Introduction to the Internet Ecosystem and Its Governance

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OBJECTIVES

1. What is an Internet Ecosystem
2. Characteristics of the Internet
3. Governance of the Internet
What is the Internet and an Ecosystem?

The Internet is a worldwide network of computers, a Networking infrastructure that connects millions of computers together globally, forming a network in which any computer can communicate with any other computer as long as they are both connected to the Internet.

An Ecosystem is the integrated collection of living things and non-living things that, together, create a stable home for life of various kinds.
What is an Internet Ecosystem?

An Internet Ecosystem (IE)

Is an interdependent network that is composed of non-living things (protocols, codes, standards, names, numbers, computers, routers...), and living things (network operators, designers, developers, users, researchers, monitors, governments, civil society, private sector, academia, health care, etc.,) all integrated and working together to ensure that the Internet is functioning properly.
Some Characteristics of the Internet

- One of the most powerful communication tools
- Interdependence
- Public Property
- Transparent
- Open Standards
- Global usage
- Multiple uses
- Rapid growth (As of Sep 2009, there were over 1.7 billion users world-wide, compared to 361 million in 2000, a 380.3% increase, which is 26% of the 6.8 billion est. population)
- IP Addresses are required to connect
The technical hierarchy of the Internet is not a part of this discussion, however, it is important to mention that every machine on the Internet has a unique identifying number, called an IP Address. The IP stands for Internet Protocol, which is the language that computers use to communicate over the Internet.

This is an example of an IP version 4 address:

196.192.81.34
Rapid Growth in Africa

This chart represents the Internet usage growth in Africa from yr 2000 to 2009, from 4.5 mil users to 67.3 mil, representing 1,392.4% increase and it reflects only 6.8% of the African population of (991 million),

Governance of the Internet

Nobody owns the Internet, however, in many aspects it is governed, meaning managed and monitored by various organisations.

There are technical standards, protocols, addresses and names, and expertise in development that must be applied and maintained to ensure effective communication between networks, make the interconnection possible, and to ensure the Internet continues to function.
This governance and coordination is taking place through organisations such as:

| Internet Society (ISOC) is a non-profit organisation to provide leadership in Internet related standards, education, and policy issues that affect the development of the Internet. ISOC is also the organisational home for the groups responsible for Internet infrastructure standards including the Internet Engineering Task Force (IETF) and the Internet Architecture Board (IAB). |
| Internet Corporation for Assigned Names and Numbers (ICANN)/Internet Assigned Numbers Authority (IANA) is a not-for-profit organisation and is responsible for the global coordination of the unique identifier names and numbers required for connecting to the Internet. IANA controls numbers for protocols, the Country Code Top Level Domains, and maintains the global IP address allocations. |
| Regional Internet Registries (RIRs) are non-profit organisations responsible for distributing and managing Internet number resources at regional levels (e.g. AfriNIC, APNIC, ARIN, LACNIC and the RIPE NCC) |
## Governance of the Internet, Cont’

<table>
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<tr>
<th>Organization</th>
<th>Description</th>
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<tr>
<td><strong>World Wide Web Consortium (WC3)</strong></td>
<td>is an international community where member organisations, staff, and the public work together to develop web standards.</td>
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<tr>
<td><strong>Internet Architecture Board (IAB)</strong></td>
<td>is responsible for the architectural oversight of IETF activities and for the management of the IETF protocol parameter registries.</td>
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<tr>
<td><strong>Internet Engineering Steering Group (IESG)</strong></td>
<td>is responsible for technical management of IETF activities and the Internet standards process.</td>
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<tr>
<td><strong>Internet Engineering Task Force (IETF)</strong></td>
<td>is a large open international community of network designers, operators, vendors, and researchers concerned with the evolution of the Internet architecture and the smooth operation of the Internet.</td>
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Governance of the Internet, Cont’

- These organisations operate in a bottom-up, open and transparent manner.

- They coordinate and collaborate with all stakeholders.

- Meetings are held throughout the year that are open to the public and are often attended by governments.

- There are board of directors that are elected by the community and members of the organisations.
Governance of the Internet, Cont’

Meeting reports and financial records are available online.

Some of the organisations, such as the RIRs have Policy Development Processes that are also bottom-up where the community decides on specific policies to be followed in the administration of IP number resources.
The Governance Has Been Effective

Most end users are not aware of the importance of these organisations or their existence; we just want and expect the Internet to work.

The fact that we expect the Internet to work, actually speaks volumes to the effectiveness of its governance to date. However, as the number of Internet users continues to grow at exponential rates and new uses and developments are taking place on the Internet, there are also new challenges in maintaining the stability and security that we have experienced for many years.
So far, most of the governing bodies addressed in this talk are more technical in nature. One other governing body that is important to mention is the Internet Governance Forum (IGF).

IGF has been specifically structured to reflect the living things of the IE with its ‘multi-stakeholder’ model. This global policy making is also based on the bottom-up approach that interconnects governments, private sectors, civil society, academia, and the technical community to address issues that affect all living things of the IE, such as, access, openness, and, security.
Conclusion

This overview was intended to increase your understanding of the Internet Ecosystem and to emphasize that we are all a part of this ecosystem with equal rights to enjoy the many benefits that it has to offer and that we must all work together to ensure its ongoing stability, security, safety and growth.

There are various opportunities for you as governments to participate more effectively in these processes, by attending events organised by these governing organisations, becoming members, supporting related activities, and by participating in public policy discussions.
Conclusion

After all, as only 6.8% of the African population is connected, we must prepare for the continuous and expected exponential growth.

Thank You!