



IGF 2022 Policy Network
Internet Fragmentation

IGF 2022

Policy Network on Internet Fragmentation

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Executive Summary

Introduction

Internet fragmentation is a complex issue. The many views, diverse opinions, different conceptualisations and definitions of what is and what is not internet fragmentation, or what fragmentation - in the context of the UN Secretary General's Our Common Agenda - should be avoided or addressed can hinder an open and inclusive dialogue, and discussions on common guidelines or principles.

The proposal for a Policy Network on Internet Fragmentation (PNIF) was born out of a community initiative launched by a multistakeholder coalition of civil society, business and technical community organizations in 2021 to raise awareness of the technical, policy, legal and regulatory measures and actions that pose a risk to the open, interconnected and interoperable Internet. The IGF Multistakeholder Advisory Group (MAG) confirmed Internet fragmentation as topic for an IGF intersessional activity that aims to offer a systematic and comprehensive framework, complemented by case studies, to define Internet fragmentation, its causes, and its potential effects and it aims to establish recommendations or codes of conduct that prevent fragmentation. The PNIF proposal envisaged a two-year work plan with focus in its initial year on establishing a systematic and comprehensive framework to define Internet fragmentation, its intended and unintended causes, and its potential effects.

Towards a Framework for Discussing Internet Fragmentation

The PNIF webinars and discussions confirmed the diversity of opinions, and an attempt to deduct a common definition of internet fragmentation via a survey launched earlier in the year didn't prove successful. Through the discussions, however, emerged elements of a framework that could serve to guide and orient future discussions.

The draft framework for discussing internet fragmentation constructed by the PNIF was shared with the community ahead of and discussed during a PNIF session at the IGF annual meeting in Addis Ababa. The aim is to have a refined and more mature framework ready for a second phase of the PNIF, focused on identifying potential causes of fragmentation and defining solutions and policy approaches to avoid fragmentation.

A Framework for Discussing Internet Fragmentation

The overall goal of the framework is to serve as a general guiding and orienting tool for continuing the dialogue about fragmentation and bringing in more people and stakeholders. The framework should allow a more holistic and inclusive debate, and at the same time, create space for focused discussion and work towards concrete solutions, policy approaches and guidelines.

The Framework that emerged from the PNIF discussions conceptualises three key dimensions of fragmentation:

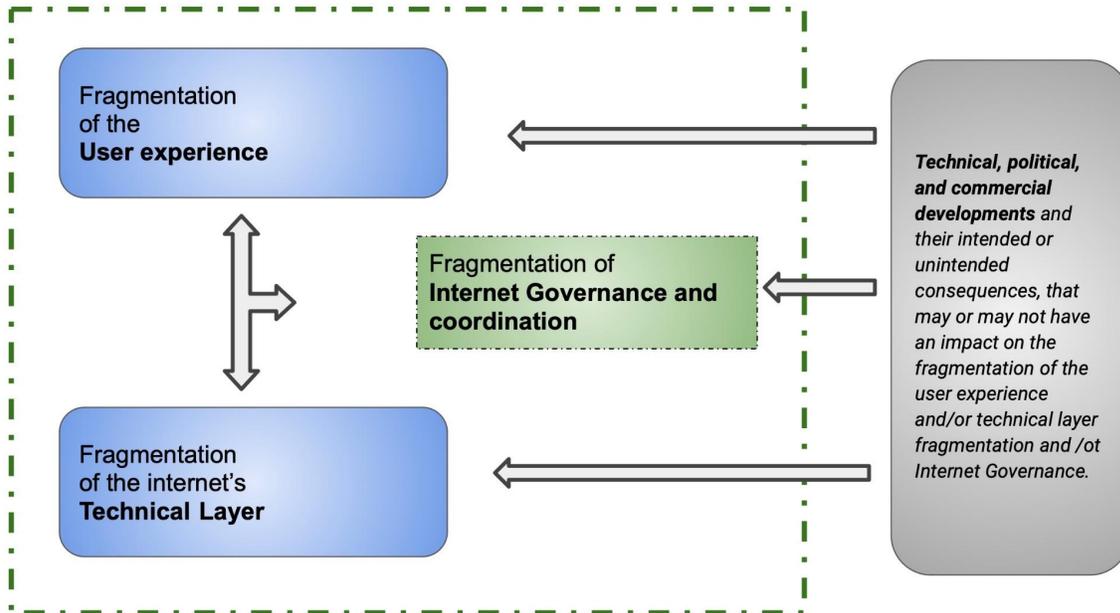
- ***fragmentation of the user experience,***
- ***fragmentation of the Internet's technical layer,*** and
- ***fragmentation of Internet Governance & coordination.***

The Framework indicates that **technical, political and commercial developments** and their intended or unintended consequences may or may not have an impact on fragmentation.

The Framework captures potential **relationships and overlap** between the dimensions, between technical fragmentation, user experience fragmentation, as well as governance fragmentation.

The **Human rights framework** and the need to maintain a **free flow of data** could be used to evaluate measures that impact the user experience and assess if the measures enhance the user experience or have a negative impact and as such should be avoided. The **interoperability of the global internet infrastructure** is proposed as reference framework to assess technical fragmentation. The internet governance dimension aims to capture the commitment to the **Multistakeholder management** of the technical layer of the internet and the existence or lack of a **global framework** across multilateral and multistakeholder venues, governments and stakeholders **to address global internet policy issues** from a human rights and free flow of data perspective.

Draft PNIF framework for discussing fragmentation



In a next phase, it is the PNIF's intention to populate the framework with concrete examples and facilitate focused dialogues on policy approaches and explore guidelines to avoid internet fragmentation.

1. Introduction

The Internet Governance Forum, convened by the United Nations Secretary-General, is the global multistakeholder platform facilitating the discussions of public policy issues pertaining to the internet. As part of its mandate¹ the IGF facilitates the exchange of information and best practices, strengthens and enhances the engagement of stakeholders in existing and future Internet governance mechanisms, particularly from developing countries, as well as to develop capacity.

To better respond to its mandated objectives, the IGF intersessional work takes the form of Policy Networks (PN), as multistakeholder efforts that provide in-depth expert view on broad Internet governance topics of global population's interest. Policy Networks are facilitated by a multistakeholder working group of experts² and operate based on open, inclusive, bottom-up community consultation.

The IGF Multistakeholder Advisory Group (MAG) selected the proposal³ for a Policy Network on Internet Fragmentation (PNIF) as one of the two policy networks of the IGF 2022 intersessional programme.

The PNIF proposal was born out of a community initiative⁴ by a multistakeholder coalition of civil society, business and technical community organisations in 2021 to raise awareness of the technical, policy, legal and regulatory measures and actions that pose a risk to the open, interconnected and interoperable Internet.

The objectives of the PNIF are to (1) offer a systematic and comprehensive *framework to define Internet fragmentation*, its intended and unintended causes, and its potential effects; (2) collect and analyse *case studies* to fine-tune and complement this framework; (3) establish *shared principles, recommendations* or codes of conduct that prevent fragmentation and preserve the open, interconnected and interoperable nature of the Internet.

The PNIF proposal envisaged a two-year cycle, with 2022 focused on developing the framework and collecting case studies (to build a solid conception of fragmentation), and with the view to resubmit a proposal to continue in 2023 with a focus on recommendations and codes of conduct for different stakeholder groups to address fragmentation.

¹ <https://www.intgovforum.org/en/about>

² <https://www.intgovforum.org/en/content/pnif-multistakeholder-working-group>

³ https://www.intgovforum.org/en/filedepot_download/251/20909

⁴ <https://www.gp-digital.org/an-open-interconnected-and-interoperable-internet-joint-letter/>

2. Exploring the topic - overview of the PNIF discussions

In recent years, technical, legislative and policy developments have furthered the risk that the Internet fragments into siloed parts. These developments include bans or restrictions on international data flows, interference with free expression, privacy, and/or encryption; and Internet shutdowns. These developments may pose a threat to the open, interconnected and interoperable Internet, along with its associated benefits to social and economic development, while also harming human rights. Internet fragmentation can take place at various segments and functions of the Internet, any of which can prevent an open, interconnected and interoperable Internet.

Internet fragmentation is a complex issue. There are many views, diverse opinions, different conceptualisations and definitions of what is and what is not internet fragmentation, or what fragmentation - in the context of the UN Secretary General's Our Common Agenda⁵ - should be avoided or addressed. While internet fragmentation has been and is being discussed in different places by different stakeholders, there is limited progress in establishing an open and inclusive dialogue on common understanding, guidelines or principles.

Backbone of the PNIF's effort to explore the topic Internet fragmentation are two 90 minute webinars organised in September and October. The webinars were structured in such a way that they stimulated open discussion and input from the participants. The aim of the webinars was to gain insight in the different views and understandings of internet fragmentation in the community. Both webinars were structured around three questions. Pre-identified discussants from different stakeholder groups were invited to share brief initial thoughts followed by an open debate involving all participants.

The first webinar titled '*What does Internet fragmentation mean to you? Identifying fragmentation and key stakeholders.*' learned that the open, interoperable internet that respects human rights and allows for critical access is an ideal that hasn't been achieved before but is at risk of being undermined even more. Severe fragmentation - which can be caused by technical, governmental, or commercial practices - might cause malfunctioning or breaking of the internet. Participants also discussed how a layered approach to internet fragmentation must

⁵ <https://www.un.org/en/content/common-agenda-report/>

acknowledge the layer-specific governance mechanisms, actors and consensus building mechanisms. A detailed summary of the webinar is included in the annexes.

The second webinar started with an open roundtable discussion during which participants were invited to review often cited examples and case studies and assess whether, in their opinion, they should be retained or not as examples of Internet fragmentation. This exercise also produced a list of additional examples and arguments. The webinar further had an initial discussion - without diving into substance - on what kind of common principles and policy approaches may be instrumental to avoid Internet fragmentation, and what role multilateral and multistakeholder spaces, including the IGF should play. A detailed summary of the webinar is included in the annexes.

In addition to the webinars, the PNIF had a survey open on the IGF webpage where people could submit feedback and suggestions for how to approach the topic.⁶

The two webinars, the survey, and discussions on the PNIF mailing list confirmed that there are a lot of different views on fragmentation. However, there was also the observation that there are two ‘buckets of manifestations’ people refer to when talking about fragmentation: *fragmentation of the user experience* and control over information flows, that is resulting in a completely different user experience depending from where one is accessing or not able to access; or *technical layer fragmentation* where there are a lot of potential threats to the technical layer or the internet, which are not necessarily manifesting at present. In addition several people raised a looming *fragmentation of internet governance*. These ‘buckets’ became the main instances of the *PNIF Framework for discussing Internet fragmentation* that was further refined during a PNIF working session. A summary of this working meeting is included in the annexes.

The PNIF’s draft Framework for discussing Internet fragmentation is unpack in the next section of this report.

⁶ PNIF survey -

<https://docs.google.com/spreadsheets/d/1wyfHXbrlIWg8h15Kiof1Jv2WlUS-cdwICUDgdKWoB24/edit?usp=sharing>

3. PNIF Draft Framework for discussing Internet fragmentation

3.1. Towards a PNIF framework for discussing fragmentation

3.1.1. Introduction

Internet fragmentation is a complex issue. The many views, diverse opinions, different conceptualisations and definitions of what is and what is not internet fragmentation, or what fragmentation - in the context of the UN Secretary General's Our Common Agenda - should be avoided or addressed can hinder an open and inclusive dialogue, and discussions on common guidelines or principles.

The PNIF webinars and discussions⁷ confirmed this diversity of opinions, and an attempt to deduct a common definition of internet fragmentation via a survey launched earlier in the year hasn't been successful. Through the discussions, however, emerged elements of a framework that could serve to guide and orient future discussions.

The draft framework for discussing internet fragmentation constructed in this document is unfinished. It will be discussed at the PNIF session during the upcoming IGF meeting, and remains open for comment. The aim is to have a refined and more mature framework ready for the second phase of the PNIF in 2023, focused on identifying potential causes of fragmentation and defining solutions and policy approaches to avoid fragmentation.

3.1.2. Purpose of the framework

The overall goal of the framework is to serve as a general guiding and orienting tool for continuing the dialogue about fragmentation and bringing in more people and stakeholders. The framework should allow a more holistic and inclusive debate, and at the same time, create

⁷ Recordings and summaries at <https://www.intgovforum.org/en/content/policy-network-on-internet-fragmentation>

space for focused discussion and work towards concrete solutions, policy approaches and guidelines.

3.1.3. Overview of the draft framework

The elements of the draft framework emerged during the PNIF webinars and subsequent working session. The PNIF is seeking community feedback on its draft framework during the IGF meeting or via the feedback form at <https://forms.gle/f1C7fP3QWuoJ715q9>.

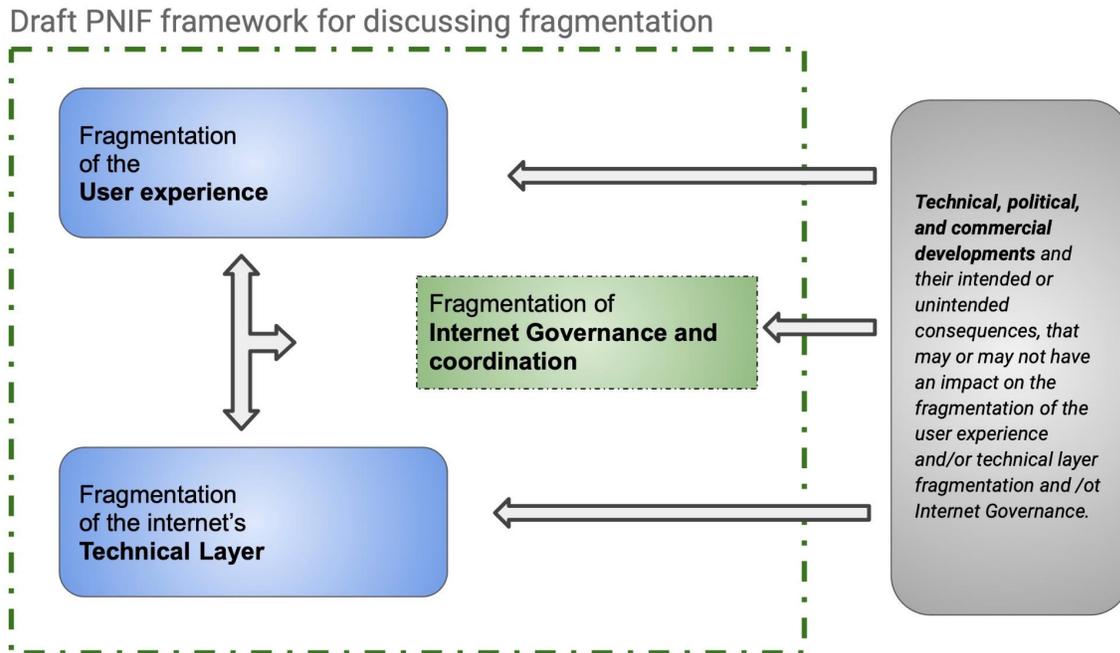
The draft Framework that emerged from the PNIF discussions conceptualises three key dimensions of fragmentation:

- *fragmentation of the user experience,*
- *fragmentation of the Internet's technical layer,* and
- *fragmentation of Internet Governance & coordination.*

The Framework indicates that **technical, political and commercial developments** and their intended or unintended consequences may or may not have an impact on fragmentation.

The Framework captures potential **relationships and overlap** between the dimensions, between technical fragmentation, user experience fragmentation, as well as governance fragmentation.

This year the PNIF is focussing on conceptualising the framework, to then next year populate the framework with concrete examples and facilitate focused dialogues on policy approaches and explore guidelines to avoid internet fragmentation.



3.1.4 Unpacking the draft framework

This section unpacks the draft framework and provides an overview of the current state of the discussions.

I. Fragmentation of the User Experience

Conceptualisation

Fragmentation that results in a different user experience of the Internet, depending on where one is accessing from (or not accessing).

Fragmentation with regard to the user experience can result from

- not having effective or affordable access* to infrastructure;
- interventions by states (e.g. blocking, shutdowns, censorship);
- or corporations (content control, walled gardens, etc.).

(*intended are differences in access among internet users; it was argued that the divide between the unconnected and those connected to the internet should not be considered internet fragmentation)

Reference framework to assess fragmentation

The Human rights framework and need to maintain a **free flow of data** could be used to evaluate measures that impact the user experience and assess if the measures enhance the user experience or have a negative impact and as such should be avoided.

Potential overlap and links with other dimensions of fragmentation

- Potential *link with technical layer fragmentation* when a continued disruption of the access to the free flow of data (e.g. because of blocking or filtering) leads to creation of alternative and separate applications and services that constitute separate ecosystems not interoperable with the internet.

Comments

- Important to understand and map the concrete measure-specific impact on fragmentation of the user experience;
- Some issues related to fragmentation of the user experience are already being discussed and addressed as issues relating to access in other venues, and so the specific nature of how these issues relate to/map onto the issue of internet fragmentation should be further explored

II. Fragmentation of the Internet's Technical layer

Conceptualisation

Fragmentation that challenges the interoperability of the internet

Fragmentation of the technical layer that makes the internet work caused by

- Interference with the public core* of the internet.
- The creation of 'national internets' limited within geographic borders;
- Routing of internet traffic via the private infrastructure by big tech companies.

(*the public core is not universally defined)

Reference framework to assess fragmentation

The interoperability of the global internet infrastructure.

Comments

- It is important to differentiate between the fragmentation that has a negative impact on the interoperability on the transport layer and existing decentralisation in the organisation of the internet infrastructure (e.g. related to the management of the IP address space or the Domain Name System).

III. Fragmentation of the Internet Governance and Coordination

Conceptualisation

Fragmentation of Internet Governance and Coordination that manifests through

- a changing commitment to the Multistakeholder management of the technical layer of the Internet;
- a lack of a global commitment and framework across multilateral and multistakeholder venues, governments and stakeholders to address global internet policy issues from a human rights and free flow of data perspective.

Reference framework to assess fragmentation

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Potential impact on other dimensions of fragmentation

- Fragmentation of multistakeholder governance (i.e. competition or duplication between standards bodies like IETF or ETSI) can drive fragmentation at the technical layer (competing alternative protocols for transport security for example)

Comments

- Policy makers should refrain from intervening in the technical layer of the internet to advance their own objectives. When developing policy or regulation they should aim at

strengthening the multistakeholder governance model of the internet and protecting key characteristics of the internet's technical layer.

4. Initial Feedback - PNIF session at IGF 2022

The PNIF published a *Draft framework & discussion document*⁸ ahead of the IGF meeting in Addis Ababa and organised a session⁹ as part of the official schedule of the 17th annual IGF meeting. The session was used to hold a townhall discussion on internet fragmentation, present and unpack the draft framework, and invite the audience to suggest next steps for the framework and PNIF.

Overall the draft framework was well received and some participants noted that the draft framework already helped them to structure thoughts when following other discussions on Internet fragmentation during the IGF meeting.

Some participants had concrete suggestions to further complete and refine the framework, had concrete questions, or pointed at relations between the elements of the framework. At the end of the session participants were invited to submit further feedback on the draft framework online.

A summary of the session is included in the annexe.

5. Next steps

The PNIF proposal envisaged a two-year cycle, with 2022 focused on developing the framework and collecting case studies (to build a solid conception of fragmentation), and with the view to resubmit a proposal to continue in 2023 with a focus on recommendations and codes of conduct for different stakeholder groups to address fragmentation.

⁸ https://www.intgovforum.org/en/filedepot_download/256/23770

⁹ PNIF Session at IGF2022, 30 November 2022, Addis Ababa, Ethiopia & remote <https://www.intgovforum.org/en/content/igf-2022-pn-internet-fragmentation>

It is suggested to approach this work in three parallel work streams, to further unpack, fine-tune and complete the framework's elements - fragmentation of the user experience, fragmentation of the Internet's technical layer, and fragmentation of Internet governance and coordination - based on the feedback received at and after the IGF meeting. The work streams will need to clarify what fragmentation poses risks and should be avoided, and move into discussing practices, guidelines and principles to address or prevent fragmentation.

Annexes

PNIF Webinar 1 - What does internet fragmentation mean to you ? Identifying fragmentation and key stakeholders. Summary.

PNIF Webinar 2 - What can be done about Internet fragmentation and who should be doing what? Summary.

PNIF Working session - Refining the draft framework for discussing Internet fragmentation. Summary.

PNIF session at IGF 2022. Summary.

PNIF Webinar 1 - What does internet fragmentation mean to you ?

Identifying fragmentation and key stakeholders.

15 September 2022

Meeting recording <https://youtu.be/dhVaovkSq0o>

Highlights

- The PNIF aims to further multistakeholder discussion on Internet fragmentation - the concept, causes and effects - and explore ways to address fragmentation.
- A fragmented internet is an internet that is not the interoperable single internet we have today. The open, interoperable internet that respects human rights and allows for critical access is an ideal that hasn't been achieved before but is at risk of being undermined even more. The internet has never been not fragmented. Varying levels of fragmentation are consistent with the internet's development. However, there are concerns that severe fragmentation might cause malfunctioning or breaking of the internet.
- Fragmentation can be caused by technical, governmental, or commercial practices. Controlling what people can say and see online and legitimate attempts to address harms associated with internet use are driving forces behind policies that (intended or unintended) lead to internet fragmentation. IPv4/IPv6 is a cautionary tale and shows the time and effort needed to manage fragmentation caused by incompatible technical protocols.
- Some questioning of the unifying discourse defending open and inclusive, multistakeholder and human rights oriented internet governance underpinning an open and interoperable internet could be a sign of a looming fragmentation or multi-polarisation of internet governance.
- The narrative of fragmentation is becoming a mainstream narrative in international relations, and risks replacing the narrative of an ideal open interoperable inclusive neutral internet, and security issues and international competition policy issues are added into the fragmentation discourse, increasing pressure for localisation policies and competition policies connected to localisation. This worrying evolution may impact multilateral cooperation and the involvement of states in the multistakeholder model.
- Both multilateral and multistakeholder spaces are relevant and the multilateral system could react by agreeing on minimal denominators. Limiting collaboration to like-minded trusted nations that share similar values, might lead to a discrimination and affect the connectivity of people living in those countries. Human rights or climate change frameworks can provide lessons on how the international community coordinates actions around common minimal denominators.

- Any layered approach to internet fragmentation must acknowledge the layer-specific governance mechanisms, actors and consensus building mechanisms. It is important to focus on the critical properties of the internet and how they are affected and the availability of alternatives should be considered when assessing fragmentation and prioritising action.
- The GDC is an opportunity to insert certain common principles all stakeholders agree about. Of equal importance is the need for further and more precise discussion about fragmentation, practices and what should or shouldn't be done, including a dialogue with policy makers on how legitimate goals can be achieved without interfering with the internet's interoperability.

Introduction - IGF Policy Network on Internet Fragmentation

The Policy Network on Internet Fragmentation (PNIF) is an intersessional activity of the Internet Governance Forum (IGF), ahead of the 17th annual meeting of the IGF from 28 November to 2 December in Addis Ababa, Ethiopia.

The PNIF was set up to further multistakeholder discussion on Internet fragmentation and offer understanding of what Internet fragmentation is, of its causes and effects, and explore ways to address fragmentation. Avoiding fragmentation of the Internet is one of the *complex digital issues* the UN Secretary-General, in his report *Our Common Agenda*, recommends addressing in a Global Digital Compact.

Internet fragmentation is being discussed in different places by different stakeholders. The IGF as a unique space and multistakeholder platform allows opening the conversation and bringing in different perspectives. The PNIF is open to all interested stakeholders. Its activities are steered by a Multistakeholder Working Group of experts and led by two Co-facilitators, supported by the IGF Secretariat.

Webinar 1 - What does internet fragmentation mean to you ? - Identifying fragmentation and key stakeholders.

This report summarises the first of two webinars organised by the Policy Network on Internet Fragmentation (PNIF). The webinar aimed at gaining insight in how the concept of internet fragmentation is understood and used in different ways, and identifying key stakeholders. The first webinar is intended to lay a basis for further discussion about mitigating and avoiding fragmentation.

The webinar was structured in three thematic blocs (1) examples of fragmentation and definitions; (2) impact of fragmentation on the Internet; (3) how to respond and what kind actions can avoid fragmentation. For each section pre-defined discussants were invited to share initial thoughts, followed by an open discussion.

The summary paraphrases the main thoughts as expressed during the webinar. A recording of the meeting is available at <https://youtu.be/dhVaovkSq0o> .

(1) Internet Fragmentation: Examples, definitions and concepts

Discussion moderator: Ms Sheetal Kumar.

Discussants: Ms Allie Funk, Mr Konstantinos Komaitis.

Questions: There are different ways to approach, define and classify fragmentation and for policy makers it is important to understand concerns. What are examples where technical, commercial or policy measures lead to fragmentation of the Internet? How does this measure or practice lead to fragmentation (i.e. what layer does it affect)? Why are these examples of concern? How does this impact people's experience with the Internet? What are further-reaching impacts, e.g. on society?

Ms Sheetal Kumar opened the first discussion round by stating that although the term internet fragmentation is being used frequently, there is no common definition or shared understanding of what internet fragmentation is, and invited participants to share, with examples, what they see as internet fragmentation.

Ms Allie Funk, Research director for technology and democracy at Freedom House, noted that the variety in concepts of fragmentation adds nuance and creates possibilities for policy responses. Freedom House, concerned about issues related to cross border data transfer, surveillance and censorship, meaning it may analyse fragmentation differently than stakeholders focussing on the fragmentation of the technical underpinnings of the internet because it isn't as focused on internet architecture.

Government policies and practices might be driving the fragmentation of the global internet and creating so-called 'domestic networks' or networks that are more easily controlled. The intentions why governments pursue these policies can be situated on a spectrum between (control of what information is available and what people can see and post, control of the flow of information and data traffic within a country and flowing in and out of a country) and addressing online harms (disinformation, harassment).

However, applying a strict dichotomy is not helpful, other intentions might be interwoven, governments are not monolithic, and well intentioned laws and measures can include provisions that make them problematic. For example, attempts to create a more diverse online environment and incentivise diversity across and accountability of platforms and big tech may include provisions that increase surveillance or censorship.

Data localisation requirements and increased censorship are recent trends that impact human rights. The EU GDPR started a race to the top for data protections that incentivised countries around the world to pass data protection laws and align with adequacy agreements in order to get the benefits of cross-border data flows. However, data protection laws may include provisions that require **data localisation** and data storage on local servers, which makes the data more accessible to law enforcement and security agencies, and is problematic if there are no safeguards for due process or strong independent judiciary.

Censorship policies and internet shutdowns, including blocking of websites and blogs based abroad and foreign news outlets, prevent collecting information and evidence during elections or protests (for example by journalists and activists), cut off communities from information available abroad and prevent sharing information to form transborder solidarity. They are forms of fragmentation that impact free speech and human rights.

Mr Konstantinos Komaitis, Independent consultant and researcher, commented that the loaded and widely used concept ‘internet fragmentation’ asks for synchronisation and mutual understanding of what is being discussed.

Policies, globally, even in democracies, intentionally or unintentionally contribute to fragmentation. Internet fragmentation is no longer the condensed term used to point at actions and policies by a few countries (e.g. China, Russia were taking actions that were showing elements of fragmentation).

There are three categories of fragmentation - technical, governmental, or commercial - depending on the type of practice or measure that causes the fragmentation. Its occurrence can provoke reactions leading to more fragmentation across categories. For example ‘walled gardens’, a form of commercial fragmentation, create a concentration of power which can provoke governments to react with policies that create fragmentation as well.

Technical fragmentation = conditions that impede the infrastructure from efficiently interoperating and exchanging data as is designed. For example, IPv4 / IPv6 incompatibility, routing corruption or blocking of domain names or entire TLDs. Also the creation of alternative DNS routes raises concerns, but whether they lead to fragmentation depends on design and implementation.

Governmental fragmentation = government policies that restrict, limit or interfere with information exchanges. For example, Internet shutdowns, social media restrictions, data localisation laws, efforts to force browsers to recognise qualified websites based on certain identification certificates.

Commercial fragmentation = commercial practices that prevent or constraint people’s internet experience. For example, market concentration and walled gardens that create closed systems in which users operate, app stores in a walled garden environment, single points of infrastructure failure (e.g. the impact when an important global provider is down).

Open discussion and feedback

Ms Anriette Esterhuysen commented that the Internet has never been not fragmented. Walled gardens, censorship and attempts to control are not new phenomena. Also the typical discourse on fragmentation does not reflect the situation of those who lack connectivity, lack devices, and have no access to affordable data. There are and have been small efforts to fragment bits of the internet, but overall technically the internet has proven to be very robust.

The layered model may not be the best suitable framework to approach internet fragmentation. It can be more helpful to focus on the interaction/interplay between fragmentation driven by policy considerations or ideology (ie fragmentation introduced through regulatory responses and controls) and fragmentation at the technical level. Asking why there is an emphasis on fragmentation and how this discourse of fragmentation has become so prominent recently are relevant questions.

The current discourse reveals a concerning trend towards ‘internet governance fragmentation’ and a diminishing support for the notion of inclusive internet governance and multistakeholder collaborative policy making. There are signs of a growing polarisation around particular visions of what a unified unfragmented internet is. For example, the Declaration on the Future of the Internet promotes one particular vision of internet and internet policy, treating other visions as leading to fragmentation. This ideological polarising discourse risks to produce and reproduce fragmentation by itself.

The unifying discourse defending an open and inclusive internet governance that is multistakeholder and human rights oriented seems to diminish, while it could play a similar role as the human rights discourse that focuses on bringing together and reinforcing the idea of the universality of human rights.

Mr Chris Buckridge made the observation that putting qualitatively different things under the same label fragmentation and the notion of opposite to good for the internet - different parties use the term to point at what they fight against - makes building consensus difficult. This doesn't imply that there should be a preference or importance of some issues over the other, but putting them all in the same bucket leads to discussions where everyone is defending the own definition of fragmentation.

IPv4/IPv6 is a cautionary tale, an example of how it takes internet operators decades to manage the fragmentation caused by two incompatible protocols. While the transition in a way, this and the need to find ways to work around it, has made the internet a less usable tool. Nevertheless, technical advances have continued to progress the internet.

Fragmentation is not binary - the internet is not either fragmented or not fragmented. There are levels and degrees of fragmentation. New things fragment what ideally should be a more cohesive and unified internet and make things more difficult, however, this is consistent with the development of the internet and does not necessarily mean its end.

The key question - certainly from a technical perspective - is how to make the internet work for as many people as possible, people in different situations, with different equipment, different levels of connectivity, an internet that can facilitate as much and easy as possible communication between whoever has an IP address.

Mr Veni Markovski noted that in the current context of the interoperable single internet (of networks that use the same internet protocols and DNS) fragmentation means an internet that is no longer single and interoperable. When people talk about fragmentation, it is important to first understand what they mean and at what level they see this fragmentation, and if what they understand as fragmentation is at the level of not having the interoperable single internet.

Mr Madhavan Pallan saw similarities between the internet fragmentation discussion and discussions in the context of machine learning and data sharing. Regardless of the context, it is important to understand why some suggest abandoning existing systems, services or practices.

Mr Raul Echeberria commented that the word fragmentation is well chosen as it describes something that is broken. If the internet continues to fragment, it ultimately will break, and thus, fragmentation should be considered as something bad.

Overall, governments and policy makers lack a good understanding of how the internet works and underestimate the complexity of blocking or filtering content. Policy measures that instruct content filtering may oblige actors responsible for different components of the network to take different measures which together may cause malfunctioning or breaking of the network.

(2) Internet Fragmentation: Challenges and Impact on the different layers of the internet

Discussion moderator: Ms Timea Suto.

Discussants: Ms Farzaneh Badii, Mr Kevin Kohler.

Question: What challenges are happening in the different layers of the internet ? Which parts or layers of the Internet are facing the greatest threat?

Ms Timea Suto moderated the second discussion on the impact of fragmentation, and on whether its focus should be on *where* fragmentation occurs (layered approach) or on the *actors* whose actions might cause fragmentation, as suggested in the previous discussion.

A layered approach, as mentioned in the PNIF proposal, differentiates between challenges happening in the different layers of the internet. For example, changes at infrastructure level that impede systems to work together (technical/backbone layer), physical changes in the network or access layer that prevent people from meaningfully connecting or the internet to function properly, or in the content or application layer, measures, policies and actions that prevent users from using or accessing certain platforms and services.

Ms Farzaneh Badii, founder of Digital Medusa, said that preserving the global and interoperable internet so that everyone, indiscriminately, can have access to the internet regardless nationality, gender, etc., is the key reason for having a conversation on fragmentation.

Territorialisation of the internet is not compatible with the vision of global access to the internet. This is access to services online, as well as - as the Internet Society defines - access to the essential or critical properties of the internet (e.g. IP addresses). Lack of access to the internet only because of a lack of physical infrastructure should not be considered as a form of internet fragmentation. Assessments should take into account the availability of alternatives. If there are no alternatives - e.g. in the case of access to IP addresses - no access is possible. Another example are barriers preventing or limiting IXPs to exchange traffic. There are various levels of diminished access, and not having access to the critical internet properties among the most extreme. The internet governance organisations have managed to preserve the access to the critical properties.

Recent measures and sanctions - not related to the internet - may hinder the allocation of new IP addresses to certain countries. Fortunately, already allocated IP address blocks have not been confiscated, but this situation must be monitored.

Recent developments - such as the Declaration on the Future of the Internet - where states, driven by good intentions to preserve the open and interoperable internet, limit collaboration to like-minded trusted nations, might lead to discrimination and affect the connectivity of people living in states that don't share the same values. It is important that the international community makes sure that there is minimal accesses to the internet, also for people living in authoritarian countries like Afghanistan

Mr Kevin Kohler, Senior Researcher at the Center for Security Studies (CSS) at ETH Zurich, prefers limiting the use of fragmentation to the context of connectivity restrictions, intentional, permanent or semi-permanent, imposed by nation states to get more control over the information on the content

layer. For example, shutdowns, firewalls, deep packet inspection. Investing in a national DNS root and domain space, could, instead, be driven by concerns of getting disconnected. The evolution at the layer of network and technologies is rather a dynamic of bifurcation and a clash of ecosystems, not individual nations trying to have more domestic control.

For example, theoretically, a future with 200 national DNS roots or 200 different firewalls, it is easier to imagine than 200 chip suppliers working with their own different standards.

Open discussion and feedback

Mr Sivasubramanian Muthusamy asked what organisations managing the internet's core infrastructure could do to prevent or fix fragmentation. In a reaction, *Mr Veni Markovski* stressed the importance of supporting the multistakeholder model for internet governance and of remaining alert for potential top-down changes to this model.

Mr Marek Blachut added that, if a layered framework of internet fragmentation is developed, it is important to take into account the governance dimension across the different layers. Each of the technology based layers have different policy mechanisms with institutions such as ICANN, IETF, and other standard setting bodies, and also the IGF, all of which play a role in promoting consensus and shared approaches. The health and effectiveness of these organisations and institutions at the global level, and cooperation with national level institutions and regulators, can prevent or seal around fragmentation. However, these institutions are at risk of being ignored when the behaviour of stakeholders or other external circumstances lead to organisations being undermined or abused.

(3) Internet Fragmentation: What kind of response is needed from policymakers and other stakeholders?

Discussion moderator: Ms Sheetal Kumar.

Discussants: Ms Carolina Hippolito vor der Weid, Ms Anriette Esterhuysen.

Question: What kind of response is needed from policymakers and other stakeholders? Who should be doing what? What are the possible actions required of different stakeholders (Governments, Private sector, Technical community, Academia, Civil Society, International Treaty Organisations)? What kind of guiding principles are needed?

Ms Sheetal Kumar invited participants to make use of the third discussion to brainstorm what kind of response can help to avoid internet fragmentation and what action could be expected from the different stakeholders.

Ms Carolina Hippolito vor der Weid, Head of the Digital Affairs Division of the Ministry of Foreign Affairs in Brazil, stressed the importance of the question of internet fragmentation against the context of ongoing and forthcoming discussions on Our Common Agenda, the Global Digital Compact, and the 2025 WISIS Review.

The narrative of fragmentation becomes a mainstream narrative in international relations, and replaces the narrative of an ideal open interoperable inclusive neutral internet. On top of that, some important actors add security issues and international competition policy issues into the fragmentation discourse, increasing pressure for localisation policies and competition policies connected to localisation. This

worrying evolution may impact multilateral cooperation and the involvement of states in the multistakeholder model.

The multilateral system, until today, hasn't been able to effectively address issues around fragmentation, and the IGF, while being a brilliant place for discussions and expert exchanges, is lacking the weight to do so. The fact that the multilateral system hasn't been able to address these issues might have contributed to the current situation where governments legislate territoriality effects and, as such, may induce more fragmentation. Agreeing on a common denominator would provide some safeguards to avoid more drastical fragmentation in the operational layers.

The authority on internet public policy remains with the governments, hence governments and the multilateral system are relevant and should be effectively on board. It can be valuable to look at how the international community addresses issues - unrelated to the internet - that require better coordination and policy. Climate and environmental issues, for example, have been on the agenda since the 60ies and 70ies, and since the 90ies have been gradually addressed at the international level through conferences and making commitments. The climate and environmental example learns us the importance of having a common minimal denominator.

Ms Anriette Esterhuysen, Senior Advisor APC, Internet Governance, pointed out that while there is some consensus around the issue of fragmentation, agreeing on how to move forward is more complex.

There is a vacuum when it comes to principles to adhere to, build on, and work with in multilateral and multistakeholder spaces. The GCSC's principle on the Public Core of the internet, for example, is powerful but should be complemented by a shared common understanding of what is meant with 'public core' (interoperability?, the Internet Protocol?) developed through further discussion in multistakeholder and multilateral spaces. This lack of consensus, at a principal and normative level, makes it difficult to move forward because it is not clear what should be protected as public and cannot be fragmented. The fragmentation discussion could learn from how norms and principles on human rights serve as a powerful base and give states the responsibility to nationally uphold principles that were made globally/internationally.

Existing norms packages, such as the UN Norms of responsible state behaviour in cyberspace or the NETmundial principles, are not consolidated and socialised across multilateral and multistakeholder spaces.

Both the multilateral and multistakeholder approach is needed. Discussions should move away from polarising between both models and focus on inclusive governance and policy making. (Both models can be used or abused at any level, one can have non inclusive multilateral as well as non inclusive multistakeholder spaces). It is possible to have national- or regional-level internet policy and regulation and a global interconnected non-fragmented internet. Governments must be persuaded to refrain from regulating the internet in a way that fragments, and to respect global norms of interoperability as well as global norms of human rights and freedoms.

The growing number of internet governance institutions and initiatives, each with their own role and responsibility (e.g. ICANN, the Internet Society, the United Nations, multilateral spaces such as the OEWG, the Summit of the Future and the GDC), should focus on building norms and principles that can unify the evolving distributed internet governance system. The GDC could be a powerful starting point, but, as the NETmundial experience shows, it will be as important to continue to move.

Open discussion and feedback

Mr Jorge Cancio advised to define fragmentation and related developments more precisely, and avoid immediate and value intensive condemnation of what might be fragmentation. The internet has become a mirror of society with economic, geopolitical and other policy issues that require regulation (which is per definition state or region based). There is the expectation that policy and lawmakers align with democratic legitimacy principles and respect for human rights. Similarly, regulatory measures on the internet should not interfere with the main aspects of interoperability, of end-to-end communication of the global internet. Awareness among policy makers in some regions is increasing, but the dialogue must continue and stakeholders, in particular the technical community, should show how policy makers can reach their goals without interfering with the interoperability. Such an approach is more promising than dismissing any regulation effort as stupid or coming from people that don't understand the internet.

A more precise and more sophisticated narrative that avoids binary thinking and commits to the multistakeholder approach, still allows suggesting improvements to the multistakeholder model, to make it more inclusive, respectful of diversity, enabling more meaningful participation. In this context the discussions, from around 2018, on a 'regime of immunities', elements of the management of critical internet resources, including elements of the ICANN policy making, that would require some sort of protection, an international framing, where the international community would actively abstain from interfering might be worth revisiting.

Mr Veni Markovski noted that there is a tendency to discuss who is and who should be doing what in the internet ecosystem instead of focussing on defining internet fragmentation.

Ms Sheetal Kumar reacted that a conversation that wants to understand how people see and define fragmentation naturally moves into talking about actions and responsibilities. The webinar, so far, showed that there is some level of agreement about fragmentation being the result of actions (intended or not). This immediately raises the question about the actors behind the actions, and who is doing what in the ecosystem. There is a clear link between the question of what can be done and who is doing what (can take the action). If the aim of the conversation is to identify and agree on solutions, it will be necessary to identify who is and can be doing what.

Mr Pedro de Perdigão Lana added - based on the experience of ISOC Brazil with trying to define the concept of digital sovereignty and fragmentation - that having people and organisations share what they experience as fragmentation is an excellent way to move forward and try to find a common denominator. This common denominator is not about agreeing on the concept itself, but about what can be done to avoid internet fragmentation. Because people understand and use the concept of fragmentation differently - throughout the world and throughout different sectors of society - forcing a unique concept won't work very well. It is more fruitful to start from what everyone is doing.

Ms Anriette Esterhuysen commented that the PNIF effort on the concept of fragmentation is extremely useful but the real challenge remains to understand what we want the internet to be and that we want the internet not to be different in different parts of the world. Building such a common understanding in a global context is extremely difficult as it is interwoven with broader cultural and political views (e.g. regarding the role of the state, the free market).

PNIF Webinar 2 - What can be done about Internet fragmentation and who should be doing what?

27 October 2022

Meeting recording https://youtu.be/kYmFsbD_nWM

Introduction - IGF Policy Network on Internet Fragmentation

The Policy Network on Internet Fragmentation (PNIF) is an intersessional activity of the Internet Governance Forum (IGF), ahead of the 17th annual meeting of the IGF from 28 November to 2 December in Addis Ababa, Ethiopia.

The PNIF was set up to further multistakeholder discussion on Internet fragmentation and offer understanding of what Internet fragmentation is, of its causes and effects, and explore ways to address fragmentation. Avoiding fragmentation of the Internet is one of the *complex digital issues* the UN Secretary-General, in his report *Our Common Agenda*, recommends addressing in a Global Digital Compact.

Internet fragmentation is being discussed in different places by different stakeholders. The IGF as a unique space and multistakeholder platform allows opening the conversation and bringing in different perspectives. The PNIF is open to all interested stakeholders. Its activities are steered by a Multistakeholder Working Group of experts and led by two Co-facilitators, supported by the IGF Secretariat.

This second PNIF webinar builds on the discussion during the earlier webinar titled *What does Internet fragmentation mean to you? Identifying fragmentation and key stakeholders*. ([Summary](#))

Webinar 2 - What can be done about Internet fragmentation, and who should be doing what?

This report summarises the second webinar organised by the Policy Network on Internet Fragmentation (PNIF). The second webinar builds on the discussions of the first webinar ([summary](#)) and aims at bringing stakeholders on the same page.

The discussion was structured in three thematic blocs under the overarching theme *What can be done about Internet fragmentation, and who should be doing what?*: (1) towards common principles all stakeholders can agree about; (2) achieving policy goals without interfering with the Internet's operability; (3) the role of multilateral and multistakeholder spaces, including the IGF. For each section pre-defined discussants were invited to share initial thoughts, followed by an open discussion.

The summary paraphrases the main thoughts as expressed during the webinar. A recording of the meeting is available at https://youtu.be/kYmFsbD_nWM.

Introduction and recap of the first webinar

Ms Sheetal Kumar clarified that one of the aims of the second webinar was to identify key areas where the policy network could work on addressing issues and identifying solutions to commonly identified or agreed concerns.

She highlighted that discussions at the first PNIF webinar had shown that:

- There are a variety of ways in which people conceptualise internet fragmentation;
- There is a desire and need to be more specific and focused in discussions about fragmentation.
- Varying levels of fragmentation are consistent with the internet's development - the internet 'has never been not fragmented'. However, there are concerns that the phenomenon is getting worse and might have an impact on the internet openness and interoperability.
- Inclusive multistakeholder internet governance is inextricably linked with avoiding fragmentation.

Examples of fragmentation and their boundaries - Roundtable discussion setting the scene for webinar 2

Participants to the webinar were invited to share their views on whether three often cited examples of fragmentation - *alternative protocols for the Internet; data localisation measures; and network disruptions* - should be labelled as such.

Alternative protocols for the Internet

- *Yes, an example of fragmentation because ...*
 - It targets internet interoperability and the dominance of the commonly agreed internet protocols.
 - Yes, but only at the waist of the 'hourglass' (internet protocol layer). Alternative protocols on higher layers will not have an impact - also not on lower layers (although having to do a different 'ethernet' would be problematic for roamers.)
- *No, not fragmentation because ...*

Data localization measures

- *Yes, an example of fragmentation because ...*
 - could be considered part of the fragmentation of Internet governance (which could lead to fragmentation at the technical level)
 - If mandatory, perhaps. (if voluntary, not)
 - For those that are affected by it, it fragments the internet (fragmentation of user experience) and impacts the free dataflows.
 - Implementing data localisation requirements (but also privacy, copyright, content moderation, etc. - 'regulatory frameworks') is costly. This may lead to a situation where only larger companies are able to comply, limiting or fragmenting the available choices for the user.

- It depends - national data localization regimes come in various forms and flavours (see recent ISOC study on digital sovereignty) - from being limited to national critical infrastructure to requirement for all personal data to be located locally.
- *No, not fragmentation because ...*
 - It happens beyond/below the Internet technical layer - it does not tackle the common Internet protocols and identifiers.
 - Data localization doesn't lead to loss of interoperability and global connectivity (maybe in the future?)
 - If voluntary, not. (if mandatory, perhaps)

Network disruptions

- *Yes, an example of fragmentation because ...*
- *No, not fragmentation because ...*
 - It happens beyond/below the Internet technical layer
 - Short term shutdowns, not (long term disruptions may become a root cause for fragmentation.)

Other suggestions / feedback

- **Fragmentation of the geopolitical information system / free flow of information and ideas:** fragmentation of perceptions and information flows, which is related to the free flow of ideas and the ability of the communities to engage in a healthy global dialogue. Examples are the global echo chambers (e.g. around the war in Ukraine). There's a risk that this feeds global issues and discussions and exacerbates a level of conflict among nations.
- **Fragmentation of policies:** resulting from a political will in countries to have a say - their own share of control - on a geographical part of the internet.
- **Fragmentation of the internet vs fragmentation of the user experience,** or fragmentation of the internet vs fragmentation of uses of the internet. Regulatory frameworks may impact the choices available for users.
- The term fragmentation is often used as a **label for undesirable behaviour** of the other party. Using fragmentation in such an alarmist and politicised manner contributes to a fragmentation of internet governance.
- Internet fragmentation has become an **umbrella concept** that covers different things, including user experience, policy, accessibility, access to content, network disruption, etc.
- Internet fragmentation is an all-too-encompassing term, but the key is fragmentation that impacts the technical layer of the Internet and leads to **loss of interconnectivity**.
- There is an interplay and **no strict separation between technical coherence of the internet, social and user experience, and political coherence**. It should not be taken for granted that as long as there is TCP/IP, the internet will be unfragmented. Existing measures, increased data localisation, shutdowns, localised approaches to internet infrastructure, etc. can ultimately affect the technical core of the internet.
- A control over information and information flows can damage the multistakeholder model. A damaged multistakeholder model might damage the current governance of the internet's technical layer and risk connectivity and interoperability.

- There is a duality as some steps multilateral organisations are taking, e.g. with regard to root zone servers and the DNS, can potentially have negative effects on the internet's technical layer. However, at the moment this does not challenge the dominance of the Internet protocol on the technical layer.

Towards common principles all stakeholders can agree about

Discussant: Mr John Hughes.

Input from the 1st webinar: *The internet has never been not fragmented and varying levels of fragmentation are consistent with the development of the internet. However severe fragmentation that causes malfunctioning or breaking the internet is inconsistent with the ideal of an open interoperable internet that respects human rights and allows for critical access.*

questions: What are common principles or a common minimal denominator all stakeholders can and should agree about?

Mr John Hughes, Global Head of Geopolitical Public Policy Strategy at Twitter, made the observation that the PNIF, which was initially technically oriented, added the matter of user experience to its discussion. Getting away from the purely technical approach and including practical considerations about what to avoid now and in the future in order to preserve the benefits of the internet for its users (including people, businesses, governments, civil society, etc.) will increase the relevance of the PNIF. From a content delivery perspective, and acknowledging that universal access and connectivity is an essential prerequisite, the following baseline considerations apply :

- 1) The open internet should be global, available to all, built on open standards and the protection of human rights;
- 2) Trust is essential and is based on transparency;
- 3) Privacy protection is key, including human choice and control of the own online experience;
- 4) Competition, choice and innovation have to be protected;
- 5) Content moderation should be more than 'leave up or take down'.

Policy approaches to avoid internet fragmentation

Discussant: Mr Greg Nojeim.

Input from the 1st webinar: Fragmentation can be caused by technical, governmental or commercial practices. There's a need for further and precise discussion about fragmentation, practices and what should or shouldn't be done, including a dialogue on how legitimate goals can be achieved without interfering with the internet's operability.

Questions: What are examples of practices to achieve policy goals that are good alternatives to existing activities that risk to affect the interoperability of the internet?

Mr Greg Nojeim, Senior Counsel & Co-Director of Security and Surveillance Project, Center for Democracy and Technology considers the free flow of data across the internet and the policies that limit it as a relevant framework to discuss internet fragmentation. Policies that lead to fragmentation typically

address compelling societal problems (terrorism, child abuse, disinformation, etc.). Governments will address these problems. The question is to find policy approaches that reach the objectives while avoiding that they cause fragmentation.

The human rights framework is a useful reference to assess if a measure is proportional to the problem or if there are alternatives that have a lesser impact on human rights. It's important to recognize that not all threats to the free flow of data have a negative effect. The optimal approach is the win-win scenario, where the impact on the free flow of data results in an increase in rights of the people whose data is at stake.

Open discussion and feedback

Mr Chris Buckridge noted that the discussion should focus on fragmentation that should be avoided, in line with the priority suggested in the UN Secretary General's Our Common Agenda. He suggested a distinction between fragmentation of dataflows versus fragmentation that jeopardises the possibility of re-establishing data flows because it irreversibly fragments the internet.

Ms Tatiana Tropina commented that some policies that per definition create fragmentation (such as GDPR) may enhance the user experience. She made the observation that digital authoritarianism and digital democracy are making use of the same tools to protect their own survival or to protect the citizens/users. Policy makers that aim to protect the users and enhance user experience should not target the connectivity on the logical/technical layer. Unfortunately, policy makers often do not understand how the internet works.

Role of multilateral and multistakeholder spaces, including the IGF

Discussant: Ms Tatiana Tropina.

Input from the 1st webinar: Both multilateral and multistakeholder spaces are relevant and have their own role to play. That the narrative of fragmentation is becoming mainstream and its discourse interwoven with security and competition concerns is a worrying evolution that may impact multilateral cooperation and the multistakeholder model supporting the open interoperable internet.

Questions: What are priorities for the different stakeholders? What concerns should be addressed where?

Ms Tatiana Tropina, Assistant Professor in Cybersecurity Governance, Institute of Security and Global Affairs, Leiden University, Netherlands, prefers a techno-centric approach that is focused on what to do to preserve the interoperability of the internet. This approach does not necessarily mean preserving existing standards, but rather ensuring that any new standard that is developed is interoperable and widely adopted. Some governments are supportive of an open and interoperable internet, but when it comes to policies they opt for policies that in practice risk to break it (e.g. the EU proposal targeting the DNS and DNS Root Zone).

In multilateral venues, governments that strongly support the multistakeholder governance of the technical layer of the internet should adhere to this commitment. Stakeholders should remind and push them to do so. Secondly, governments keep their commitment to multistakeholder governance. In recent years the commitment to the multistakeholder governance of the technical layer has watered down significantly, and there are signs of a conceptual reframing from 'multistakeholder governance of

the technical layer’ to ‘need for stakeholder engagement in internet governance’. One should be aware of this changing narrative that points at different underlying concepts.

Multistakeholder spaces are well suited to discuss and map all the kinds of issues that are being included under the label fragmentation, for example related to control, user experience, commercial practices, user empowerment, content moderation, human rights issues etc. . Most of these issues are already being discussed and often practices and solutions are available. An overall framework discussing fragmentation needs to take into account this past and ongoing work. Also multilateral venues such as the OEWG, or the Ad Hoc Committee on Cybercrime touch on issues that can be framed as fragmentation - as far as stakeholder input is allowed, stakeholders should keep on pushing for human rights and free flow of information on the internet.

Open discussion and feedback

Ms Anriette Esterhuysen noted that it is worth asking when and why the debate about fragmentation became so prominent. The term emerged from a geopolitical context and is often used in the context of a Northern/Western response to bad policy making in the global South or countries in the East. The concept is easily used by like-minded countries to demonise what not-like-minded countries are doing in internet policy making. This easily distracts the attention from talking about the actual policy challenges and dealing with the problems.

Ms Lynn St Amour suggested that there might be merit in separating the techno-centric discussion on fragmentation from the discussion on fragmentation of the user experience. This may help to pull in more participation from different communities (e.g. from the technical community) in both discussions and allow to work on two fronts. It may also be valuable to evaluate some issues and threats that historically have been pictured as bad and to be avoided, and frame them in a context of trade-offs.

Ms Tatiana Tropina stressed the importance of educating policy makers and explaining the risks and consequences for the interoperability of the internet of certain measures that intend to address legitimate concerns.

Potential outline for PNIF framework on fragmentation

Based on the discussion, *Ms Sheetal Kumar*, proposed to start exploring a framework that has three different parts:

- (1) Fragmentation of the user experience, information flows and control.
- (2) Technical layer fragmentation.
- (3) ‘In-between’ where the technical development of the internet tends to lead to fragmentation of the user experience.

It was noted that a framework should also include institutional policy and governance processes, as diverging approaches to internet policy and governance could in the longer run lead to fragmentation. E.g. if there is a disconnect between the technical interoperability of the internet and how we think and act around it from a public policy perspective. In the long run this can break the user experience and even more.

Next steps

The PNIF will set up a working call to further refine and develop a draft framework to then later take to the IGF meeting to further socialise and discuss. The framework could then serve as a starting point for next year's PNIF work.

PNIF Working session - Refining the draft framework for discussing Internet fragmentation

14 November 2022

Meeting agenda

1. *Welcome and introduction, purpose of the framework.*
2. *Open discussion on the draft PNIF Internet fragmentation framework*
3. *Conclusion and next steps*

Introduction - what we learned from the PNIF discussions and webinars

- There are a lot of different views on fragmentation.
- There are two 'buckets of manifestations' people refer to:
 - Fragmentation of the user experience, control over information flows, that is resulting in a completely different user experience depending from where one is accessing or not able to access.
 - Technical layer fragmentation. There are a lot of potential threats to the technical layer or the internet, which are not necessarily manifesting at present.
- Some identify an in-between bucket of measures that may or may not lead to fragmentation of the user experience or technical layer.
- There's also a fragmentation of internet governance.

A [visualisation of the draft framework](#) was shared.

Guiding questions for the call

Is this framework comprehensive? Useful? What could it achieve?

What should be the main goals of this framework ?

Does this build on existing work?

Discussion on the draft framework for discussing internet fragmentation

Ms Sheetal Kumar explained that the intention is to present a draft framework for working on addressing internet fragmentation at the PNIF session during the IGF meeting. The framework should allow to identify what about fragmentation (or what forms) is bad and should be avoided, and to work - in the context of a follow-up PNIF next year - on providing recommendations and solutions to specific stakeholder groups and policymakers.

Mr Bill Drake commented that establishing a framework for continuing the dialogue and bringing more people in, and outlining a set of questions to the international community for addressing this complex and multifaceted problem is a logical approach. He referred to the 2016 WEF paper he co-authored, which approached the issue in a deductive way, first collecting examples of what people say is fragmentation to then creating different categories. In a way schuh approach was easier to involve more people.

Mr Wim Degezelle noted that one of the purposes of the PNIF is to keep the discussion going and involve more voices. Many discussions on internet fragmentation - including the PNIF discussions so far and the survey - focus on definitions and concepts without working towards solutions. By establishing a conceptual framework rather than a strict definition the PNIF wants to create a place for different views on what fragmentation is, and allow the work on solutions to advance. He further flagged that it is important to the draft framework as a step in the PNIF's 2-year work plan.

Mr Wolfgang Kleinwächter stressed the need to discuss fragmentation within the context of interoperability. The transport layer and application layer are surely interlinked, but thanks to the 'one world, one internet' which today is still the reality for the transport layer, we are able to interconnect. On the applications layer business and governance issues come in (which may reduce interoperability - e.g. walled gardens / national jurisdictions). One basic recommendation that should go out from the IGF is 'Don't touch the technical layer. It is a neutral resource.' On the application layer the recommendation should be 'enhanced cooperation amongst law makers' while for businesses 'work in greater interoperability'.

Mr Sivasubramanian Muthusamy highlighted that there is a long list of issues that have to be discussed, but that one of the key questions is 'who should talk to who'. Discussions should take place at a high level, e.g. governments should talk to governments that cause fragmentation, and the same should happen on the business side.

Mr Chris Buckridge reminded that the upcoming IGF is particularly important as its outputs can feed into the global digital compact process. The framework is a useful starting point for discussing fragmentation, however the 'the in between' as conceptualised so far, isn't particularly useful. While fragmentation of the technical layer is the key issue from an interoperability point of view, the PNIF discussions have made clear that also end user issues need to be looked at. It is crucial, however, to keep focus and avoid duplicating discussions that are already going on elsewhere, for example on access and human rights. The PNIF will need to be distinctive about what it is talking about. With regard to the 3rd dimension - fragmentation of governance and governance discussions - there's a risk of losing the current cohesion and overview of where to address national versus global problems. The three elements of the framework intersect in a complex way - this is what the 'in-between' should express - but this relation is not a 4th kind of fragmentation.

Asked how to conceptualise 'technical layer fragmentation' *Mr Wolfgang Kleinwächter* suggested 'interference with the technical core of the Internet' and *Mr Vittorio Bertola* identified two types of fragmentation at the transport layer: countries having their own national internet and big tech companies routing traffic via their private infrastructure.

Mr Raul Echeberria expressed concern that discussions will lose focus if issues such as affordability are considered as well. The focus should be on avoiding that policy makers and businesses take measures

that could lead to fragmentation. The PNIF should clearly define what it is talking about. Stressing that fragmentation at the technical layer is not happening at the moment may send out a wrong message.

Mr Marek Blachut noted that fragmentation of the technical layer is defined in opposition to fragmentation of the user experience. It is fragmentation of what makes the internet work, of the infrastructure that complements and enables the user experience. It may not be necessary to be too granular or specific on what kind of infrastructure this - it could also be enabling infrastructure, which includes a notion of physical infrastructure.

Ms Sheetal Kumar noted that it might be difficult to move forward towards recommendations without being more specific. She also suggested using challenges 'to interoperability' instead of referring to the 'transport layer'.

Mr Sivasubramanian Muthusamy wondered if the way in which parts of the numbering and DNS is structured should also be considered a factor enabling fragmentation. *Ms Sheetal Kumar* reacted that it is important to differentiate between fragmentation and distributed networking or decentralised organisation.

Mr Wim Degezelle reminded that at the webinar some suggested to be more focused and limit technical fragmentation to 'what irreversibly (risks to) damage(s) the interoperability of the internet', and argued that some 'technical' measures may impact the user experience without threatening the global interoperability of the internet infrastructure.

Mr Bill Drake raised concern that a binary approach - technical versus user experience fragmentation - and including commercial and governmental issues in the latter, may blur the discussion about what is in that big basket. He wondered if it wouldn't be better to treat commercial and government practices as distinct.

He further added that access to infrastructure should not be included - the term fragmentation should not be used to express political concerns about the shape of the internet. That 2.5 billion people don't have access is not a fragmentation of the internet, it is a lack of access to the internet. Similarly, governmental fragmentation should be limited to behaviour that limits interoperability, behaviour that limits the ability of willing partners to exchange packets. Putting all policy in the same basket may blur the discussion. It is not because policies are different that they constitute fragmentation.

Mr Chris Buckridge added that internet governance issues need to be addressed in a coordinated way to avoid that different venues (including multilateral organisations) set norms that later prove incompatible. He further stressed that losing the multistakeholder governance structures that underbuild the technical running of the internet risks the global interoperability.

Mr Jorge Cancio said that efforts in the last 20 years allowed to establish global internet governance institutions (ICANN, IGF, High Level Panel, Road Map for Digital Cooperation, etc.) where it is possible to discuss internet governance issues in an open and inclusive way. The support from governments for these venues is a support for having an open and interoperable internet. Tendencies to create governance structures that align with different governance styles (bifurcation), risk to replace the open and inclusive fora by regional or ideology based fora which may put in question the interoperability.

Mr Wim Degezelle suggested conceptualising governance as a separate dimension in the framework, next to but interrelated with, user experience and technical fragmentation instead of an overarching or horizontal issue.

Ms Sheetal Kumar asked where to draw the line between ‘fragmentation’ and ‘having no access’. *Mr Marek Blachut* answered that having no access (e.g. due to blocking) is not necessarily fragmentation. However, when this lack of access leads to the creation of alternatives that are not able to communicate to the rest of the internet (as such creates separate ecosystems), one can conclude that blocking resulted in fragmentation.

Mr Wim Degezelle reiterated that during the webinar the full interoperability of the internet was pointed out as an ideal or a reference against which one could assess the impact of measures that may cause fragmentation, while human rights and free flow of data were suggested as reference framework to assess the impact on fragmentation of the user experience.

Mr Chris Buckridge said that some practices of cutting of certain populations from the global internet can impact the global interoperability of the internet, while other similar practices are just bad or evil uses on running the network from a human rights perspective. The PNIF should aim at being solid in the distinction between both conversations. The personal experience that the internet is not an open garden for everyone is not the same as a fragmented internet.

Next Steps

A revised version of the draft framework that takes into account the input from this working meeting will be shared ahead of the IGF meeting. The PNIF session at IGF 2022 will be used to present and discuss the draft framework with the IGF community.

PNIF session at IGF 2022

30 November 2022

recording <https://youtu.be/Dh2CNwAeScw>

Meeting agenda

1. *Welcome*
2. *The Policy Network on Internet Fragmentation (PNIF) - introduction*
3. *Towards a framework for discussing internet fragmentation*
 - 3.1. *Unpacking the framework*
 - 3.2. *Town hall discussion on internet fragmentation and the draft framework*
 - 3.3. *Summary of the discussion and input for the Main Session*
4. *Looking forward - next steps for the PNIF*

Discussants

Ms Mazuba Haanyama, Head of Human rights Policy, Africa Middle East & Turkey, Meta; **Ms Nawal Omar**, Researcher at ICT Africa; **Mr Olaf Kolkman**, Principal at Internet Society; **Mr Túlio César Mourthé de Alvim Andrade**, Deputy Head, Brazilian Ministry of Foreign Affairs.

Moderation & Coordination

Ms Sheetal Kumar, PNIF co-coordinator, **Ms Bruna Martins dos Santos**, PNIF co-coordinator, **Mr Wim Degezelle**, IGF consultant PNIF.

Session transcript and recording

<https://www.intgovforum.org/en/content/igf-2022-day-2-pn-internet-fragmentation>

Meeting Summary

PNIF Introduction.

The Policy Network on Internet Fragmentation (PNIF) is an IGF intersessional activity to further the discussion on and to raise awareness of the technical, policy, legal and regulatory measures and actions that pose a risk to the open, interconnected and interoperable Internet.

The PNIF proposal is born from a multistakeholder community initiative and the objectives of the PNIF - over an envisaged 2 year timeframe - are to (a) Offer a systematic and comprehensive framework to define Internet fragmentation, its intended and unintended causes, and its potential effects; (b) Collect and analyze case studies to fine-tune and complement this framework; (c) Establish shared principles, recommendations or codes of conduct that prevent fragmentation and preserve the open, interconnected and interoperable nature of the Internet.

Details on the PNIF activities can be found on the [PNIF webpage](#).

Introducing the PNIF Framework for discussing Internet fragmentation.

The framework has been developed as a result of conversations, amongst other at the PNF webinars, that were driven by key questions such as what is fragmentation and how and where does it manifest, asked with the aim to find some level of commonality in the thinking and ongoing discussions about internet fragmentation.

Throughout these discussions people continued to speak to two areas, one fragmentation of the user experience, the other fragmentation of the technical layer of the Internet. An overarching point that came up in the discussions related to a possible fragmentation of the overall governance of the Internet. (the framework is explained [here](#))

With the framework the PNIF wants to provide a basis to continue discussion about internet fragmentation and unpack the different elements in greater detail, with the aim to develop a common understanding of the issue and be able to come to solutions and recommendations to different actors, to address internet fragmentation.

Unpacking the draft PNIF Framework - feedback & discussion

(The below summary paraphrases the feedback received during the session and suggestions made by participants. They do not constitute conclusions reached during the meeting.)

- The framework gives the opportunity to launch the debate, exchange views and review outstanding biases that one may have.
- The international community calls upon the internet community to help solve global and collective problems - such as climate change, pandemic prevention, and promoting the SDGs. Contributing to solving global issues, however, will require a shift from a solely individualistic approach to user experience to an approach that includes a human centric dimension and promotes collective values.
- There is no single type but a multitude of users. Different groups and categories of users face different challenges. This diversity should be reflected in the framework.
- Untargeted internet disruptions such as shutdowns, blocking and social media restrictions used by authoritarian regimes for political control affect all kinds of users including those wanting to use the internet for work or recreation.
- The internet is made up of a technical infrastructure (by some addressed as ‘the public core of the internet’) that need to collectively interoperate at a global scale to make the internet work: the naming, the routing, the forwarding, and the cryptographic infrastructure. The ‘core’ infrastructure is not the only internet infrastructure and other, new infrastructure may gain importance in the course of technical development. (for example the technology that allows the use of a social network ID to log into other services could be considered as a new underlying technology for other services).
- The routing of internet traffic via private infrastructure by big tech companies is an example of a long-term commercial activity that might lead to fragmentation if the investment in the own private infrastructure (cables, datacentres, etc) coincides with an underinvestment in transit infrastructure that allows users to get to other content.
- The governance of the internet infrastructure is decentralised with a hierarchy of independent multistakeholder organisations managing the different parts while working together to provide an open and interoperable internet. Fragmenting this governance framework may have disastrous effects.
- Some fragmentation of the user experience isn’t going to result in technical fragmentation, while technical fragmentation will always result in broader fragmentation. Some forms of fragmentation may be devastating and long term, a framework should take into account the severity of the ramifications of anything happening at the technical layer.
- The answers on what is fragmentation and which aspects of fragmentation are most relevant are shaped by political views.
- Discussions on fragmentation and the future of the internet should move from an individualistic to an collective paradigm with regard to user experience; move from a model of stakeholder cooperation to a model of cooperation and mutual empowerment of stakeholders with regard to governance; address legal risks originating from organisations or infrastructure being subject to a single jurisdiction, as for example ICANN under California law.

- When further unpacking the framework and the different dimensions, it'd be helpful to identify at what point certain practices would constitute or qualify as fragmentation (e.g. impact or duration of shutdowns).
- From a purely technical infrastructure perspective the darknet are sites and information that can not be found through the regular search engines. As the information is available and reachable over the internet in some way through a set of protocols, it is not an example of fragmentation. However, if you broaden the definition of the internet's technical infrastructure and include search engines, then one could argue that darknet is a form of fragmentation as search engines are not picking up the information.
- The introduction of certificates by governments can interfere and cause fragmentation in the application space as some applications may to block the certificate. One should discuss how to deal with this situation.
- The notion of 'avoiding internet fragmentation' in the work around the GDC is different from the one discussed at the PNIF so far. The GDC is to some extent focused on fragmentation of the information and the need to come to a convergence of ideas, of knowledge and avoiding echo chambers - the framework does not capture this yet. It's recommended to include it.
- It is Important to identify instances where governments play a role (eg govs vs shutdowns) and promote multistakeholder and international cooperation.
- The Russian-Ukrainian war has accelerated trends of protection and nationalism, similar trends are being seen in the digital sphere as well (e.g. the rise of authoritarian internet models with citizens segregated from the rest of the global internet). This presents a real risk to the internet as we know it.
- Governments should be constantly encouraged to heed their human rights obligations and protect and promote the free flow of information, recognising access to the internet as a human right and refusing to resort to internet shutdowns.
- Large tech companies and their products may impact human rights. Human rights need to be centric in the development of products and policies.
- One participant identified the following reasons for internet fragmentation: 1) increasing weaponization and militarisation of the internet which has become a new battlefield; 2) unilateral coercive measures in the digital world; 3) the non-cooperation of global digital platforms with law enforcement of countries regarding illegal content and investigation of cybercrime.
- Would a global declaration signed by all MS recognizing the internet as a peaceful environment for public good be confidence building enough and a solution to avoiding internet fragmentation ?
- It is important to also have a clear understanding of what is not internet fragmentation or a consequence of it (for example cybercrime, discrimination).
- The definition of and discourse around fragmentation should not be redefined to exclude things that are fragmentation but that we accept as acceptable (e.g. certain law enforcement action

against harmful content). A 'this is fragmentation and this - if we like it - is not' discourse should be avoided.

- It might be necessary to qualify or better define the 'user'.
- Should fragmentation be held up against an ideal standard of what the internet experience should be like rather than what it is? The example of globally applied extraterritorial measures (eg global content takedown) may potentially go against certain human rights principles, but not fragment the user experience.
- There are ramifications of internet fragmentation on emerging technologies such as AI, IoT, Big Data. Restrictions on the free flow of information and data may exacerbate issues of fairness and bias in new technologies, or exclude people and nations.

The framework remains open for comments. The input from the session and will feed into further work and the discussion of the envisaged phase 2 of the PNIF.
