

Human Rights Impact Assessment of 5G and 5G-enabled Technologies



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Executive Summary

Introduction Verizon Communications Inc. (Verizon) is a holding company that, acting through its subsidiaries, is one of the world's leading providers of communications and technology products and services to consumers, businesses and governmental agencies. The company's customers range from individual wireless consumers in the United States to global multinational enterprises.

Verizon is committed to operating with respect for internationally recognized human rights, as set forth in its Human Rights Statement. Verizon's most recent Environmental, Social, and Governance (ESG) prioritization assessment identified our human rights policies and practices as foundational to the company's ESG management strategy, alongside business ethics and governance.

In 2018, Verizon was the first company in the world to commercially deploy a mobile 5G network. Today, Verizon offers 5G network service to wireless consumers and businesses in the United States. In addition, Verizon offers a 5G Home Internet fixed wireless access product to individual consumers in the United States, 5G Business Internet and private 5G networks for enterprise customers in the United States, and private 5G networks in certain international markets.

What is 5G?

5G is the fifth generation of wireless technology. 5G introduces connectivity benefits that enable new business uses and developments, and enables faster consumer access to information, products & services. 5G brings faster speeds, lower latency, and the ability to connect large numbers of devices to the mobile network in a given geography. Significant technological developments that rely on 5G include connected vehicles, smart communities, industrial IoT, and immersive education, among many others.

Verizon builds and maintains 5G networks and provides 5G services to consumers and businesses. As a network operator, we are one part of the broader technology ecosystem that is involved in bringing 5G and the applications that work on 5G to consumers and business customers. This ecosystem includes device chipset and hardware manufacturers, network vendors, and companies that develop network-enabled applications.

Overview of the HRIA

Beginning in 2020 and concluding in 2022, Verizon's Business & Human Rights Program (BHRP), an in-house team of human rights lawyers, undertook a comprehensive Human Rights Impact Assessment (HRIA) of 5G and 5G-enabled technologies to assess both the potential human rights impacts of 5G and how Verizon may or may not be associated with those impacts as a network operator.

This HRIA of 5G and 5G-enabled technologies sought to achieve the following objectives:

- Gain a better understanding of the risks and opportunities of 5G and 5G-enabled technologies from a human rights perspective;
- Clarify expected roles and responsibilities of Verizon as a network operator within the 5G technology ecosystem; and
- Inform and support Verizon in executing its 5G strategy in a way that respects human rights.

Verizon engaged Article One, a business and human rights consultancy, to conduct the HRIA. Verizon has prepared this executive summary of the assessment's findings and recommendations.

Methodology The Article One team combined desktop research with access to internal Verizon documents. Article One's work was also informed by extensive engagement with both internal and external stakeholders. The assessment team conducted interviews with 18 Verizon employees from across the company and with 14 expert stakeholders representing civil society, academia, international and multi-stakeholder organizations, and peer companies.

In addition, as part of the assessment, the BHRP and Article One partnered with Verizon's State Government Affairs Community Engagement team to pilot listening dialogues on the impacts and opportunities of 5G and 5G-enabled technologies. We held two dialogues with community members in Rhode Island. The first dialogue included community-based leaders from non-profit organizations representing a diverse set of rights holders, and the second included representatives of small and medium businesses.

Potential Human Rights Risks and Opportunities **Assessment of Risks**

The Article One team evaluated potential human rights risks related to network use, network construction, and supply chain, and concluded that risks related to network use were the most salient risk area for network operators such as Verizon. 5G risks related to network construction and supply chain were found not to differ significantly from risks in connection with business operations in the non-5G context.

Risk areas identified by the assessors as connected to 5G network use, with specific focus on the use of 5G-enabled technologies, included potential impacts on the right to privacy, the right to freedom of expression and information, the right to be free from discrimination, and the right to personal security. In many instances, the identified risks stem from impacts that, while not uniquely attributable to 5G technology, may be heightened with the combination of 5G and other emerging technologies, including artificial intelligence (AI) and the Internet of Things (IoT).

Examples of potential risks that might be associated with 5G network use and 5G-enabled technologies could include:

- *Risks to Privacy* - 5G may enable much more ubiquitous use of IoT devices and augmented/virtual reality environments, which could allow for personal data collection in new ways, in new spaces, and with new levels of precision.
- *Discrimination Risks* - While AI is not dependent on 5G, 5G may enable wider use of third-party AI-enabled applications in the mobile communications space. Such third-party applications may rely on unfairly biased data or may generate unfairly biased outputs. In addition, if there is unequal access to the potential benefits of 5G, including access to 5G-enabled technologies, there may be a risk of a widening digital divide.
- *Risks to Expression* - 5G networks may allow governments to order more precise network shutdowns, which could be targeted at specific groups.
- *Risks to Personal Security* - 5G-enabled applications could be used by repressive governments for more precise surveillance efforts, including with respect to vulnerable and marginalized groups.

For purposes of the HRIA, these risks were identified in connection with the global 5G-enabled technology ecosystem and were not specific to Verizon. In addition, risks were identified without consideration of Verizon's existing or planned mitigation efforts and other potential mitigating factors, including the fact that Verizon's 5G network deployment for consumers is only in the United States, where certain risks may not be as prevalent as in other jurisdictions.

Verizon's Relationship to Risks

The Article One team observed that Verizon's potential roles in the 5G-enabled technology ecosystem will be diverse and dynamic. The assessors found that Verizon's relationship to the potential risks associated with applications using the 5G network use is, in large part, dependent on Verizon's role in bringing use cases to market.

In most instances, as with 4G, Verizon will provide 5G connectivity to enterprise customers or individual consumers without visibility as to the ways in which that connectivity will be used. In these circumstances, Verizon's role and responsibility to mitigate any such impacts will be quite limited.

In other instances, Verizon may support enterprise customers as a technology partner by enabling use cases powered by 5G and/or multi-access edge computing ("MEC"), as provided by third-party cloud service providers. Verizon's visibility to 5G-enabled use cases will vary considerably. Potential examples of Verizon's different roles and level of visibility could include: selling 5G connectivity to systems integrators without knowledge as to the ultimate end customers; marketing, referring, and/or selling 5G-enabled solutions developed by third parties; and developing or co-developing 5G-enabled solutions.

Verizon's level of responsibility for the potential impacts of 5G-enabled use cases will be highest when the company works with enterprise customers or partners to co-develop and sell solutions. In those cases, Verizon will be expected to conduct due diligence and should seek to ensure that appropriate steps are taken to mitigate the risk of adverse impacts. Verizon's level of responsibility to mitigate human rights risks will be lowest in instances in which its visibility as to actual or potential end use is limited or non-existent. Verizon could seek to mitigate risks in such cases through measures such as acceptable use policies or provisions, and through engagement in collaborative efforts to develop industry guidance for responsible use of 5G-enabled technologies.

As a network operator, Verizon should also continue to maintain appropriate governance and oversight measures to help ensure that potential impacts to privacy and free expression in connection with government requests are mitigated.

Community Perspectives on Risks and Opportunities

During the community dialogue sessions that were held as part of the HRIA, community representatives noted that 5G is a powerful technology and that it will be important to address digital divide concerns as part of the 5G rollout.

One participant stated that "[digital] literacy is the issue. We can get them a device, but does the person know how to use a computer? We haven't invested in that type of workforce development. We have to take a step back because that's part of the puzzle that needs to be fixed." Another observed "[t]here is a need to educate small businesses and startups on which technology they need based [on] their industry. Many times, these businesses are overwhelmed with choice and often make the wrong decision. Also, they're faced with the expenses of upgrading their technology."

Community members observed that there is an opportunity for Verizon as a network

operator to help promote both access to connectivity and to foster the skills necessary for individuals and organizations, including small businesses and nonprofits, to use 5G connectivity and associated technologies.

Recommendations Article One's recommendations to Verizon included:

- Develop principles and guidelines for responsible innovation and deployment in connection with Verizon's provision of 5G and 5G-enabled technologies.
- Continue to integrate human rights commitments into internal decision-making processes, including: due diligence with respect to customers, suppliers, and 5G-enabled technologies; public policy strategies connected to responsible and equitable 5G deployment; responses to government requests; and climate change mitigation strategies.
- Continue to establish internal cross-functional teams to assess the risks associated with 5G-enabled technologies and to escalate potential issues to top-level decision-makers.
- Continue to engage industry partners, enterprise customers, external experts, and potentially impacted stakeholders with respect to the human rights risks, impacts, and opportunities of 5G.
- Continue to leverage different mechanisms for communication and engagement with enterprise customers and consumers regarding the responsible use of 5G and 5G-enabled technologies. These mechanisms could include contract language, acceptable use policies, and guidance and training on best practices.
- Identify opportunities to engage in multi-stakeholder forums to discuss human rights issues (e.g., digital rights, inclusive and equitable connectivity) relevant to the 5G environment.
- Continue to identify appropriate opportunities to engage with industry partners and ecosystem members on new and emerging issues at the intersection of 5G and human rights and to explore evolving roles and responsibilities of corporate actors in the 5G ecosystem.
- Continue to support digital inclusion by providing digital literacy resources for students and small businesses through Verizon Innovative Learning Schools, and through Verizon's Small Business Digital Ready and SkillForward programs.

Next Steps Verizon will utilize the results of the HRIA to facilitate our work on responsible deployment of 5G and 5G-enabled technologies, including by continuing to assess our human rights governance and due diligence processes.

As led by the BHRP, we expect our efforts to include: continuing to integrate human rights considerations into product, vendor, and customer due diligence review processes; continuing to foster agile cross-functional review teams to assess the risks and opportunities associated with 5G strategy and deployment and to escalate issues, as necessary, for senior review; continuing to work with colleagues to assess and mitigate potential risks in connection with government requests; and continuing to assess and implement mechanisms to promote responsible use of 5G by customers.

Examples of efforts already undertaken include:

- The BHRP has worked with Verizon Business Group lawyers to develop processes to conduct due diligence on potential arrangements with third-party enterprises in which Verizon may support more-sensitive 5G-enabled use cases.
- The BHRP worked with an internal cross-functional legal team to develop guidance for use by product managers and product lawyers on potential risks associated with use cases involving facial recognition technology.
- We continue to assess and leverage opportunities to work with colleagues across the business to engage in public policy discussions and standard-setting initiatives to promote deployment of 5G and 5G-enabled technologies.
- Verizon is working to implement features in the 5G technical standards that enhance the privacy and security of users, including the enhanced protection of user-identifying metadata in transmission.
- In 2021, Verizon joined the Global Network Initiative, becoming the first U.S.-based telecommunication company to do so. The GNI is the leading multi-stakeholder initiative in the technology sector and adherence to the GNI Principles has emerged as a global standard for the protection of rights, including privacy and freedom of expression, in the technology ecosystem.

Looking ahead, we will continue to work with partners and colleagues in the broader 5G-enabled technology ecosystem to identify and to seek to address the human rights risks and opportunities of 5G. We recognize that other companies have, and will, perform HRIAs in connection with 5G, and that industry efforts are underway to map the human rights impacts and responsibilities of different actors in the technology ecosystem. In this context, we hope to be a partner in promoting and enabling responsible 5G deployment.