

- InCommon should license its logo to service providers for marketing efforts.

InCommon Production Support Costs

- InCommon needs to be a high-quality production service. This will require additional costs. We should look at the best way to manage these costs through partnerships and outsourcing.

    - Scaling support to work with members. We should anticipate that we need at least one contract administrator for every "N" participants and grow staffing as we grow participants.

    - Moving to a 7 by 24 support desk. Can this be outsourced?

    - Providing support for the setup and installation of Shibboleth, can partners be identified to work with institutions?

    - Providing training and documentation on setting up an Identity Management system and populating the necessary metadata, can partners be identified to work with institutions (e.g. Banner, Kuali, Datatel,etc).

    - Providing software support and maintenance for critical pieces of the community code base, such as Shibboleth.

Staffing InCommon

- InCommon has been run more as an experimental offering than as a robust production service. As InCommon becomes critical to new business services we need to make sure we grow staffing to be robust.

- Partnerships and outsourcing some work can be helpful in reducing the need for additional full-time staff.

- Some additional staff are necessary to support day-to-day management and meet the needs of additional members that will be coming.

  - The challenge for InCommon is that the effort expended on a new member is greatest in the period when they are joining and must get the contracts signed. Over the 18 months we should make certain this area is staffed appropriately.

Planned Growth

Year	Number of Participants	Notes
2005	12	
2006	41	YOY Growth=242%
2007	72	YOY Growth=76%
2008	124	YOY Growth=72%
2009E	196	YOY Growth Estimate=58%: Actual Q1 growth = 18 18x4 quarters = 72 (estimated growth rate for 2009)
2010E	294	YOY Growth Estimate = 50% (Tapering estimate. Network effect will continue high growth rates.)
2011E	426	YOY Growth Estimate = 45%
2012E	597	YOY Growth Estimate = 40%

Growth in Membership

- We see growth increasing at high rate till we hit 600 participants.

All InCommon Participants
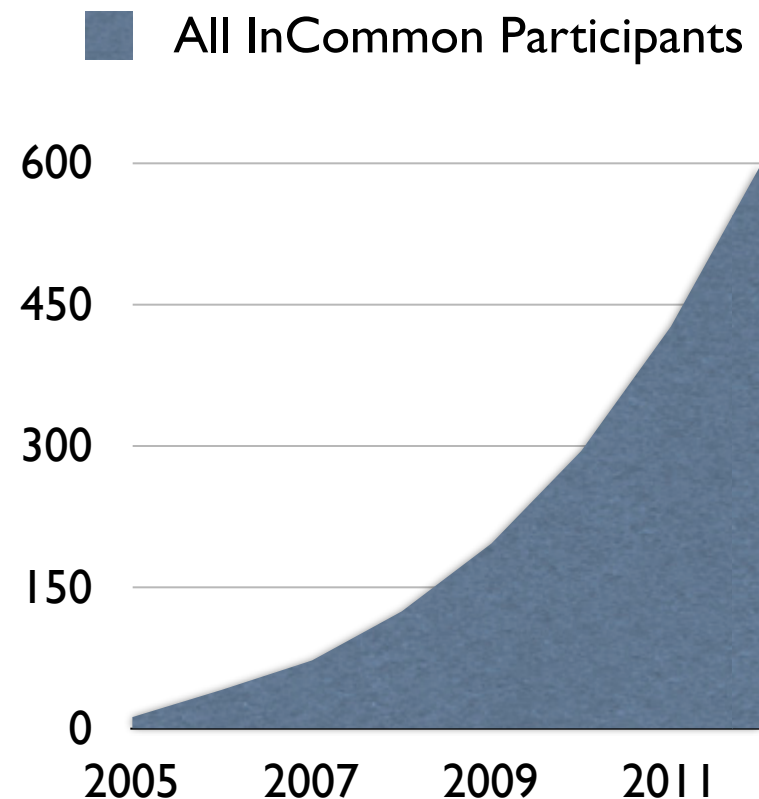
Estimated Costs in 2010

draft

- Staffing and support for a 300 member organization at the end of 2010 is likely to require 10 full-time staff -- estimate $750,000.

- Technical infrastructure - $100,000

- Production support (helpdesk) - $50,000

- Research and Development -$200,000.

- Administrative support (30%)

- Estimated total costs would run $1,250,000

- Finely tuned costs will be dependent on number and scope of services and activities

Fee Structure

- Our fee structure should be focused on breaking even in 2011. To do this we would need to generate revenue of approximately 1 million dollars assuming we borrow money for R&D.

- Assuming 300 members would mean an *average* price of about $3500 per participant.

- With the economic situation we may need to phase in the cost increase from $1000 to $3500 for existing members over a two year window, possibly raising fees to $2200 in 2010 and $3500 in 2011. Another possibility is to affect a tiered pricing model as mentioned.

- Future growth beyond 300 should help support fixed costs significantly, once the base organization is in place. This might require us to rethink whether 2010 or 2011 should be our first break-even year and set up a line of credit with Internet2.

Organizational Structure

Executive Director	Technical Director	Operations Manager	Business Manager	Outreach & Community Director
x FTE	x FTE	x FTE	x FTE	x FTE

Sys Admins	Registration Authority	Community Fly Wheels
x FTE	x FTE	x FTE

Developer	Accounting, Legal	Writer/Web Master
x FTE	x FTE	x FTE

Note: The number of staff and the combinations of these roles is dependent on the scale and scope of InCommon's Services and activity set.

InCommon Executive Director

To meet its goals and serve its community in an emerging, undeveloped market, InCommon must undertake many activities at the executive level: engagement with potential participants, current participants, the federal government, other national federations, and peers in the identity world, strategic planning and budgeting, organization of the community, etc.

InCommon Technical Director

InCommon depends on maintaining high-quality, high-value technical services in a volatile, still-emerging industry. A technical director is needed to be responsible for ensuring services meet community needs, that developing standards and software vendors are aligned and interoperable, and InCommon is forward-looking so opportunities may be seized and community interests served with significant influence.

InCommon Operations Manager

- Establish security and reliability of internal infrastructure

- Support of continuously improving software, services, and community standards (e.g., improved metadata flexibility, support of changing standards and practices, interoperability challenges, etc.)

- Technical support: testing and troubleshooting support for participants

InCommon Business and Business-Development Manager

Business manager will be responsible for all legal agreements, accounting and finance, business continuity, and the registration authority (verifying organizations and their designated officers)

Business development staff will need to work with individual prospective members who need assistance identifying consultants, test facilities, etc.

InCommon Outreach and Community Director

The community of university-based volunteers and staff are critical to InCommon's continued success. Outreach and community organizing will continue to be needed as core to InCommon's progress with partners, software vendors, technical policies, campus stake holder groups (libraries, registrars, research offices, administration, etc.). Key also is marketing InCommon for increased adoption, and helping participants market the federated approach of identity and access management individually and collectively. Training and technical documentation may also be included.