Choosing an Organization Structure

There are myriad ecosystem organization structures that can be deployed, so it helps to look at a few and explore some of the unique characteristics, benefits and challenges among them.

The framework shown below is a good way to structure the conversation about the nature of the ecosystem being considered. In practice, that framework categories can and will overlap and evolve. The defining characteristics shown should be viewed as a starting point rather than as hard definition.

Primary Ecosystem Characteristic: **Shared Problem to Solve**

> **Consortium of Peers:** Each party is more or less equal in terms of the utility they receive from the solution, and how much data, time and money they contribute. Examples: Trade finance settlement.
>
> **Supply Chain:** Each party plays a different role across a shared ecosystem with different utility, value and cost. Examples: Tracking prescription drugs, digital advertising.

Primary Ecosystem Characteristic: **Initiated by Benefactor**

> **Not For Profit:** Organizations whose charter prioritizes distribution of benefits over generation of revenue. Able to invest time and money into systems without the same expectation of financial ROI and competitive advantage as for-profit organizations. Examples: Healthcare, philanthropic foundations, government, public/private organizations

Primary Ecosystem Characteristic: **Directed Solution**

> **Business Network:** Dominant industry player(s) uses their position to drive adoption of an ecosystem among network participants. Participants can't afford to opt out of participation. Examples: Auto manufacturer supply chain, financial networks
>
> **Internal Enterprise:** Company mandates use of system by employees, devices and partners. Examples: Password less access, vertically integrated healthcare network

Consortium of Peers

TBD

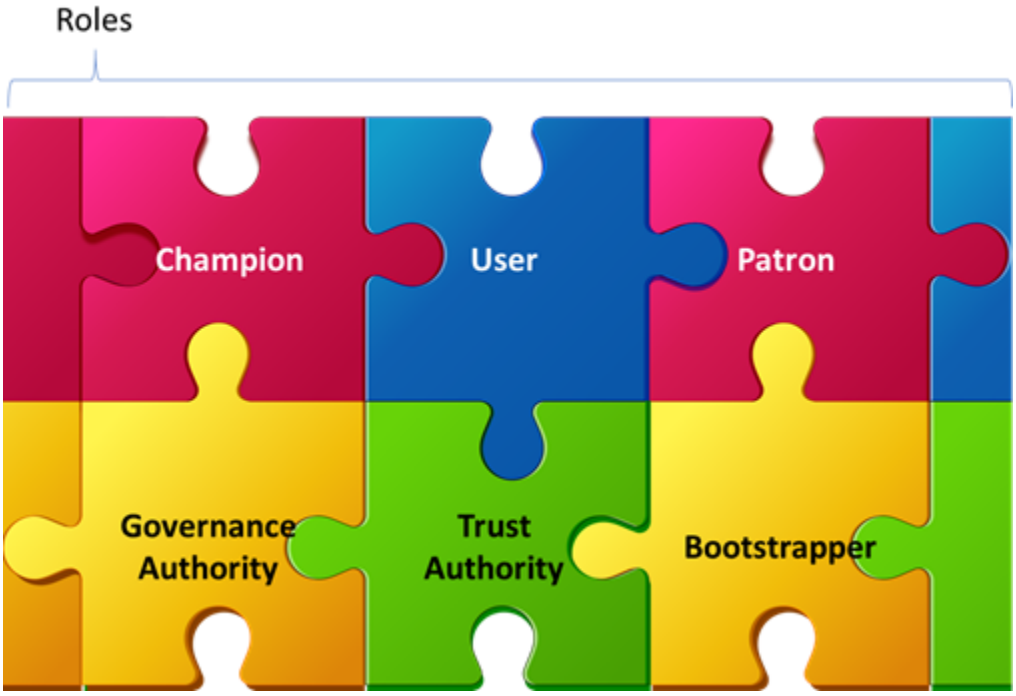
Supply Chain

TBD

Not-For-Profit

Governments are a special type of not-for-profit in that they inhabit the unique position of broadly serving the population they represent and are able to encourage beneficial social agendas and other goals through the tools of investment, sponsorship and legislation. They are also uniquely already in the business of identifying and proofing a great number of people and institutions within their jurisdiction. They generally represent the 'gold standard' for basic identity which is ultimately the foundation for literally everything that can transact across a ToIP ecosystem.

There are many roles a government can and should play within an ecosystem intended to serve its citizens. The roles, responsibility and level of commitment will evolve throughout the lifecycle of the ecosystem, so it is reasonable to think about each role not just in terms of what, but also in terms of when and how much.



Government as ecosystem champion: If the desire to implement an ecosystem originates with the government it is therefore natural that this role be core to everything that will transpire. 'Championing' the ecosystem will look different throughout the lifecycle phases. Early on being a more all-encompassing role, later taking on a more targeted approach.

Government as ecosystem user: In the early growth days, the government should play the role of lighthouse user in order to educate potential participants by example, demonstrate the value that can be realized through participation and educate the ecosystem community by way of real-world pressure testing. As the ecosystem begins to mature, the government in the role of a large user, can both provide a level of stability to the community and potentially act as a significant customer to vendors and service providers. These actions are in addition to the direct benefits realized from the use cases employed by the government at-large to drive specific social goals.

Government as ecosystem patron: As a patron, the government is in a position to invest various amounts and types of resources to build momentum across the ecosystem. They can also use patronage during later phases to jumpstart innovation initiatives and support important activities when faced with unforeseen challenges.

Government as governance authority: As the top level of trusted entities within a jurisdiction, the government, willingly or unwillingly must take ownership in defining certain rules of engagement. Public companies, trade associations, international groups, etc. will also establish rules of engagement within their own domains, but there are several key issues related to the ecosystem that the government should give strong consideration to proactively taking ownership of:

- Liability rules associated with the issuance, processing and transmission of credentials
- Authority and authorization to demand presentation of certain credentials
- Trust assurance standards for: public identity, public licenses, public health, etc.
- Rules pertaining to vertically integrated use cases (use cases that require controls, or a chain of authorization from issuance through verification) involving public health, inclusion, diversity and commerce

- Rules pertaining to discovery and access by law enforcement

Government as Authoritative Issuer/Trust Authority: Ideally, the government won't be the exclusive source for trusted identity, but initially they are the gold standard for the population at large and have significant infrastructure in place to keep identity current. The government should continue to provide free basic identity credentials to everyone in their jurisdiction. The government however should not attempt to be the definitive source for all use cases. The concept of identity is becoming increasingly rich and is the compilation of a lifetime of recorded interactions and authoritative claims. By this definition of identity, the data principle, not any third party, should always retain control of their information.

For credentials other than identity, the government must continue to act as a trusted authority when appropriate. Licensing is a good example. A business license is meaningful only if issued by the government or by an authorized agent of the government. The license is also meaningful only so long as the government remains a trusted authority.

Government as bootstrapper: The government is in a unique and highly leveraged position to seed the ecosystem with identity, create an operable (issuer, holder, verifier) ecosystem, then open it up to private and government organizations to innovate on top of. This, along with vision and purpose, is a rare combination event that will enable this ecosystem which derives value from scale to be bootstrapped at scale very early in its existence.

There are many different models available for collaboration in establishing a digital identity initiative. Given the nature of the government being a crucial Authoritative Issuer for foundational identity for both people and corporations the government needs to be an active player. Many private sector networks feel that the complete digital identity can reside solely in a private sector context - but this is to be avoided. Leaders at the Trust Over IP Foundation disagree - government plays a crucial role in establishing a digital identity ecosystem. The role of government is at least as a peer participant. In some areas government must lead - though that role will likely fall under regulatory and policy cover, and not require all costs to be borne by the government.

Given the crucial need for the government to be an Authoritative Issuer for key identity credentials, permits, and licenses the Trust Over IP Foundation recommends that a government be a full member of any network - thus a public/private partnership of some kind is likely to be the best fit.

Infrastructure: The core of an identity ecosystem is built on top of internet infrastructure and is by design decentralized. The advantage being that large amounts of infrastructure rollout is not necessary. Maintaining a set of interoperable distributed ledger(s) – the so-called layer-1 'utility' layer however is one such infrastructure requirement. The government is well suited to take a direct role in establishing this as a public benefit and ensuring its long-term stability.

A ledger network that is sponsored by a government could use the same approach as the Sovrin Network and/or Bedrock. In both of these organizations Stewards run nodes and are selected from various industries and jurisdictions to provide global coverage. The Sovrin Network, run by the Sovrin Foundation, aims to have nodes run in many industries (big business, tech, universities, NGOS, etc.) and locales (all major continents covered). Bedrock is aimed at big business and has Stewards that reflect that. In the case of a government supported network government could run nodes alongside key providers (banking, telecom, universities, NGOs, etc.) that reflect the needs of the government.

Standards: As a standards setting body the Trust Over IP Foundation recommends strong involvement of the government in the development and use of standards.

This area is one of the least visible ecosystem activities. Nevertheless, this is an area where the incentives for private entities to define common technical standards often reflect public sector requirements and regulations.

Trust over IP is an example of this: an organization whose mandate is to define an architecture for Internet-scale digital trust, doing so in a way that is open and extensible and that allows for multiple, often competing, participants to work together towards a common goal. Similar organizations exist for defining and managing standards for the Internet (World Wide Web Consortium, Internet Engineering Task Force), industry (Canadian Standards Association), food (Codex Alimentarius), supply chain (GS1), and many more.

Many of the standards that these associations develop are done at the behest of their members, but they also do so in response to legal and regulatory requirements. For example, in the United States, the Drug Supply Chain Security Act (DSCSA) "outlines steps to build an electronic, interoperable system to identify and trace certain prescription drugs as they are distributed in the United States".

In response to this, industry has come together, under the umbrella of GS1 US, to figure out how best to apply existing supply chain identification and traceability standards to the Act[1].

Similarly, Canadian industry worked with GS1 Canada to develop identification and traceability standards for food traceability, resulting in the Canadian Food Traceability Data Standard[2].

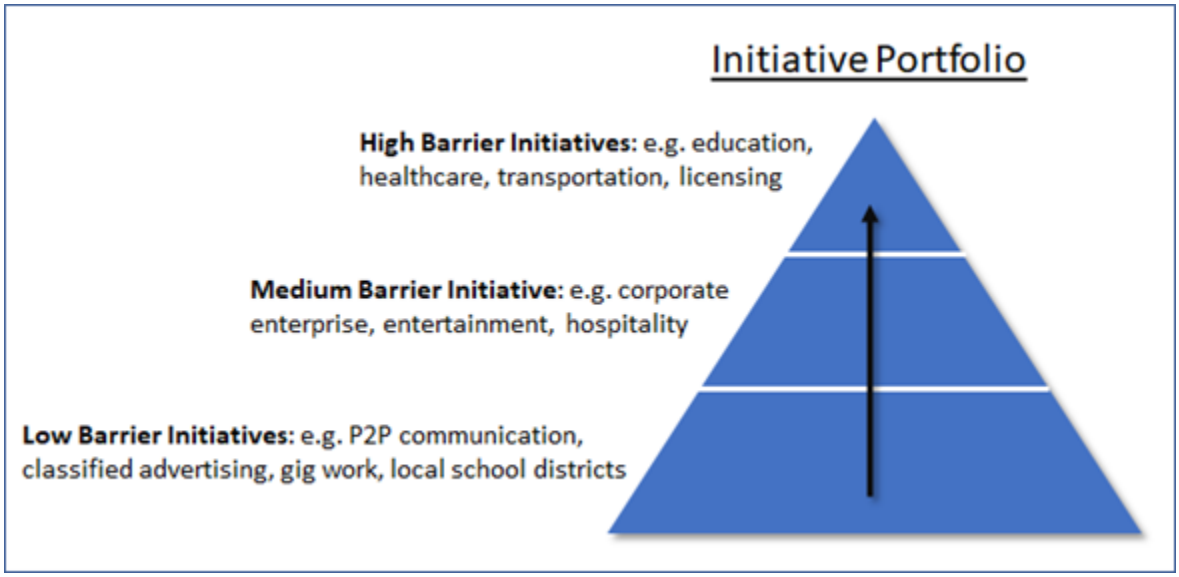
Better collaboration in the area of regulation and standards development, therefore, is worth exploring.

Further, a directed outcome approach, where the government publishes regulations, backed by formal requirements and performance goals, is a significant enabler of standards development.

Public / Private Collaboration: A collaborative model in which industry experts, backed by government funding and supported by government representatives with appropriate project management expertise, can work to meet well-defined requirements put forward by the government, stands the best chance of success by bringing in the appropriate industry knowledge while ensuring that the project is on track and aligned with the government's goals.

A government sponsored ecosystem would be operational at large network scale, through targeted investment could function at low cost to participants and would exhibit high identity trust but low utility – creating a vacuum for innovators to fill. This creates fertile ground and a level playing field for enterprising individuals and organizations to innovate on top of.

The government should take a portfolio approach that targets groups of high barrier initiatives, medium barrier initiatives and low barrier initiatives to attract a vibrant mix of participants and use cases. Each group will require a different approach and level of involvement from the government.



Regional workshops co-sponsored by software vendors might be a great outreach program to encourage low barrier initiatives to flourish. At the other end of the spectrum, the government

might need legislative change to enable licensing use cases, privacy protections or assumptions of liability.

Encouraging a healthy vendor and services industry as well as interoperability standards should also be high on the agenda. Working closely with industry to define or adopt interoperability standards, either formal or de-facto is very important in maturing the ecosystem and encouraging broad participation from large and small organizations alike.

Where the public sector maintains a clear focus on creating value for citizens and setting the rules of the game, through policy and regulation, the private sector will be able to drive innovation and respond to market dynamics as they emerge.

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[1] https://www.gs1us.org/industries/healthcare/standards-in-use/pharmaceutical

[2] https://gs1ca.org/can-trace/