IGF 2023

Policy Network on Internet Fragmentation

Output report

November 2023

The *Policy Network on Internet Fragmentation (PNIF)* is an open multistakeholder effort conducted as an intersessional activity of the *Internet Governance Forum (IGF)*.

This PNIF output is the product of the collaborative work of many, who participated in PNIF webinars and virtual meetings, PNIF drafting teams and the PNIF session during the IGF 2023 in Kyoto, Japan, or provided input on the mailing list or requests for feedback on draft outputs.

An overview of contributors to the IGF Policy Network Internet Fragmentation can be found in the Acknowledgements.

The PNIF activities were prepared and coordinated by a *PNIF Coordinating team:*

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Executive Summary

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

The IGF Policy Network on Internet Fragmentation (PNIF) raises awareness of - intended or unintended - effects of technical, policy, legal and regulatory actions on the basic features of the internet as an open, interconnected and interoperable network of networks, and provides a framework for a multistakeholder dialogue on what risks and causes of fragmentation should be addressed and how. The PNIF discussions and output document contribute to providing increased clarity about the diverse causes of fragmentation, their interrelation, impacts, and a common understanding of when fragmentation is most harmful and should be avoided. As such, the PNIF findings can feed into discussion between policymakers and stakeholders, in particular, but not exclusively in the framework of the Global Digital Compact (GDC) and Summit of the Future process.

The "*PNIF Framework for Discussing Internet Fragmentation*" which the PNIF constructed from community discussions in 2022 conceptualises three key dimensions of fragmentation:
- *Fragmentation of the Internet user experience,*
- *Fragmentation of the Internet's technical layer,* and
- *Fragmentation of Internet governance and coordination.*

Political, commercial and technical developments may have an impact on one or more of the dimensions of internet fragmentation, while the framework as well captures potential relationships and overlap between the dimensions.

In 2023 the three key dimensions of the Framework were further unpacked by separate work streams that worked on
- Identification and prioritisation: Identify which types of fragmentation and related actions pose the highest risks and should be addressed or avoided, and,
- Prevention and addressing: Define practices, guidelines and principles to prevent or address fragmentation.

Three intersessional webinars gathered community views to further unpack fragmentation and inform drafting teams that then compiled a PNIF discussion paper that was published on

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15 September to serve as input for the IGF 2023 annual meeting in Kyoto. The thematic webinars focused on Internet governance and coordination (PNIF webinar 1, 16 May), Internet user experience (PNIF webinar 2, 24 May), and the Internet technical layer (PNIF webinar 3, 27 June).

Feedback received on the PNIF discussion paper and the exchanges at the PNIF session at IGF 2023 (10 October, Kyoto) helped to shape the PNIF output for 2023.

Throughout the PNIF activities recommendations for addressing internet fragmentation emerged.

Recommendations for addressing fragmentation of Internet governance and coordination.
1. Do not introduce duplication within the internet governance landscape.
2. But, improve coordination between existing internet governance bodies.
3. To avoid siloed public policy discussions regarding Internet governance, all Internet governance bodies must be fully inclusive to stakeholders and enable meaningful multistakeholder participation.
4. Existing global Internet governance bodies should engage with national governments to promote inclusive policymaking.

Recommendations for addressing fragmentation of the Internet technical layer.
1. Recognise that there are critical properties of the internet/public core that require multistakeholder protection.
2. Measure to monitor the extent and nature of different types of technical fragmentation as the internet evolves.
3. Critically assess and avoid technical proposals (in standards and technology development) which reduce interoperability or otherwise would take the Internet away from the properties and design principles which have led to its success.
4. Protect the multistakeholder approach.
5. Promote inclusive policymaking that integrates consideration of technical expertise/impact of policies on critical properties of the internet, while protecting innovation.

Recommendations for addressing fragmentation of the Internet user experience.
Adherence to the following *principles* will contribute to addressing identified harms resulting from fragmentary behaviours:
1. *Equality principle* - Every user should - as a starting point - be able to access what was intended to be made publicly available, in the same manner.

2. *Enhancement principle* - Measures to enhance the user experience by making it more relevant, meaningful, understandable, secure, or accessible, and that are requested by the users themselves (...) should not be considered as "bad" fragmentation that contravenes the first principle, notwithstanding the potential effects on uniformity.

3. *Impact assessment principle* - Any measure - whether by governmental, private sector, or technical actors - that may have a directly intended effect (...) to diminish or render ineffectual the first principle, must be evaluated prior to its introduction or implementation to ensure that such a measure is proportionate, addresses a legitimate harm, is respecting of human rights, and follows democratic procedures with multi-stakeholder involvement.

4. *Harmonisation principle* - Fragmentation that may be driven by diverse national regulatory or legislative approaches to protect the human rights or legitimate interests (...) can be avoided through cooperation and multilateral instruments (informed by multi-stakeholder consultation) that set globally-applicable baseline standards and protections of those rights and interests, (...).

5. *Free Choice principle* - No user of the Internet should be coerced or unduly incentivised to use a particular platform, technology, or service provider - especially in order to provide or access content, resources, applications or services on the Internet that would not have otherwise been made possible or available to them (...). Users should be able to choose the applications, instruments and service providers that they use and should not be subject to unfair conditions deriving from dominant market positions, lock-in and network effects.

The recommendations are not carved in stone but intended as valuable input for further stakeholder discussion. The report identified areas for further research, and the identification of best practices. Testing and socialisation of the recommendations and practices in an inclusive stakeholder setting can be important in the context of the GDC process and upcoming WSIS+20 Review. The PNIF could serve as such a soundboard.

The Report of the IGF 2023 Policy Network on Internet Fragmentation is available at https://www.intgovforum.org/en/filedepot_download/256/26667 .

1. Introduction

1.1. The IGF Policy Network on Internet Fragmentation

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 should be avoided or addressed - including in the context of the UNSG's "Our Common Agenda" - s can hinder an open and inclusive dialogue, and the identification of 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 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 IGF Multistakeholder Advisory Group (MAG) confirmed Internet fragmentation as a topic for an IGF intersessional activity, namely a Policy Network. The Policy Network was set up with the aim of offering a systematic and comprehensive framework, complemented by case studies, to define Internet fragmentation, its causes, and its potential effects and 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.

1.2. Setting the scene: the PNIF 2022

In 2022, the PNIF held a series of webinars which confirmed that there is a wide diversity of opinions as to what internet fragmentation is. An attempt to develop a common definition of internet fragmentation via a survey launched earlier in the year didn't prove successful. Through the webinar 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 the IGF 2022 in Addis Ababa, and was discussed during the PNIF session held there. The aim was to have a refined and more mature framework

ready for a second phase of the PNIF in 2023, 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 thus, to support a discussion with a greater diversity of 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.

With regards to each part of the framework, preliminary recommendations for addressing fragmentation were provided in 2022. For example, with regards to the three parts of the framework:
- User Experience: 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.
- Technical layer: The **interoperability of the global internet infrastructure** is proposed as reference framework to assess technical fragmentation.
- Internet governance and coordination: 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
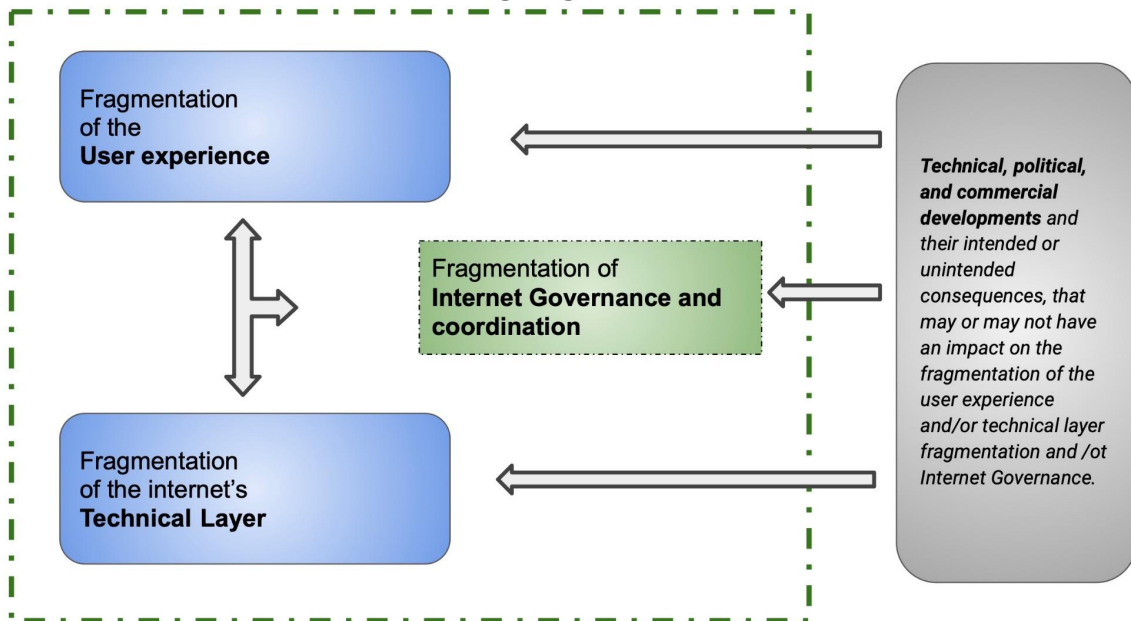
1.3. PNIF 2023 plan

The PNIF in 2023 intended to further unpack the PNIF framework via three parallel work streams on fragmentation of the user experience, fragmentation of the Internet's technical layer, and fragmentation of Internet governance and coordination.

The work streams worked in an open and bottom-up manner to further unpack fragmentation and take a deep dive into identifying, prioritising, and prevention and addressing fragmentation:

- Identification : Identify which types of fragmentation and related actions pose the highest risks and should be addressed or avoided;
- Prevention and addressing : Define practices, guidelines, and principles to prevent or address fragmentation.

The combined work of the three work streams l constitute the PNIF 2023 outputs, which include:

- A refined and robust framework for discussing fragmentation, to provide increased clarity and common understanding about the diverse causes of fragmentation, their interrelation, impacts, and specifically when fragmentation is most harmful and should be avoided.

- Recommended high-level overarching principles to avoid Internet fragmentation (building on the 2022 framework), to feed into discussions between policymakers and stakeholders, in particular but not exclusively in the framework of Global Digital Compact (GDC) and Summit for the Future process, and the WSIS+20 review.
- Concrete guidance and solutions for stakeholders to address fragmentation, including alternative solutions for problematic policies and behaviour that are the source of harmful fragmentation.

2. Internet Governance and Coordination

2.1. Unpacking & prioritising

Fragmentation of Internet governance primarily relates to the interactions between global Internet governance and standards bodies. When these bodies do not coordinate or are not inclusive, it can and does result in fragmentation. This fragmentation can manifest in siloed or duplicative discussions and exclusion of specific groups from participation, resulting in decisions being taken without consensus from the global multistakeholder community. National governments can also contribute to fragmentation by introducing governance that conflicts with processes and policies agreed through multistakeholder Internet governance and standard bodies. Fragmentation at the governance level can also create knock-on effects for fragmentation at the technical and user experience layers.

The Internet governance ecosystem is a complex network of interconnected bodies that work together in coordination and collaboration.

In terms of coordination, one body needs to receive updates on what another body is doing to understand how work streams may have reciprocal impacts. For example, if the IETF is developing a new standard or protocol, this shouldn't happen in isolation. It is valuable, and in some cases critical, to understand what is happening in standards development in interrelated technology areas (for example at the ITU-T). It can also be important to understand deployment and implementation experience (for example from best practice sharing at RIRs and Network Operator Groups), and in turn, keep such bodies abreast of its work.

In terms of collaboration, sometimes two bodies (for example, ICANN and RIRs) need to work together on a shared, or overlapping, objective. To collaborate, bodies need to work together through a voluntary approach and adapt when responsibilities are not firmly defined under a clear mandate. It is in the interest of all stakeholder participants to see such collaboration carried out efficiently.

Duplicative and exclusive mechanisms (that is, those that do not allow for the participation of all stakeholders), whether in the form of initiatives, forums/bodies, or agendas within

existing forums/bodies, can harm coordination and collaboration across the Internet governance space, resulting in fragmentation at the governance layer.

Avoiding duplicative mandates

Firstly, duplicative mandates reduce efficiency and inclusion. This can foster competition for legitimacy between bodies, contributing to fragmentation of the Internet governance ecosystem. This can lead to uncertainty for the community and potential divergences in approach taken by different stakeholders. There are two distinct paths that can lead to duplicative mandates. Such mandates can arise through scope creep, for example if one body starts taking up issues that already fall under a different body's mandate. Setting up a new body, which has an overlapping mandate to an existing body, also creates duplication.

Avoiding exclusive mandates

Fragmentation can also occur at the governance layer through the creation of bodies or initiatives with exclusive mandates that do not allow for the full participation of the multistakeholder community. Internet governance bodies cover different areas of specific focus in their individual mandates. For example, ICANN's focus is on ensuring the stable and secure operation of the global domain name system. However, an exclusive mandate is one which does not enable the full participation of the multistakeholder community.

When a new body or initiative creates, whether intentionally or unintentionally, a closed community, this excludes stakeholders. Inclusivity, transparency and accessibility are essential components of Internet governance bodies and initiatives - exclusive bodies contribute to fragmentation at the governance layer, as they encourage stakeholders to communicate in silos. Potential longer term effects of decisions to create new bodies or initiatives should be considered as well, particularly regarding making them fully integrative to all stakeholders from the start. As with duplicative mandates, exclusive mandates contribute not just to fragmentation at the governance layer, but can also lead to other forms of fragmentation, such as the Internet's technical layer.

Fostering meaningful inclusion is a particularly pertinent point in that regard. Some organisations and groups of stakeholders, especially in the Global South, face more barriers to engaging in Internet governance processes and bodies. This alienation can present high barriers for key stakeholders to engage meaningfully, and contribute to duplication or a lack of coordination among stakeholders.

Taking action with the right measures and at the right level

Governance at the national level interacts with Internet governance at the global level in ways relevant to fragmentation. Individual governments' actions can lead to divergence in the rules applied to the Internet and its management, or undermine the bodies of Internet governance and standards development. Given the unique levers available to governments at the national level, actions have the potential to be detrimental to a single consistent global Internet experience if alignment on underlying basic principles (e.g. those outlined in the technical layer and user experience sections of this paper) is lacking. Procedurally, if individual governments are not able to be fully and productively engaged with multistakeholder global governance, national measures ca, emerge that are inconsistent with global norms and principles, undermining the legitimacy and effectiveness of global internet governance organisations.

To address this imbalance, global Internet governance bodies can take actions to empower these stakeholders who might otherwise go unheard, and should heed recommendations to improve inclusively of bodies within the internet governance ecosystem.

Additionally, there is a need for global Internet governance bodies to engage more closely with national and regional political bodies. Such bodies might pass legislation that impacts the Internet, without realising the full implications or without consulting all stakeholders. On the other hand, internet governance and technical organisations may not realise the implications of their actions in national contexts, where they may not sufficiently enable input from a diverse array of stakeholders including governments. Early engagement with global Internet governance bodies could help to mitigate negative consequences which might arise. This engagement is important at the executive, legislative and judicial levels.

2.2. Recommendations for addressing fragmentation of Internet governance & coordination

1. Do not introduce duplication within the Internet governance landscape

The Internet governance system is complex, with the involvement of an array of different bodies: ICANN, IETF, the IGF and the ITU. Introducing duplication into this already complex landscape can harm inclusion, as stakeholders, particularly those with less financial resources (like civil society and developing countries) do not have the resources to

proactively engage with all of these bodies as it stands. Proposals to introduce new bodies, for example the proposal to establish a UN Digital Cooperation Forum (DCF), risk fragmenting this landscape further. It could cause stakeholders to make difficult decisions about where to engage, siloing them from discussions taking place elsewhere.

Proposals for additional Internet governance bodies also risk duplicating existing mandates. In the case of the DCF proposal, for example,the IGF already holds responsibility for bringing all stakeholder groups together on an equal footing to discuss policy issues related to Internet governance.

2. **But, improve coordination between existing Internet governance bodies.**

Nonetheless, few clear coordination mechanisms exist between existing Internet governance bodies. This opens up the risk that mandates could be duplicated, and false gaps identified when in actuality, a particular body has it within their remit to take forward work in a particular area.

To address fragmentation of governance at a systems level, steps can first be taken within existing Internet governance organisations. These bodies should proactively seek improvements in the way they operate, with an expectation that improved organisational governance measures will in turn improve the way each organisation interacts with other organisations. Better internal processes and governance are likely to lend themselves to better outreach and coordination, which would likely result in better information sharing and the deconfliction of mandates.

Coordination mechanisms are important both at the level of detailed work in Internet governance and technical organisations, as well as at the level of strategic direction. Such a mechanism at strategic level could help to clarify areas where mandates may overlap, and therefore serve to clarify or eliminate any existing duplication. In addition, the introduction of any mechanisms must be institutionalised so that coordination and communication are not over reliant on specific individuals or informal networks.

3. **To avoid siloed public policy discussions regarding Internet governance, all Internet governance bodies must be fully inclusive to stakeholders and enable meaningful multistakeholder participation.**

Ensuring the multistakeholder community can meaningfully participate in Internet governance bodies is key to ensuring that the Internet's governance layer does not

fragment. As extrapolated on above, the siloing of different groups of people into different bodies can impact governance processes negatively, by excluding important perspectives from discussion either through resource constraints or by lack of mechanisms for full multistakeholder participation.

This is not simply a risk with the potential introduction of new, duplicative bodies or mechanisms into the Internet governance landscape. Existing Internet governance bodies also need to consistently evolve to ensure they are enabling the meaningful participation of all stakeholders in practice. For example, certain processes in Internet governance are technical. To ensure all stakeholders across regions and groups can meaningfully participate in such processes, Internet governance bodies need to provide relevant resources aimed at upskilling newcomers and invest resources in capacity development initiatives - simply saying that all can participate is not enough.

Equally, the UN must take the same approach when it initiates processes related to Internet governance. There needs to be a recognition from UN officials that multistakeholderism is core to the effective functioning of the global Internet, and as such, flexibility to create multistakeholder processes when it comes to negotiating, agreeing to and implementing principles and mechanisms that affect Internet governance. In this regard, UN officials can look to the IGF in particular to solicit examples or ideas for best practice on enabling effective multistakeholder participation.

4. **Existing global Internet governance bodies should engage with national governments to promote inclusive policymaking.**

Gobal Internet governance bodies should increase engagement with national governments. Governments should include all stakeholders in their policy work on Internet governance and empower multistakeholder participation within these countries. In addition, such engagement can help global Internet governance bodies to understand the motivations behind, and provide feedback on, the implications national legislation could have on the global Internet governance ecosystem. In addition, increased engagement from global Internet governance bodies at the national and regional level can also equip national governments and regional political bodies to meaningfully participate in the complex Internet governance ecosystem.

2.3. Further areas for research to adopt best practice

This analysis and the corresponding recommendations are high-level, focused on principles. However, further work should be undertaken to examine what specific best practice could be applied to the Internet governance space to improve coordination and mitigate fragmentation of the governance layer. Mechanisms ripe for further exploration, to assess best practice but also lessons learned, include:

- The WTO's principles for the development of international standards
- OECD's Best Practice Principles on the Governance of Regulators
- The ITU's G5 collaborative regulation

Research on best practice mechanisms to implement in the long-term do not prevent global Internet governance bodies from acting now. Global Internet governance bodies can take important steps in the immediate term to improve coordination. For example, convening strategic meetings among leaders and representatives from ICANN, the ITU, the IETF and the IGF to discuss key priorities within, and external trends affecting, the Internet governance space.

3. Internet Technical Infrastructure

3.1. Unpacking & prioritising

The Internet is made up of a technical infrastructure that collectively interoperates at a global scale so that data (information) is reachable and can be transported over the Internet. **Fragmentation of the Internet's technical infrastructure thus relates to a range of challenges to this interoperability** at the transport layer that makes the Internet work as a medium of communications globally.

The technical infrastructure underpinning the Internet is made up of a diverse range of technologies, which vary significantly in their role and importance to the functioning of the Internet overall. While challenges to interoperability that contribute to Internet fragmentation can occur at a variety of points, frameworks such as the *Critical Properties* from the Internet Society, or the *Public Core* as introduced by the Global Commission on Stability in Cyberspace, or the *Technical Success factors* of the Internet expose priority components where fragmentation occurring would have more serious negative implications. When we move away from the implementation of these frameworks, then it is likely that some form of fragmentation is enabled.

Technical layer fragmentation is not and should not be confused with :
   a. Decentralisation in the management of the Internet infrastructure (e.g. IP resources, DNS);
   b. Lack of connectivity generally, or between specialised networks which can have multiple causes; e.g private networks set up for security reasons
   c. The evolution of the internet and related technologies; because the Internet is not static.

The following practices may impact the Internet's interoperability and as such lead to a fragmentation of the technical infrastructure:
   a. The result of actions that have a negative impact on the critical properties of the internet;
   b. The concentration or consolidation internet resources for routing traffic.
   d. Interventions in the technical transport layer to mitigate issues in the content layer.

3.2. Recommendations for addressing fragmentation of the Internet technical layer

1. **Recognise that there are critical properties of the internet/public core that require multistakeholder protection**

   - Consider defining: Digital public infrastructure, public core, digital public goods
   - Commit to not attacking/impairing the core and critical properties
   - Commit to protecting the critical properties of the internet
   - Continued decentralised management and governance of IP address space (link to governance fragmentation)
   - Protect the current root system

2. **Measure to monitor the extent and nature of different types of technical fragmentation as the Internet evolves.**

   - Coordination and information sharing on measurements of adoption / use of key elements of the shared public core of the internet including standards.
   - Measurements of reliability and support reachability by addressing peering disputes and routing misconfiguration (unintended) and committing to not creating or supporting firewalls (intended). An example is the Dashboard on Internet resiliency and concentration by the Internet Society (pulse.internetsociety.org); complementary measurements and academic research needed.

3. **Critically assess and avoid technical proposals (in standards and technology development) which reduce interoperability or otherwise would take the Internet away from the properties and design principles which have led to its success.**

   - In doing so, ensure that the ability to innovate and evolve the internet is protected.

4. **Protect the multistakeholder approach**

5. **Promote inclusive policymaking that integrates consideration of technical expertise/impact of policies on critical properties of the internet, while protecting innovation.**

- Avoid policy interventions and regulation that would undermine technical standards setting and implementation of consensus-driven standards. For example, engaging all stakeholders and conducting impact assessments could be helpful here to ensure that critical properties of the internet are protected while protecting innovation.
- Address the impact of sanctions or interventions with the infrastructure of the internet by creating space for discussion and collaboration on these issues in multistakeholder fora.
- Support liaison relationships between technical internet organisations such as standards bodies, regional internet registries, ICANN, and others.

3.3.   Further areas for research to adopt best practice

- Define public core, interoperability and global internet infrastructure or clarify whether and how these are understood
- Explain how 1) governance of the technical layer relates each of the above concepts and 2) how internet governance that is *not* governance of the technical layer impacts each of the above concepts
- Research current liaison relationships between technical internet organisations (e.g between and within the I* organisations) and others, to ascertain good practices that can either be amplified or replicated as well as challenges that should be addressed

4.   Internet User Experience

4.1.   Unpacking

Fragmentation of the user experience is the phenomenon by which different end-users of the Internet, when trying to perform the same action online, are presented with different content, options or interfaces. This happens normally as the consequence of using different client-side instruments (devices, applications), different server-side platforms (search engines, social media), different languages and ways of expression, and also, as the consequence of being located in different parts of the world; moreover, this is often the result of per-user customizations applied by the services that are being used.

Many of these differences are actually beneficial, facilitating the user's success by providing a more familiar and effective experience, and helping them avoid the many online pitfalls and dangers. However, **when such fragmentation is forced upon the end-user by other parties, or when it hampers the communication among end-users and their ability to access content and services, it can deny the advantages and the freedoms that the Internet is supposed to offer.** This is the kind of fragmentation that is detrimental to an open internet as a whole, which is harmful, and which must be addressed.

While coordination and interoperability at the technical and governance layers is a requirement for the Internet to exist, significant variance in user experiences throughout cultures, jurisdictions, devices and platforms is normal; it has always existed since the Internet was created. In terms of countries, it allows for the preservation of national customs and values; in terms of platforms, it allows for differentiation and competition. However, this variance should not deny the basic rights of end-users, both in terms of communication rights and of the ability to choose freely their services and applications.

In recent times, two major trends have been increasing the amount of fragmentation observed at the end-user level which is harmful - that is which denies the basic rights of end-users, both in terms of communication rights and of the ability to choose freely their services and applications.

1. **Companies** - especially Internet platform providers - pursue the profiling of users and the customization of services and advertising, and introduce measures (user interface designs, terms and conditions, business and technical practices) that

restrict their ability to move to competing services or to interact with third party services and products and with their users, when these parties do not have commercial agreements with the platform, or when the platform owns a competing product.

2. **Governments** are increasing the amount of national and regional legislation addressing Internet activities, industries and content; from a user experience this has generated a broad spectrum of effects that include forcing global companies to store data in-country in a way that is not harmonised with global best practice (and therefore reduces data flows) making specific websites and content, including media outlets, unavailable to end-users in the country.

In the end, the definition of "Internet fragmentation at the user experience level" is necessarily broad, including a great fraction of what currently happens over the Internet. Narrower definitions have been attempted, but without reaching consensus; different stakeholders find harm in different parts of the trends described above. Often, fragmenting measures are introduced as a response to other harms, and the loss of uniformity in Internet access may be considered by some as an acceptable price to pay to counter these harms; however, this is by definition a policy compromise which may be assessed differently according to the views and interests of each stakeholder group, and to the culture and values of each nation.

Thus, our focus should be those measures taken by stakeholders that
● Are disproportionate in the harm that is caused to the user and service provider, in terms of their control over the experiences that they consume or create online, and;
● Which if replicated globally would harm an interoperable, free, and open Internet.

Using a common and global framework, namely the international human rights framework, to assess whether fragmentation of the user experience is harmful or not supports the first objective above.

A "case by case" approach may also be necessary to determine when specific regulatory, technical and business trends that introduce variance in end-user experiences should be considered harmful to the Internet as a whole. Any global solution should allow for a reasonable degree of national differentiation (taking into account local contexts), but must be based on democratic procedures and multi-stakeholder consensus.

One method to evaluate these trends for their fragmentary potential may be to create a crude conceptual model to distinguish between **equal** and **equitable** user experiences.

"Equitable", or outcome-driven experiences, might focus on general issues that affect user interactions with the internet more broadly (e.g. the digital divide, internet speeds and meaningful access, net neutrality, linguistic diversity and localization, accessibility for disabled individuals etc.) - which is more **aspirational** in its policy implications. In doing so, we can carve this portion out for discussions in related areas, acknowledge its importance and fragmentary potential, but avoid having these issues interfere with the more targeted discussions on fragmentation.

"Equal" experience discussions are more basic in nature. With certain assumptions about the typical internet user (in terms of connectivity to the internet, effective speeds, understanding language etc. as covered above) we can focus on common high-priority harms that can affect the user experience as described below, which have the common characteristics of directly or indirectly stripping away user control over their digital experiences, and controlling applications and content providers in a way that leads to inconsistencies and dissimilarities among platforms or regions.

Prioritising

Given the varied and controversial nature of user experience fragmentation trends, in global policy venues it has been hard to agree on a shared set of priorities.

The private sector, especially the global Internet industry players based in the United States, has been focusing their objections on the fragmentation introduced by new legislation by multiple countries and by the European Union. This includes data localization laws (sometimes also privacy laws), attempts to introduce lawful interception of personal communications by law enforcement agencies (especially if they somehow undermine encryption), and any further requirements that create costs and liabilities and introduce the need to differentiate the service by the end-user's geographical location, such as national content blocking and content moderation requirements.

On the other hand, governmental and parliamentary action - though very variable depending on the country - has generally focused on countering negative social and economic effects attributed to the platforms, ranging from disinformation to oligopolies; and on making specific content unavailable under multiple motivations, from security to

protection of minorities and to the enforcement of fiscal law, but also, in certain countries, for purely political reasons.

Civil society tends to hold a wide variation of priorities and opinions; for example, laws that attempt to counter the circulation of child sexual abuse material are often criticized by digital rights groups, however the same measure may be praised by children's rights associations.

It is hard to identify a common set of problems and priorities all stakeholders agree upon . Therefore, as an alternative approach, we discuss specific problems one by one, to identify whether common and broadly acceptable principles start to emerge, and therefore to try to foster consensus across stakeholders.

The following are proposed examples of high-priority "negative" fragmentation (using a type of "per-se" rule - based on proportionality, e.g. that there is no good justification for any of these as the harm they cause is principally worse than the harm they are trying to address). They are therefore negative from the perspective of the user due to their disproportionality, deliberate nature (including the intention to control online experiences whether that be by targeting the users directly, or those that provide content and services online):

- **1. Internet shutdowns.** When connectivity is turned off in a given city, region or country, or for all the users of a major ISP, the Internet simply ceases to exist for those who live there. As such, this is the worst case scenario for users, as it denies any usage of the Internet; and is not a proportionate response.
- **2. National content takedown and blocking orders having global effect.** No country should have unilateral jurisdictional reach on what content or resources are available beyond its borders regardless of the issue in question (e.g. defamation laws may differ, as may IP laws). Even in the most egregious of cases (e.g. CSAM), local notice-and-takedown, global cooperation and common reporting, and harmonisation at multilateral levels through treaty instruments is a more systematically robust approach and should be aligned with international human rights standards. When the takedown of resources (e.g. domain names, WebPKI certificates) would make content and services globally unavailable, it should only happen according to globally agreed principles. When legal measures from one jurisdiction (e.g. court orders around content or domain blocking) affect global service providers, the providers should implement them in a targeted manner so that they only apply to requests coming from that specific country.

- **3. Digital protectionism via lack of competition and user choice in digital markets.** This includes governments trying to favour national, State-owned services for communications and Internet access, outlawing more modern and/or private alternatives such as VoIP services or VPNs. This also includes global platforms locking users into their set of services and hampering the birth of alternative local services and applications.

Other types of potentially negative fragmentation (that may need slightly more analysis into the effects):

- **4. National content takedown and blocking orders, or other practices that incentivise censorship and self-censorship, that have no immediate or discernable global effect on users beyond a certain country, but are designed to stifle free information and hide politically sensitive content, and thus damage the human rights of the end-users from that country.** It is thus necessary to distinguish between blocks that are actually supporting the safety and security of users (e.g. against malware, or websites selling counterfeit medicines) or are necessary to protect third party rights (e.g. against child sexual abuse material) from those that aim to deny rights to users within a country.
- **5. Violations of network neutrality.** Throttling, zero-rating and other similar mechanisms affect the usage of the Internet and can make the connection unusable, limiting or removing the possibility for end-users to freely choose the services and content that they want to enjoy. While there can be technical cases in which some traffic discrimination is necessary, for example to prevent denial of service attacks or to ensure minimum service levels to everyone when the network is congested, these situations should be clearly limited and defined, avoiding any other breach of network neutrality motivated by commercial or political reasons.
- **6. Geoblocking or content differentiation;** specifically which derive from the application of intellectual property rights in a broad manner, especially if affecting content which has strong cultural value or which has no significant commercial value in the countries where it is blocked.

The following is a rough matrix to help visualise the above, and entails that we should be focusing on issues that are at (or close to) the top-right quadrant, practices or measures that are clearly problematic as they deny (groups of) internet users the advantages and the freedoms that the Internet is supposed to offer. In the top-left quadrant are issues related to the exclusion of groups of people from meaningful Internet access (from being or becoming Internet users). They often have a deeper and diverse cause and cannot be traced

back to deliberate practices or measures intended to exclude internet users from certain content or services. The bottom-right quadrant focuses on fragmentation issues covered by analysis of the other layers as well (technical and governance) that may have indirect or longer-term tendencies towards fragmentation of the user experience as well.
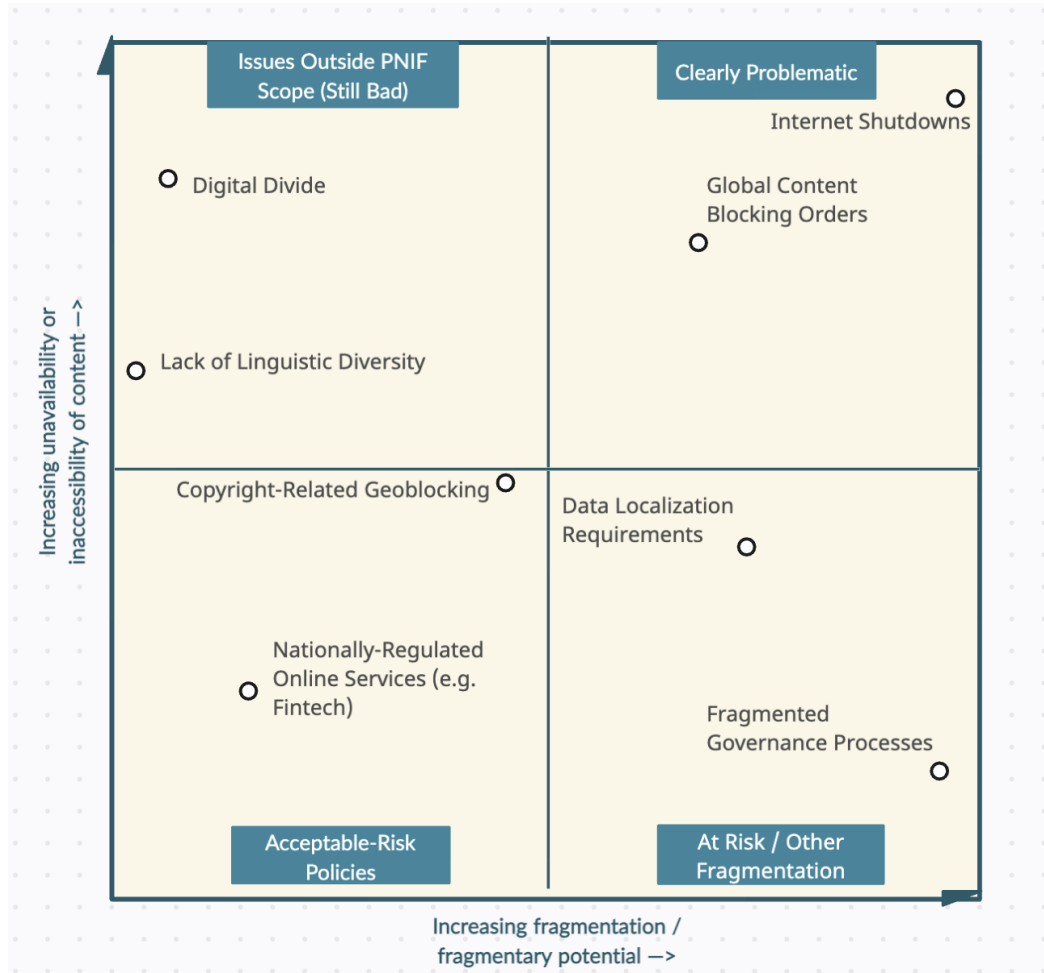
4.2. Recommendations for addressing fragmentation of Internet user experience

We propose the following principles to address the harms identified above resulting from fragmentary behaviours.

1. The Equality Principle

Every user of the Internet, regardless of where they are based, should - as a starting point - be able to access any content, resources, applications and services that are intended (whether unconditionally, or subject to any fulfillable conditions, commercial or otherwise) to be made publicly and globally available, in the same manner.

2. The Enhancement Principle

Measures to enhance the user experience by making it more relevant, meaningful, understandable, secure, or accessible, and that are requested by the users themselves (e.g that content is available in different languages) so as to, in effect, align the user's experience of the Internet with their own intentions or desires - should not be considered as "bad" fragmentation that contravenes the first principle, notwithstanding the potential effects on uniformity.

3. The Impact Assessment Principle

Any measure - whether by governmental, private sector, or technical actors - that may have a directly intended effect (or creates the incentive) to diminish or render ineffectual the first principle, must be evaluated prior to its introduction or implementation to ensure that such a measure is proportionate, addresses a legitimate harm, is respecting of human rights, and follows democratic procedures with multi-stakeholder involvement.

4. The Harmonisation Principle

Fragmentation that may be driven by diverse national regulatory or legislative approaches to protect the human rights or legitimate interests of Internet actors (such as the protection of privacy, the protection of minors, parody or fair use of intellectual property etc.) can be avoided through cooperation and multilateral instruments (informed by multi-stakeholder consultation) that set globally-applicable baseline standards and protections of those rights

and interests, focusing national intervention on the issues for which no adequate protection has been established at the global level yet.

5. **The Free Choice Principle**

No user of the Internet should be coerced or unduly incentivised to use a particular platform, technology, or service provider - especially in order to provide or access content, resources, applications or services on the Internet that would not have otherwise been made possible or available to them (or would have been possible or available in a manner that renders the experience fundamentally different due to lower quality or greater barriers to entry). Users should be able to choose the applications, instruments and service providers that they use and should not be subject to unfair conditions deriving from dominant market positions, lock-in and network effects.

4.3. Further areas for research to adopt best practice

- Further identify how human rights standards and user experience fragmentation intersect, including which treaty instruments are envisioned to promote regulatory harmonisation
- Unpack the six cases above based on the principles outlined to develop recommendations for best practice, including specific recommendations for stakeholder groups

5. Acknowledgements

This PNIF discussion paper is the product of the collaborative work of many, who participated in PNIF webinars and virtual meetings, or provided input on the mailing list.

This PNIF discussion paper would not have been possible without the valuable work of three dedicated drafting teams:

- **Drafting team 'Internet governance and coordination':**
  Rosalind KennyBirch, German López Ardila, Ian Sheldon, Bruna Martins dos Santos, et al.
- **Drafting team 'Internet technical infrastructure'**:
  Olaf Kolkman, Marek Blachut, Sheetal Kumar, et al.
- **Drafting team 'Internet user experience'**:
  Izaan Khan, Vittorio Bertola, Sheetal Kumar, et al.

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- **PNIF webinar 1 - Internet governance and coordination**, 16 May 2023
  Anriette Esterhuysen, Wolfgang Kleinwächter, Susan Ness, Raquel Gatto
- **PNIF Webinar 2 - Internet user experience**, 24 May 2023
  Farzaneh Badii (Digital Medusa), Marielza Oliveira (UNESCO), Zach Rosson (Access Now)
- **PNIF Webinar 3 - Internet technical layer**, 27 June 2023
  Olaf Kolkman (Internet Society), Mirja Kühlewind (IAB)
- **PNIF Session at IGF 2023,** 10 October 2023
  Rosalind KennyBirch, Jordan Carter, Olaf Kolkman, Suresh Krishnan, Vittorio Bertola, Marielza Oliveira.

Overall coordination of the IGF PNIF 2023:
  Sheetal Kumar, PNIF co-facilitator
  Bruna Martins dos Santos, PNIF co-facilitator
  Wim Degezelle, PNIF consultant IGF Secretariat

A **PNIF Multistakeholder Working Group of Experts (MWG)** provided advice on substance scope and implementation of the policy network. MWG composition.

Annexe PNIF activities and resources

PNIF 2023

The PNIF organised three intersessional webinars on the dimensions in the internet fragmentation discussion conceptualised in the *PNIF Framework for Discussing Internet Fragmentation* - Internet Governance and Coordination, Internet User Experience, and the Internet Technical Layer - that emerged as output from the PNIF discussions in 2022. These webinars gathered broad community views to unpack, prioritise, and address fragmentation and informed the drafting teams that produced the first draft of this 2023 PNIF discussion paper.

PNIF 2023 Webinar 1, Internet Governance and Coordination

16 May 2023, 13:00-14:30 UTC
Recording https://youtu.be/xFPIoxBxXOM

Discussants: Anriette Esterhuysen, Wolfgang Kleinwächter, Susan Ness, Raquel Gatto.
Coordination: Sheetal Kumar, Bruna Martins dos Santos, Wim Degezelle.

Agenda
1. Introduction: Brief overview of the PNIF and PNIF Framework for Discussing Internet Fragmentation
2. Discussion: Fragmentation of Internet Governance and Coordination
   - Unpacking: What is and what is not fragmentation of Internet governance and coordination?
   - Prioritising: Which manifestations of fragmentation Internet governance and coordination pose a risk and should be avoided or addressed?
   - Addressing: What practices, guidelines, and principles could help to address fragmentation of internet governance and coordination?
3. Conclusion

PNIF 2023 Webinar 2, Internet User Experience

24 May 2023, 17:00-18:30 UTC
Recording: https://youtu.be/tn7hRw9xtGQ

Discussants: Farzaneh Badii, Marielza Oliveira, Zach Rosson.
Coordination: Sheetal Kumar, Bruna Martins dos Santos, Wim Degezelle.

Agenda
1. Introduction: Brief overview of the PNIF and PNIF Framework for Discussing Internet Fragmentation
2. Discussion: Fragmentation of Internet User Experience
   - Unpacking: What is and what is not fragmentation of Internet user experience?
   - Prioritising: Which manifestations of fragmentation of the Internet user experience pose a risk and should be avoided or addressed?
   - Addressing: What practices, guidelines, and principles could help to address fragmentation of the Internet user experience?
3. Conclusion

PNIF 2023 Webinar 3, Internet Technical Layer

27 June 2023, 12:00-13:30 UTC
Recording: https://youtu.be/vAelE5gmsAU

Discussants: Olaf Kolkman, Mirja Kühlewind.
Coordination: Sheetal Kumar, Bruna Martins dos Santos, Wim Degezelle.

Agenda
1. Introduction: Brief overview of the PNIF and PNIF Framework for Discussing Internet Fragmentation
2. Discussion: Fragmentation of the Internet Technical Layer
   - Unpacking: What is and what is not fragmentation of the Internet technical layer?
   - Prioritising: Which manifestations of fragmentation of the Internet technical layer pose a risk and should be avoided or addressed?
   - Addressing: What practices, guidelines, and principles could help to address fragmentation of the Internet technical layer?
3. Conclusion

PNIF 2023 Workshop at IGF 2023

10 October 2023, 09:00-10:30 am UTC+9.
IGF2023, Kyoto, Japan
Recording: https://youtu.be/5YFKR9EE-54

Discussants: Rosalind KennyBirch, Jordan Carter, Olaf Kolkman, Suresh Krishnan,
              Vittorio Bertola, Marielza Oliveira.
Moderation: Sheetal Kumar, Bruna Martins dos Santos, Wim Degezelle.

Agenda

1. Welcome & introductions   *5 minutes*

2. The IGF Policy Network on Internet Fragmentation (PNIF)   *20 minutes*

    a. Purpose and work plan
    b. PNIF 2022 and PNIF Framework for Discussing Internet Fragmentation
    c. PNIF 2023 highlights and general findings

3. Presentation of findings and recommendations by track   *30 minutes*

    a. Internet Governance and Coordination
    b. Internet User Experience
    c. Internet Technical Infrastructure

4. Discussion and community feedback   *25 minutes*

5. Summary and next steps   *25 minutes*

PNIF 2022

IGF 2022 Policy Network on Internet Fragmentation Output

> PNIF 2022 Output Report
>
> Executive Summary

PNIF 2022 Workshop at IGF2022, Addis Ababa

> 30 November 2022, 6:30-8:00 am UTC
>
> Summary

PNIF 2022 Webinar 1: What does Internet fragmentation mean to you? Identifying fragmentation and key stakeholders.

> Meeting recording
>
> Summary

PNIF 2022 Webinar 2: What can be done about Internet fragmentation, and who should be doing what?.

> Meeting recording
>
> Summary