Internet Ecosystem: Naming and addressing, shared global services and operations, and open standards development.

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Abstract

This paper offers a brief introduction to some of the Internet organizations and processes that shape naming and addressing, shared global services and operations, and open standards development in the Internet ecosystem. It looks at many of the key organizations and processes that shape Internet policy, with a focus on how any interested stakeholder can get involved in their work. It is not exhaustive; nor does it cover all aspects in detail. It is recommended that readers use this document as a starting point in their exploration of the Internet ecosystem, its players and policy processes. Extensive hyperlinked references are provided throughout to assist anyone seeking deeper understanding or involvement.Please look at the Full Paper here: http://www.internetsociety.org/sites/default/files/bp_Internet%20Ecosystem_020514_en.pdf

Document

(FULL VERSION OF THIS PAPER IS ATTACHED)

Introduction

This paper offers a brief introduction to some of the Internet organizations and processes that shape naming and addressing, shared global services and operations, and open standards development in the Internet ecosystem. It builds on the Internet Society's well-

received graphic: The Internet Ecosystem:

http://www.internetsociety.org/sites/default/files/bp_Internet%20Ecosystem_020514_en.pdf

This paper looks at many of the key organizations and processes that shape Internet policy, with a focus on how any interested stakeholder can get involved in their work. It is not exhaustive; nor does it cover all aspects in detail. It is recommended that readers use this document as a starting point in their exploration of the Internet ecosystem, its players and policy processes. Extensive hyperlinked references are provided throughout to assist anyone seeking deeper understanding or involvement.

As a discussion paper, “Exploring the Internet Ecosystem” will remain a work in progress. Readers who wish to suggest improvements are invited to send suggestions to the Internet Society at isoc@isoc.org.

The importance of Participation

A diverse set of players has shaped the Internet and continues to contribute to its future success. Yet the Internet is not a static thing. Since it was established as a research network more than 40 years ago, it has evolved from a small government-run network of researchers to a network of networks that is the cornerstone for the global economy and an indispensable tool for individuals worldwide.

These phenomenal changes pose significant challenges for policy processes and actors in the Internet policy field. The organizations and processes that shape Internet policy have proven to be resilient and adaptable in large part because they have assumed that change is a constant and because they recognize that the best solutions to new issues that arise stem from willing collaboration between informed stakeholders.

The Internet Society encourages all stakeholders to become involved in the policy and standardization processes that support the ongoing evolution of the Internet and the equally evolving management of Internet resources.

Within the Internet ecosystem, various organizations have responsibilities for the protocols and standards that enable basic end-to-end communications (such as the Internet Protocol); the resources that direct these communications (such as IP addresses and the Domain Name System); the provision of reliable connectivity that ensures the communications reach their intended destinations, thus linking end-users (such as global telecommunication, satellite and cable system operators, Internet Exchange Points, etc.); and the policies, frameworks and educational activities necessary to ensure the Internet’s openness, continuity and flexibility.

These technologies, resources and services are all highly interdependent and require a significant amount of coordination. The organizations responsible for standardization, coordination, administration and day-to-day management in the Internet sphere include the IETF, ICANN, the IANA function, the RIRs, and many others that will be touched upon in this paper. Each organization has a specific role and provides fundamental value to the

overall functioning of the Internet.

These organizations have a proven, long-standing relationship with one another in coordinating the technical infrastructure of the Internet and have contributed to its incredible growth and stability. They make use of well-established mechanisms, including open, public meetings, mailing lists and bottom-up policy development processes that enable direct participation by any interested party. This way of working ensures that policies are defined by those who require them for their operations. It also gives the system the flexibility to respond and adapt to the Internet's rapidly evolving technology and to the changing needs of the Internet community. It has resulted in the creation of a significant body of knowledge and experience in the successful administration and management of the technologies, resources and services that make the Internet the success it is today.

The development, governance and coordination of the Internet result from discussions, debates and policy development processes in many specialized forums. Active participation by end users, governments, business, civil society and technical experts (whether as individuals or organizational representatives) is essential to make the policies, approve the procedures and write the standards, etc., that make the Internet the efficient and effective system it is today.

The Internet Society is pleased to offer this guide to the Internet stakeholders, their policy processes and participation mechanisms related to naming and addressing, shared global services and operations and open standards development within the Internet Ecosystem. It is hoped that this paper helps encourage and facilitate participation in these important areas of Internet policy development.

The Internet Ecosystem

Figure 1. Internet Ecosystem (attached)

Internet ecosystem is the term used to describe the organizations and communities that have organically evolved to guide the operation and development of the technologies and infrastructure that comprise the global Internet. These organizations share common values and a shared commitment to the open development of the Internet.

The term Internet ecosystem implies a Darwinian evolution focusing on the rapid and continued development and adoption of Internet technologies and which is characterized by the involvement of a broad range of actors; open, transparent, and collaborative processes; and the use of products and infrastructure with dispersed ownership and control.

Organizations that comprise the Internet Ecosystem include:

- Technical standards bodies such as the Internet Engineering Task Force (IETF), the World Wide Web Consortium (W3C), and the Institute of Electrical and Electronic Engineers (IEEE)
- Organizations that manage resources for global naming and addressing capabilities such as the Internet Corporation for Assigned Names and Numbers (ICANN), including its operation of the Internet Assigned Numbers Authority (IANA) function, Regional Internet Registries (RIR), and Doman Name Registries and Registrars
- Companies that provide network infrastructure services such as Domain Name Service (DNS) providers, network operators, cloud and content delivery network providers, and Internet Exchange Points (IXPs)
- Individuals and Organizations that use the Internet to communicate with each other and offer services and applications, or develop content, and
- Organizations that provide education and build capacity for developing and using Internet technologies, such as multilateral organizations, educational institutions, and governmental agencies.

This paper looks at each component of the Internet ecosystem in turn.