ISPs' discriminatory practices and their regulation in Andean America

Hermann Bergmann Garcia e Silva and Manuel Ricardo

INESC TEC, Porto, Portugal
FEUP - Faculdade de Engenharia da Universidade do Porto, Portugal
hermann.b.garcia@inesctec.pt   manuel.ricardo@inesctec.pt

The decisions pertaining to network performance faced by ISPs are closely linked with capacity and traffic management. Capacity management entails choices regarding the network infrastructure, encompassing physical links and interconnecting equipment. Traffic management in packet networks consists of a set of mechanisms (e.g., resource reservation, traffic shaping, buffer management, packet scheduling) that control the network service response to a service request. It can be employed for a specific network element or across a network domain [1].

These mechanisms can interact in various combinations to manage traffic and deliver network performance that fulfills the Quality of Service (QoS) requirements of a range of applications. However, while some of these measures are deemed acceptable network management practices involving traffic differentiation, others may not. Establishing clear criteria is essential and should be done within the regulatory frameworks of diverse jurisdictions.

Hence, discrimination of Internet traffic is intertwined with the notion of ISPs engaging in unacceptable network management practices. The research community has underexplored the characterization of such phenomena, focusing primarily on case-by-case analyses. Notably, Garret et al. [2] conducted an extensive study that presented a taxonomy aimed at unifying terms and concepts pertaining to these practices. This taxonomy classifies practices based on the mechanisms employed by ISPs, their impact on traffic, and how the discrimination is perceived by users. Jordan and Ghosh [3] proposed a framework to categorize network management practices as either reasonable or unreasonable based on the answer to four questions: where and at which layer of the network the traffic management technique is applied, what type of traffic management functionality is implemented, who makes the decision regarding the application of the traffic management practice, and on what grounds are these decisions made.

A systematic categorization of Internet traffic discrimination and its associated practices can be organized into three types: access discrimination, QoS discrimination, and price discrimination, which are visually depicted in Table 1. The first type pertains to the complete or partial restriction imposed by ISPs on accessing specific lawful content, service, or application on the Internet. The second type impacts the QoS by either enhancing or degrading the network performance of a specific service, application, or class of application. The third type involves increasing or decreasing the network access cost to a particular service, application, or class of application.

Table 1. Discriminatory practices

Types of discrimination	Description	Associated practices
Access	Complete or partial restriction of accessing specific lawful content, service, application, or class of applications	Blocking, Filtering
QoS	Enhancing or degrading the network performance of a specific service, application, or class of applications	Throttling, Paid prioritization
Price	Increasing or decreasing the network access cost to a particular service, application, or class of applications	Zero rating

The proposed classification enhances the visibility and understanding of the effects that arise from discriminatory practices in the context of net neutrality. This delineation allows a more objective assessment of State regulations, facilitating the evaluation of network management mechanisms utilized to differentiate Internet traffic and enabling a comprehensive analysis of these actions.

In prior research, scholars have explored from different angles the solutions encountered by States to discipline the isonomic and non-discriminatory treatment of digital traffic on the Internet and the regulatory frameworks established for implementing net neutrality.

For instance, Marsden [4] conducted a comparative analysis focusing on mobile ISPs and their zero-rating practice. The study explored the net neutrality regulations implemented in Brazil, Chile, India, Norway, Netherlands, Slovenia, Canada, the United States, and the European Union. Through the analysis of these cases, the author proposed a descriptive toolkit to guide regulators in addressing net neutrality concerns.

Nguyen et al. [5] conducted a global survey to examine the laws and regulations related to net neutrality across North America, Central America, South America, Asia, and Europe, comparing how each country established the net neutrality principle with a particular emphasis on the zero-rating practice. The findings revealed that only seven out of the twenty countries surveyed had implemented a prohibition on zero rating. The authors also observed the scarcity of comprehensive and up-to-date studies on net neutrality implementation worldwide.

Triviño, Franco, and Ochoa [6] presented the implementation progress of net neutrality regulations in five South American countries: Argentina, Brazil, Chile, Colombia, and Ecuador. The study highlighted three challenges arising from the ambiguous nature of these legal frameworks, resulting in regulatory uncertainty. These challenges include determining the scope of the regulation to different types of data flows and market players, defining acceptable traffic management measures, and evaluating whether commercial practices such as zero rating violate the net neutrality principle.

Garrett et al. [7] conducted an overview of net neutrality regulations in fifty countries, describing the main aspects and comparing the common and divergent features related to the regulatory process of each one of them. According to the method employed for their implementation, the study categorized the net neutrality regulations into three types: guidelines, rules, and laws. It also identified that most regulations

Sessão: Tópico Aberto (Comunicação)

forbid the differentiation of Internet traffic and do not explicitly address the zero-rating practice.

Our study specifically focuses on evaluating the regulatory frameworks of Chile, Colombia, and Peru as representative examples of the Andean America region. The primary objective is to assess the practices of blocking, filtering, throttling, paid prioritization, and zero-rating within these countries, taking into account their early adoption of the net neutrality principle.

For instance, Chile emerged as a pioneer in enacting a law to regulate the Internet that incorporates the principle of net neutrality. On August 26, 2010, Law No. 20.453 added Articles 24H, 24I, and 24J to the General Telecommunications Law, approved by Law No. 18.168 in 1982, which sets out the legal framework for telecommunications in the country. Subsequently, in March of 2011, Decree No. 368 was issued to implement these legal provisions, delineating the features and requirements of net neutrality in Chile and defining the practices deemed incompatible with the law.

In Colombia, net neutrality was established through Law No. 1.450 of 2011, which approved the country's multiannual development plan for the period of 2010 to 2014. In Chapter 2, dedicated to sustainable growth and competitiveness, Article 56 outlines the essential duties of ISPs, with particular emphasis on the obligation to offer each user an Internet access service that does not make an arbitrary distinction of content, applications, or services based on their origin or ownership. To implement the provisions of Article 56, Resolution No. 3.502 was approved by the Communications Regulatory Commission (CRC) on December 16, 2011, defining the regulatory conditions for net neutrality in the country.

In Peru, the first antecedent of a net neutrality regime emerged in 2005 when an isolated article was inserted in the Regulation on the Quality of Public Telecommunications Services, approved by the Supervisory Agency for Private Investment in Telecommunications (OSPITEL) through Resolution No. 040-2005. Article 7º prohibited ISPs from blocking the use of any application within their networks, representing one of the first regulatory efforts in the world to uphold the isonomic and non-discriminatory treatment of Internet traffic [8]. Following this, the net neutrality principle was formally implemented in the country by Law No. 29.904 on 20 July 2012, aimed at promoting the development, use, and massification of broadband. Additional provisions were introduced through Decree No. 014 on 4 November 2013. In 2016, after a period of public consultation, OSIPTEL established the Net Neutrality Regulation with the approval of Resolution No. 165-2016, defining the principles, the permitted, authorized, and prohibited measures, as well as the regime of infringements and sanctions.

The comparative analysis of these legislations reveals a convergence in the prohibition of blocking, filtering, throttling, and paid prioritization. This pattern of alignment becomes perceptible through associating actions that ISPs are prohibited from undertaking, particularly regarding traffic management measures, with the corresponding discriminatory practice. For instance, the verbs "block," "discriminate," "interfere," "prioritize," and "restrict" appear in all three legislations, indicating a shared understanding across jurisdictions. Colombia and Peru also included the verb "degrade" to enhance the awareness surrounding the prohibition of throttling. Nevertheless, it can also be noted that the practice of zero-rating deviates from treatment. In Colombia and

Peru, zero-rating is authorized, whereas in Chile, it is currently tolerated based on the regulator's interpretation of the existing regulations.

Future research will broaden the scope of the analysis by encompassing additional countries and conducting a comparative assessment of each discriminatory practice in their regulatory framework.

References

1. ITU. Series y: Global information infrastructure, internet protocol aspects and next-generation networks. Technical Report ITU-T Y. 2060, International Telecommunication Union, Geneva (2015).
2. Garrett, T., Setenareski, L. E., Peres, L. M., Bona, L. C., Duarte, E. P.: Monitoring network neutrality: A survey on traffic differentiation detection. IEEE Communications Surveys & Tutorials, 20(3), 2486-2517 (2018).
3. Jordan, S., Ghosh, A.: A framework for classification of traffic management practices as reasonable or unreasonable. ACM Transactions on Internet Technology, 10(3), 1-23 (2010).
4. Marsden, C. T.: Comparative case studies in implementing net neutrality: A critical analysis of zero rating. *Scripted*, *13*, 1 (2106).
5. Nguyen, V., Mohammed, D., Omar, M., Dean, P.: Net neutrality around the globe: A survey. In 2020 3rd International Conference on Information and Computer Technologies (ICICT), pp. 480-488, IEEE (2020).
6. Triviño, R., Franco, A., Ochoa, R. L.: Regulación de la Neutralidad de Red en Sudamérica: Una revisión del progreso Net Neutrality and enacted Laws in South America: A Literature Review. *Latin-American Journal of Computing*, *6*(1), 17-26 (2019).
7. Garrett, T., Setenareski, L. E., Peres, L. M., Bona, L. C., Duarte Jr, E. P.: A survey of Network Neutrality regulations worldwide. *Computer Law & Security Review*, *44*, 105654 (2020).
8. Rodríguez, M. M.: Neutralidad de Red en Perú: Una Retrospectiva. Derecho & Sociedad, (49), 203-219 (2017).

Sessão: Tópico Aberto (Comunicação)