Contribution from ISOC Brazil to the PDP on the "Internet Way of Networking" toolkit

On behalf of the Internet Society Brazil Chapter, we would like to submit the following contribution to the "Policy Development Process" on the Internet Way of Networking toolkit divided into three Sections: Procedures, Critical Properties, and Other Inputs (e.g. Terminology).

Section 1 - Procedures

Although we understand that ISOC procedures set forth that PDPs should be two weeks long, and that for this PDP-IWN ISOC has already extended this period to three weeks, this timeframe is still largely insufficient for an effective participation from members and chapters. The announcement of the PDP itself was embedded within the beginning of this period, without any previous notice and without any previous disclosure of documents. Thus the community had to study the documents, discuss them among their peers, and prepare thoughtful contributions in a very short period of time.

For countries for which English, Spanish and French are not native languages, relevant contributions also depend on translations of the documents. In Brazil, our Chapter undertook an independent effort and managed to translate two of the five documents (the introduction and the main document describing the critical properties) into Portuguese within a very short period of time. For collecting relevant feedback from its members and preparing this contribution to the PDP, the Chapter also called a webinar, for which it invited relevant experts. And we were then left with a few days to prepare this contribution and validate its content with relevant peers. This contribution has taken into consideration the inputs received by our chapter leadership and about 10 active members. It could not be validated with the broader membership due to lack of time.

A larger PDP period, procedures that built in time for translations into other languages, and time for proper mobilization within local membership would have helped us a lot in creating a momentum for rich debate and submitting a more robust contribution. Quality and impact have been undermined for the sake of time constraints, although we do not see urgency on the horizon.

Section 2 - Comments to Critical Properties

2.A) Critical property #1

The title of this property should highlight the non-proprietary nature of the Internet, its architecture and its protocols.

Although the document describing the critical properties clearly indicates that the "common protocol" is the IP, at the network layer, it is widely known that many protocols are required to make the Internet work. BGP is an example of an essential protocol, which allows the Internet to be a "network of networks". The title of this property could better reflect this reality.

So a better title could be "A Non-Proprietary, Accessible Infrastructure with a Common Protocol Suite".

2.B) Critical property #2

The term “building blocks” does not seem to be the most adequate one. Examples of “building blocks” in the document describing the “critical properties” mention supporting different network types, ensuring reliable transport, enabling security, or providing name resolution. But these are all “protocols”, as the concrete examples in footnote #3 of the document. The Google Maps API is also mentioned, but, for our understanding, this should not be accepted as an example of “building block”, as this API is outside the scope of the “critical properties”. Furthermore, any complex software or system nowadays is made of reusable, interoperable “building blocks”, as this is an essential paradigm of Software Engineering. Therefore, the fact that the Internet, as other complex systems, also relies on reusable and interoperable “building blocks” does not differentiate the Internet.

A more accurate title that uniquely characterizes the Internet should mention “protocols”, instead of “building blocks”. But the fact that the Internet relies on a common set of protocols is already highlighted in the first critical property. Maybe the title of this second property could emphasize the layered nature of the Internet instead.

As another possibility, the permissionless innovation aspect of the Internet could be emphasized, as this directly relates to its “open” nature, already highlighted in the title of this critical property. An alternative title for the property could be then “An Open Architecture Supporting Permissionless Innovation”.

2.C) Critical property #3

Besides being a single and distributed routing protocol, BGP has two properties that are essential for its effective behavior as the “glue” between the many sub-networks that compose the Internet, which are its dynamic and self-configurable natures.

As the title of another critical property (#2) already takes into consideration these types of “additional properties” (namely that building blocks are “reusable” and “interoperable”), then also the title of critical property #3 could be extended with essential additional properties of the BGP protocol.

Therefore, a more accurate title for this property could be “Decentralized Management and a Single, Dynamic and Self-Configurable Distributed Routing System”.

2.D) Critical property #5

Critical property #5 sparked the most vivid discussion among ISOC Brazil members. Is this “property” of the same nature as the four preceding ones? Given its broad umbrella potential, it has even been suggested that it could be removed, as this “property” could be presented otherwise in the document as an overarching concept. On the other hand, if this critical property #5 is kept, there were many suggestions regarding its possible rephrasing.

- “Permissionless innovation” could be emphasized in the title of the property, as the property expresses the fact that the Internet is open to any new type of application or service and the users decide which innovation will survive, in a “Darwinian evolution” approach.
- As essential properties that come together with its “general-purpose” nature, the Internet is neutral regarding applications and services and uses a best-effort approach to carry packets. A possible alternative title would express “A Neutral and General-Purpose Network”, or even “A Neutral and Best-Effort Oriented Network”.
- Another way for expressing the fact that the Internet is not oriented towards specific applications or services, the title could express “A Network with No Favorites”. As an additional bonus, this title would also express the fact that the Internet is also “open” to innovation in its many layers. We could even think of merging critical properties #2 and #5, expressing “An Open Network with No Favorites”.

2.E) Other critical properties

It has been suggested that the “end-to-end communication” nature of the Internet is not directly implied by any of the five proposed critical properties, and is even independent from each of them. This feature is also strongly related to the basic approach of pushing intelligence to the edges of the Internet, even if a few exceptions exist for specific reasons (firewalls, for security, or CDNs, for performance in accessing large volumes of data).

It has been also suggested that the “collaborative” approach to the development of the Internet should be emphasized as a critical property, as this is at the core of the IETF processes and permeates all architectural features and critical properties of the Internet.

Section 3 - Other Inputs

3.A) On the terminology

The term "critical properties" may not be a good choice to describe Internet's “architectural features” or “architectural fundamentals". Usually, when speaking about the Internet, one thinks of “properties” such as resiliency, reliability, trustworthiness, security, performance, even neutrality (see Section 3.B below). The five “critical properties” in fact describe essential architectural features (or design options) of the Internet. We, therefore, suggest that a term like “architectural fundamentals”, or even “critical architectural fundamentals”, is adopted.

As for the use of the expression "use case", despite the fact that we understand it is intended to make reference to the "use of the toolkit", several participants highlighted that it might generate confusion (especially for members of the technical community). "Use cases" generally refer to different possible ways of implementing Internet technologies, and the Internet Society might give the wrong impression regarding "Routing in China", for instance.

3.B) On the toolkit

Although the ISOC Brazil members think the toolkit is of great relevance and offers a very useful narrative for advocacy efforts, it has been suggested that the toolkit does not cover issues that are essential for Internet users, permeate most of the current discussions on new public policies and legislation, and relate to the “properties” users of all types (from individual users to application and service providers) expect from the Internet, namely resiliency, reliability, trustworthiness, security, performance, even neutrality and privacy. Internet users and policy makers are not in fact usually worried about features of the Internet infrastructure, such as the IP and BGP protocols.

Therefore, to make the toolkit narrative more appropriate as an advocacy tool, it could include a third type of document, besides the critical properties and the use cases, namely a document describing in which way the “critical properties” (or “architectural fundamentals”, as suggested in Section 3.A of this contribution) are related to the “properties” the users perceive or expect. Do the “critical properties” help us fulfill the “properties” users expect, such as resiliency, security, and trust?

3.C) Local experiences that support the "critical properties"

While not all Chapter members have been supportive of the term "case studies", there was a large consensus that the Brazilian experience provides proof points for the "good regulation" in capturing and addressing those "critical properties". As good examples raised by our members, we mention the process of shaping the 10 principles for the Internet (issued by CGI.br in 2009) and the legislative debate in the development of the "Marco Civil da Internet (Brazilian Internet BIll of Rights, signed in 2014) - some counterexamples, however, include the Draft Bill of Fake News, currently under discussion at the Brazilian Parliament.

In the case this is to be pursued, the Brazilian Chapter would need more clear goals from ISOC in order to mobilize its members into drafting a proper complementary opinion to this contribution.