

CONNECTING PEOPLE ON THE MOVE


The Humanitarian's Duty of Care

AUGUST 2020

Summary

In June 2019, Mercy Corps and the Signal Program at Harvard Humanitarian Initiative surveyed residents of two refugee camps along the northern Italian border in Como and Ventimiglia. Drawing on Signal's research into migrant Internet connectivity challenges and health impacts, and Mercy Corps' sector-leading work on refugee information access, the research team conducted a series of quantitative surveys, qualitative interviews, and observation. This project asked: How does Internet connectivity support wellbeing among people on the move? What standards should exist to support connectivity in humanitarian settings? What challenges remain for the sector to realize the full human rights of those it seeks to serve?

Based on this research and prior study among Syrian refugees,¹ at least one answer to those questions is clear: Internet connectivity positively correlates to reduced depression and anxiety among migrants and refugees, and connectivity has a direct relationship to improved measures of psychosocial wellbeing. Humanitarians invested in the resiliency and positive health outcomes of people on the move should take note of these critical findings. A 2016 report commissioned by the United Nations High Commission for Refugees (UNHCR) documenting refugee mobile use found that:



“... Without access to up-to-date information on events back in their home countries as well as in their countries of asylum, refugees cannot access basic services such as health and education or make informal decisions on how to start improving their lives. A lack of connectivity constrains the capacity of refugee communities to organize and empower themselves, cutting off the path to self-reliance.”²


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¹ Danielle N. Poole, Bethany Hedt-Gauthier, Nathaniel A. Raymond, and Till Bärnighausen. “Major depression prevalence among Syrian migrants seeking asylum in Greece: a cross-sectional survey.” *The Lancet Global Health*, 6. (March 2018) [https://doi.org/10.1016/S2214-109X\(18\)30149-9](https://doi.org/10.1016/S2214-109X(18)30149-9) ; Danielle N. Poole, Mark Latonero, and Jos Berens. “Refugee Connectivity: A Survey of Mobile Phones, Mental Health, and Privacy at a Syrian Refugee Camp in Greece.” Harvard Humanitarian Initiative and Data & Society (April 2018) https://hhi.harvard.edu/sites/default/files/publications/refugee_connectivity_web.mb4_8-2.pdf

² Alan Vernon, Kamel Deriche, and Samantha Eisenhauer, “Connecting Refugees: How Internet and Mobile Connectivity can Improve Refugee Well-Being and Transform Humanitarian Action,” UNHCR, September 2016, <http://www.unhcr.org/5770d43c4.pdf>.

Although humanitarians cannot rely upon digital communication technologies alone to reach people on the move, Internet connectivity is a key component to realizing the contemporary humanitarian’s objectives as an effective aid provider. Refugee camps comprise unique information environments in which social connectedness holds heightened importance for thriving: these camps often share consistent infrastructure limitations and related information deficits which must be supplemented.³ Connectivity’s necessity is perhaps most consistently demonstrated when assessing its cost relative to income; in 2016, Vernon et al found that mobile phone connectivity consumed one third of refugees’ disposable income.⁴ In 2019, this study found that respondents spent a median 13.5 percent of monthly income (13.5 of 100 €) on mobile phone plans; among those who owned their mobile device, 90.91 percent reported owning a smartphone. Connectivity cannot be considered a luxury for the refugee – it is a lifeline.

For humanitarians and funders ready to invest in connectivity, this white paper and the related Humanitarian WiFi Guide illustrate ethical and practical considerations to help shape that investment. These efforts must primarily reflect the needs of the refugee, their dignity, and the humanitarian’s duty of care.



“Where, after all, do universal human rights begin? In small places, close to home – so close and so small that they cannot be seen on any maps of the world. Such are the places where every man, woman, and child seeks equal justice, equal opportunity, equal dignity without discrimination. Unless these rights have meaning there, they have little meaning anywhere.”

— Eleanor Roosevelt at the UN Commission on Human Rights, 27 March 1958

Forced Migration Rising

Migration and the challenges that come with it loom large in the forecasts of states and humanitarians alike. According to the Global Risks Report, “From 2008 to 2016, over 20 million people a year have been forced from their homes by extreme weather such as floods, storms, wildfires and hotter temperatures... defense and intelligence agencies are now regularly warning that climate change could trigger conflicts severe enough to uproot entire populations.”⁵ Among countries already experiencing severe and prolonged conflict, such as northern Nigeria, Somalia, South Sudan, and Yemen, severe weather conditions exacerbate civilian

³ Karen E. Fisher, “Information Worlds of Refugees,” *Digital Lifeline? ICTs for Refugees and Displaced Persons* (ed. Carleen F. Maitland). MIT Press: 2018, 88.

⁴ Vernon et al 2016

⁵ World Economic Forum, “The Global Risks Report 2020,” 31. Retrieved from http://www3.weforum.org/docs/WEF_Global_Risk_Report_2020.pdf

vulnerability and forced migration.⁶ Populations on the move – displaced from their homes by climate, conflict, or both – are not a momentary phenomenon. Migration is the new normal.

For those forced to make their journey, humanitarians have a duty to uphold their dignity and protection along the way and at their point of arrival. At each stage, the migrant and refugee are at significantly increased risk of exploitation and assault; those detained in Libya have been targeted for “physical and sexual violence, forced labor, recruitment by militias, ... being left without food, water and medical care, and ... used as ‘human shields’.”⁷ Those who attempt a Mediterranean Sea crossing travel the deadliest migration route in the world,⁸ despite decreases in overall crossings, mortality rates spiked from one in 38 in 2017 to one in 14 of those attempting the passage to Europe in 2018.⁹ Arrivals in Greece and Spain increased by 228 and 188 percent respectively from 2017 to 2018 along the Eastern and Western Mediterranean routes, while arrivals in Italy plummeted from 95,200 to 18,500 over the same period.¹⁰ Many individuals making these journeys do so with information deficits, having limited access to ICT connectivity due to cost, crossing state borders, phone theft, infrastructure limitations, and other factors. This often forces reliance on rumors, smugglers and unverified information¹¹ to make life-altering decisions. Findings from research Mercy Corps conducted in partnership with the Yale Lowenstein Law Clinic in Italy showed that access to accurate information can be lifesaving. Those interviewed often cited the fact that, if they had been able to access information before and along their journey, they may not have made it and/or they would have been better prepared to identify negative actors seeking to exploit and abuse them.

Why Connectivity Matters

Over the past four years, the Signal Program on Human Security and Technology (Signal) at Harvard Humanitarian Initiative (HHI) has studied these journeys, the trauma encountered during them, and the environments humanitarian actors foster along the way. Led by public health expert Danielle N. Poole, Signal’s research explores how the psychosocial wellbeing of populations in crisis – especially populations on the move – is impacted by their access to mobile information and communications technology (ICT). Early findings from Greece in 2016 suggested that a positive association exists between access to mobile

⁶ Katie Peters, Leigh Mayhew, Hugo Slim, Maarten van Aalst and Julie Arrighi, “Double vulnerability: The humanitarian implications of intersecting climate and conflict risk,” ODI, Working paper 550 (March 2019), 5. Retrieved from <https://www.odi.org/sites/odi.org.uk/files/resource-documents/12647.pdf>

⁷ Sally Hayden, “‘I Saw Hell’: Under Fire inside Libya’s Refugee Detention Centres,” *The Guardian*, July 10, 2019, sec. Global development, <https://www.theguardian.com/global-development/2019/jul/10/under-fire-libya-refugee-detention-centres>.

⁸ Seema Jilani, “What Refugees Face on the World’s Deadliest Migration Route,” *The New York Times*, April 26, 2018, sec. Magazine, <https://www.nytimes.com/2018/04/26/magazine/refugees-mediterranean-rescue.html>.

⁹ “Desperate Journeys - Refugees and Migrants Arriving in Europe and at Europe’s Borders - January – December 2018,” Desperate Journeys (UNHCR, September 2018), <https://www.unhcr.org/desperatejourneys/>.

¹⁰ Ibid, 8.

¹¹ Melissa Carlson, Laura Jakli, and Katerina Linos, “Rumors and Refugees: How Government-Created Information Vacuums Undermine Effective Crisis Management,” *International Studies Quarterly* 62, no. 3 (September 1, 2018): 671–85, <https://doi.org/10.1093/isq/sqy018>.

technology and improved psychosocial wellbeing, i.e., decline in major depressive disorder.¹² In Italy, the Signal team sought to replicate its findings from this prior study and more closely examine the relationship between connectivity and psychosocial wellbeing.

Since 2016, in response to the Syrian refugee crisis in Europe in partnership with Cisco, Mercy Corps has provided equipment for WiFi hotspots along Europe's primary migration routes. These routes include Greece, Serbia and Italy. Mercy Corps partners with camp management and local community centers to provide equipment, installation and network monitoring free of cost. Internet subscription fees are paid by the local partner. To date, Mercy Corps has served over 511,868 individuals with free, accessible connectivity in over 46 locations and with up to 6 partners at a given time, working with organizations like NetHope who provide connectivity to populations in crisis.

In 2019, Mercy Corps and the Signal team conducted field research at two Mercy Corps-supported sites in Italy: a parish-led effort in the Como suburb of Rebbio, and Roya Camp, managed by the Italian Red Cross outside Ventimiglia. Prior to the study, Mercy Corps had installed Cisco Meraki WiFi equipment at each site. The research team's objective was to rigorously measure the degree of access across multiple dimensions (device type, duration, cost, use purpose) while simultaneously evaluating psychosocial wellbeing among those surveyed. Enumerators were drawn from the local refugee community itself, with fluent or native speakers of Arabic, French, Pashto, Urdu, Italian, English and various West African, European and Southeast Asian languages. The entire study was conducted with Institutional Review Board approval by Harvard University, local engagement of site managers, and oversight of the Italian regulatory *prefettura*. Each site was observed and surveyed, census-style, over a one-week period.

ROYA CAMP: ISOLATED BY DESIGN

In 2016 the Italian Red Cross established a transit camp (Roya Camp) to accommodate the influx of refugees exacerbated by the 2015 closure of the French border.¹³ In June 2019, the camp housed an average of 212 occupants daily, the majority of whom were single men; 144 occupants on average were present in the camp during survey hours. Women with children and families represented 5 percent of the camp population, which varied daily with newcomers and those leaving on the next stage of their journey. Although camp residents were free to leave at any time, a nightly curfew formally closed the gates each day by 20:00 during fall/winter and 21:00 during spring/summer. Camp residents were each assigned to a container unit in which they could store personal belongings and sleep on provided cots; women, families and unaccompanied minors were assigned to a distinct but contiguous area of the camp. A small trailer was specifically designated and equipped for mobile device charging, while a nearby 'Trace the Face' identification kiosk¹⁴ was available to support refugee's efforts to identify and connect with family and contacts who might be searching for them.

Roya Camp is located approximately fifteen minutes' driving distance (4 km) from Ventimiglia's train station and city center. Next to an inactive industrial park, the camp is best accessed by vehicle; a walk to the train

¹² Poole et al March 2018.

¹³ Giulia Capitani, "Nowhere but Out: The Failure of France and Italy to Help Refugees and Other Migrants Stranded at the Border in Ventimiglia," Briefing Paper (Oxford, UK: Oxfam GB, June 2018), <https://doi.org/10.21201/2018.2708>.

¹⁴ ICRC, "Bringing families together, with a new interface," 27 June 2019. <https://blogs.icrc.org/inspired/2019/06/27/families-together-trace-face-corners/>

station will take approximately 1 hour, traveling along a busy highway without access to safe pedestrian walkways. No shops, food vendors, or municipal transit exist next to or nearby the camp, limiting access to goods, transit and local employment opportunities for those able to seek them. Taxi service to the camp is readily available from the Ventimiglia train station, at an average cost of 12 euro (€) per one-way trip; taxi service from the camp to the city, however, is less easy to arrange and requires a phone to contact a local company, using Italian to communicate. Camp residents were most often observed traveling by foot when leaving the camp. This geographic isolation from Ventimiglia and its surrounding residential communities carries important implications for humanitarians' ability to provide a full range of support, disproportionately raising the costs of offline forms of connectivity relative to the local population. As discussed below, these conditions are the norm for refugee camps, creating zones of connectivity poverty and increasing dependence upon online means to access information.

Due to the nature of the camp's location and its design, the research team primarily observed Roya Camp residents in contact with one another, with Red Cross volunteers, camp staff, local police, and other research team members (including local enumerators). Local enumerators were already familiar with the camp environment and often knew some residents prior to the study; at Roya Camp, one enumerator worked part-time as a custodial staffer, while another resided the camp itself. This familiarity was an intentional aspect of the study's design and the research team's recruitment efforts.

Absent surrounding infrastructure and isolated from the city of Ventimiglia, mobile Internet connectivity at Roya Camp was essential to independently access information in residents' native languages based on their individual needs. Computers and phones owned by the Red Cross could be accessed via staff or authorized volunteers during the workday; classroom computer access was restricted when staff or volunteers were unavailable to supervise. Open WiFi for camp residents was available from 17:00 to 23:59 every day (seven hours total) at the beginning of the observation period. By the end of the observation period, a Mercy Corps technician and research team member had revised the WiFi access period to provide open access to residents from 17:00 to 08:00 the following day, more than doubling Internet accessibility time to 15 hours and significantly increasing overlapping time with home countries several time zones away. This change was executed in coordination with the Red Cross camp management team. WiFi access is consistent throughout the entire extension of Roya Camp, with WiFi antennas positioned at the entrance, midpoint and far end of the camp. This range increases accessibility for all residents, minimizing lodging preference due to WiFi signal strength.

WiFi access limitations appeared to be primarily due to bandwidth, an issue discussed in more detail below. Absent surrounding infrastructure for high-speed internet service provider (ISP) services, Roya Camp residents had little alternative to the camp's limited WiFi during the evening and early morning hours, unless they could afford to pay for private cellular service. Even with access to cellular service, network coverage appeared to be largely insufficient to support steady Internet usage on mobile devices; this was consistent with the camp's relative isolation compared to nearby towns and the Ventimiglia city center. Research team members attempting to utilize cellular networks at Roya Camp could not consistently access Internet or voice over internet protocol (VOIP) services such as WhatsApp, limiting communications capacity largely to messaging. Research by Schmitt et al indicate that the geographic and infrastructure isolation observed at Roya Camp are consistent with the features of other refugee camps, including limited-to-no cellular network

coverage and bandwidth-exhausted Internet access.¹⁵ Short message service (SMS) remained the most consistent and universally device-accessible method of digital communication in these ICT infrastructure-poor environments due to its congestion-resilient design.¹⁶ However, SMS's known security flaws¹⁷ and format constraints make it a limited medium to support refugees' needs and provide effective, protected humanitarian aid. Research by Marie Gillespie et al map digital pathways and social media networks among refugees, illustrating the complexity and life-saving importance mobile phones and Internet connectivity play throughout the journey and at points of arrival.¹⁸

REBBIO PARISH: INTEGRATED AND ONLINE

Rebbio parish, an urban neighborhood outside downtown Como, provided a community at once distinct to its refugee population and integrated with local Italian residents. The WiFi connectivity hub in the parish is based at a community center with multiple floors dedicated to classroom education, social activity, and vocational training for all generations of refugees and local parish members, as well as offices for support staff. The communal area served as the primary location for the research team to recruit survey participants each day during its one-week observation period. Upper floor classrooms supported with WiFi signal were used to provide more privacy for survey participants.

Individuals and families were housed in small apartments adjacent to the church. At the time of the study, Rebbio's program hosted 50 people. Residents included families of women and children, pregnant women, single men and unaccompanied minors. The Rebbio parish complex is itself an integrated part of the neighborhood, readily accessible by public transit to the rest of the city and offering a multitude of services to longtime local parishioners and the refugee community alike. These layers of structural integration are no accident; the parish leadership makes an explicit, dedicated effort to integrate its asylum outreach and activities into all aspects of its ministry to the community.

Connectivity infrastructure in Rebbio appeared more robust (i.e., stronger signal strength per person throughout the day) both via the Cisco-supported WiFi installation at the parish community center and via local cellular networks. Support staff, as well as the research team, were able to conduct routine activity online whether on cellular networks or the shared community WiFi. Unlike Roya Camp, bandwidth did not appear to be a significant barrier to Internet access in the Rebbio community center. Although it was not possible to gain entry to and test signal strength in the privacy of residents' rooms, omnidirectional antennas installed on Rebbio's WiFi equipment typically reach 100 meters and cover all site locations. (Note: Radio signal may be attenuated by trees, building material and other sources of radio interference.) Those who preferred the

¹⁵ Paul Schmitt et al., "Cellular and Internet Connectivity for Displaced Populations," in *Digital Lifeline? ICTs for Refugees and Displaced Persons*, ed. Carleen Maitland (Cambridge, MA: The MIT Press, 2018), 116.

¹⁶ Ibid 118; Ken Banks, Sean Martin McDonald, and Florence Scialom, "Mobile Technology and the Last Mile: 'Reluctant Innovation' and FrontlineSMS," *Innovations: Technology, Governance, Globalization* 6, no. 1 (January 1, 2011): 7–12, https://doi.org/10.1162/INOV_a_00055.

¹⁷ Taylor Hatmaker, "Coinbase Vulnerability Is a Good Reminder That SMS-Based 2FA Can Wreak Havoc," *TechCrunch* (blog), accessed August 7, 2020, <https://social.techcrunch.com/2017/09/18/ss7-coinbase-bitcoin-hack-2fa-vulnerable/>.

¹⁸ Gillespie, Marie, Souad Osseiran, and Margie Cheesman. "Syrian refugees and the digital passage to Europe: Smartphone infrastructures and affordances." *Social Media + Society* 4.1 (2018): 2056305118764440.; Marie Gillespie et al., "Mapping Refugee Media Journeys: Smartphones and Social Media Networks," Research Reports or Papers (The Open University / France Médias Monde, May 13, 2016), <http://www.open.ac.uk/ccig/research/projects/mapping-refugee-media-journeys>.

privacy of their rooms to the shared space of the community center, particularly those without direct line-of-sight to the Access Point, may have relied more heavily on paid cellular data network infrastructure than those operating primarily in the shared public spaces where WiFi signal was most direct. Further study is necessary to determine the extent of such discrepancies and potential gender gaps resulting from relative access.

Isolation vs. Integration - Space Matters

Each site offered a unique experience for those living there. Given the diverse nature of accommodations, including local hosts, informal shelters, formal camps, and religious-affiliated missions, this study's findings could not be considered comprehensive. However, the contrast between sites provides some insights into how varied refugee ICT connectivity can be and how connection quality can affect wellbeing.

The physical location of housing and aid provision impacts the quality and capacity of WiFi access per person. The primary issue is one of undergirding infrastructure: more remote locations that lack other forms of communal infrastructure (e.g. public transportation and sewer systems) are more likely to lack ICT infrastructure sufficient to meet the needs of the vulnerable refugee population. Refugee camps organized outside pre-existing residential communities, as well as missions dedicated to reaching the disproportionately high number of refugees living in rural and infrastructure-poor areas,¹⁹ lack shared definitions of what ICT infrastructure should look like compared to the Sphere Standards applied to water, sanitation, health, shelter, and healthcare. Although the Roya site offered support to a higher number of people on the move, the Rebbio parish offered its residents something few transit camps can: the ability to become part of a stable community with pre-existing communal infrastructure that facilitates access to other forms of aid. From an ICT network infrastructure perspective, it is the stability and growth of the community – its long-term trajectory – that makes it an increasingly viable candidate for investment and service improvement. The contrast between these sites and their relationship to effective aid provides a compelling area for further research into best practices for sustainable incorporation of refugee communities into host nations.

In addition to the new Humanitarian WiFi Guide, Mercy Corps helps site managers provide connectivity with technical expertise in creating solutions to reach remote locations, providing ongoing support and feedback to the site administration following installation. Roya Camp, for example, has been advised by the Mercy Corps team regarding a new vendor capable of providing more bandwidth at a reasonable price that could solve many of the bandwidth issues observed during this study. Utilization of existing private-NGO partnerships, such as the provision of Cisco Meraki technology, further supports optimum network performance given the bandwidth available.

For example, before the installation of the Cisco Meraki equipment at Roya Camp, bandwidth was so limited that a single user streaming video and audio content could limit access for every other user. This created a 'first come, first served' effect that frustrated residents, convincing many that Internet access via free WiFi was so insufficient as to be effectively absent. Restrictions were therefore placed on the network through traffic-shaping rules and bandwidth-per-user limits. By restricting some forms of content, camp administrators seek to increase overall access to available bandwidth.

¹⁹ Schmitt et al 117

To avoid user frustration, it is important to set expectations early regarding the connectivity quality they will experience and why. Illustrated multilingual guides and should use everyday examples:

Sample | “Due to infrastructure challenges, you will be able to send messages, but will not be able to stream video or hold video calls.”



Dedicated efforts to provide alternatives and forms of entertainment – particularly video and music downloads – could offset attempts to stream such content at such a high collective cost to the camp population. By providing dedicated streaming opportunities or pre-downloaded content, as well as shared access to these sources of information and entertainment, camp managers may be able to more effectively enhance access and speed for other, lower latency uses. It is important to note that ‘entertainment’-oriented mobile apps have a variety of benefits to camp residents, including essential psychosocial, language, information and educational benefits. Providing a wider range of options and multi-lingual content, camp managers may be able to help their residents connect socially and access other forms of support (i.e. vocational and legal aid) by providing shared and semi-private spaces that help relieve personal and social stressors.

Mediated Access: Ethical and Practical Humanitarian Dilemmas

In both sites studied, access to free WiFi was mediated through several variables:



Time | When was access possible?



Capacity | To what extent was access possible for an individual user?



Space | Where was access possible?



Device | Who could access open WiFi?



Content | What kind of content could a user access?



Cost | How much did access cost the user?

Some variables were primarily defined by state authorities or the site's management. Others were defined through the absence of support. Capacity and space variables, which defined the extent to which users could access content at different latency rates, is discussed in greater detail above. This section will focus on the implication of these variables for humanitarian connectivity standards and ethical practices.

TIME AND CAPACITY

Residents at each site had limited access to WiFi, either in whole or in part, depending on the time of day. In Roya Camp, WiFi access was initially closed to residents from 08:00 to 17:00; only camp administrators and support staff were given password access to WiFi during this workday period. Ethernet-supported Internet was limited to connected devices managed by camp administrators. At Rebbio, users appeared to have 24-hour access but faced content restrictions on video & music and limited bandwidth on social media platforms from 09:00 to 17:00.



ARTICLE 19

“Everyone has the right to freedom of opinion and expression; this right includes freedoms to hold opinions without interference and to seek, receive, and impart information and ideas through any media and regardless of frontiers.”

- Universal Declaration of Human Rights

Time restrictions, whether in whole or in part, consistently relate to bandwidth limitations. The more limited bandwidth is, the less time is available to users both at a macro level (i.e., ability to connect to any service for any length of time) and at a micro level (i.e., ability to complete a task or activity requiring connectivity in

an efficient amount of time). While further study is necessary to determine whether and how bandwidth restrictions cause downstream inefficiencies producing unique harms to refugee and migrant communities, it is clear that capacity limitations may force an economically disproportionate burden on these communities by pushing users toward paid individual data plans with fewer restrictions than overburdened shared WiFi networks. Existing research²⁰ and content preferences identified during this study clearly indicate that high-bandwidth audiovisual applications carry significant value to refugee users that should not be dismissed or overlooked.

SPACE, DEVICE, AND GENDER

Many mobile device users are familiar with the geographic restrictions that insufficient infrastructure places upon use. Whether due to material barriers breaking signal waves, distance from routers, or distance from cell phone towers, physical infrastructure dictates which spaces can support wireless connectivity. This study examined infrastructure primarily in shared spaces which, while available to all site residents, were predominantly utilized by men. Study limitations prevented a more in-depth gender analysis of these conditions; gender representation among respondents at Roya Camp was particularly non-representative of the overall camp population. It is essential that future research pursue strategies to investigate the full dimensions of gender divides in connectivity,²¹ including sufficient time and resources to access populations that may be less present in public spaces and assessing connectivity in private and more secluded spaces. Connectivity occurs both privately, determined by individual access characteristics, as well as publicly, determined by community access factors. Evaluating gender inclusivity must include both measures of individual- and community-level connectivity. Particularly in settings with gendered spaces, understanding equities in community-level connectivity is critical to ensuring the inclusion of women and girls. Additional time to build relationships with local, trusted interlocutors prior to research commencement is essential to ensure a gender-representative sample.

Being able to use physical spaces with robust connectivity maximizes both time available for seeking information and fuller utilization of mobile devices. Among those surveyed, 60 percent reported owning the device they use; 91 percent of owners reported that they also shared this device. Among respondents who own a mobile device, over 90 percent own a smartphone, consistent with market research indicating the significant rise of smartphone ownership globally.²² Ownership of a mobile device, particularly a smartphone capable of more complex functions than a typical feature phone, indicates that the user may increase secure access to sensitive information and services that require encrypted, personal data disclosures related to health, wellbeing, and legal status. Internet connectivity and the encryption it enables supports safer communication than that provided by SMS alone.²³

²⁰ Kevin Smets, "The Way Syrian Refugees in Turkey Use Media: Understanding 'Connected Refugees' through a Non-Media-Centric and Local Approach," *Communications* 43, no. 1 (March 26, 2018): 113–23, <https://doi.org/10.1515/commun-2017-0041>.

²¹ Oliver Rowntree, "Connected Women: The Mobile Gender Gap Report 2019" (GSM Association, February 2019), 12, <https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2019/02/GSMA-The-Mobile-Gender-Gap-Report-2019.pdf>.

²² GSMA, "The Mobile Economy 2020" (London, UK: GSM Association, 2020), 11, <https://www.gsma.com/mobileeconomy/>.

²³ M. M. Khan, M. Bakhtiari and S. Bakhtiari, "An HTTPS approach to resist man in the middle attack in secure SMS using ECC and RSA," 2013 13th International Conference on Intelligent Systems Design and Applications, Bangi, 2013, pp. 115–120, doi: 10.1109/ISDA.2013.6920718.

CONTENT

Content research and analysis was conducted through a structured quantitative survey of camp residents using a census method, and through secondary analysis of WiFi network traffic patterns collected via the Cisco Meraki Dashboard. Meraki data collection monitors WiFi network traffic through site analysis and classification (e.g., social media, streaming video) as well as indicators of total network use and bandwidth; the platform's tools allow network managers to restrict access to specific types of websites in whole or for specific times of day (e.g., bit torrent download sites, streaming audio-visual content). Network traffic management helps ensure that WiFi bandwidth is utilized effectively and thus promotes overall Internet connectivity. Data privacy and security risks are raised whenever individual mobile devices are identifiable and their Internet usage trackable. Ensuring that users have the *least set of privileges necessary*²⁴ to manage the network and analyze data reports that include unique mobile device identifiers should be part of any humanitarian data responsibility plan. Implementing Acceptable Use Policies with Privacy Consent is also recommended, as well as strong administrative access controls and time-limited data retention policies. Platform designers and humanitarian clients should be aware that such data capture can be considered sensitive, as it provides information that law enforcement and others can use to track the geolocation and traffic of specific devices, producing digital and hardware fingerprints that can be used to surveil users.²⁵ Humanitarians should seek to minimize data collection whenever possible, restrict its use to specific purposes that benefit the affected population, and treat unique identifying information (i.e., device identifiers) as sensitive data that may pose a protection risk to beneficiaries. Whenever possible, providing guides to open WiFi users about secure Internet browsing is consistent with maintaining beneficiaries' rights.

COST

Accurately estimating connectivity costs requires a comprehensive assessment of all the factors outlined above. When new ICT infrastructure must be established at a camp location, the baseline cost of installation may be disproportionately high. When content needs exceed infrastructure bandwidth, the costs to users rise in time required to establish connectivity at sufficient rates to complete activities. When only public spaces support connectivity, it creates hidden costs that may disproportionately impact those restricted by social norms and privacy concerns (i.e., women and LGBTQIA+ persons). For example, a baseline assessment on information needs in Puerto Rico found that 26% of respondents were worried about their online safety or feared cyber-attacks.

This study attempted to assess cost across two factors: an estimate of the participant's current income, and an estimate of income allocated to data service (personal wireless connectivity per mobile device). Among those surveyed at Roya Camp, the median monthly income was 100 euro. Of the 98 percent of respondents who owned a phone, 100 percent reported paying for a mobile plan at a median rate of 15 euro per month, representing 15 percent of median respondent income.

Percent of income spent on connectivity is an important measure for humanitarians to continue to monitor both as a need indicator and to assess success in achieving sufficient bandwidth at camp locations. As humanitarians expand connectivity for people on the move, the complex web of interconnected factors that mediate access must be systematically assessed. Ensuring equitable, safe and inclusive access to

²⁴ J.H. Saltzer and M.D. Schroeder, "The Protection of Information in Computer Systems, Proc. IEEE, vol. 63, no. 9, 1975, pp. 1278–1308.

²⁵ Nick Briz, "This Is Your Digital Fingerprint," *Internet Citizen* (blog), July 26, 2018, <https://blog.mozilla.org/internetcitizen/2018/07/26/this-is-your-digital-fingerprint>.

connectivity requires gender- and culture-sensitive approaches to site design, network installation, and ongoing support. NetHope's work to aggregate humanitarian ICT demand – bundling multiple organizations' needs into a single package to negotiate internet service provision rates – represents one creative channel humanitarians can use to collectively define and advocate for a shared standard of connectivity.²⁶

Connectivity as a Human Right

Connectivity's importance is evident in both its realization and its denial. It exists in every aspect of society: whether expressed in social networks, forms of governance, or economies, connectivity is the prerequisite condition for people to live and thrive. The contemporary association of connectivity with information and telecommunication systems (ICTs) mirrors but does not replace the fundamental functions of social interconnectedness. These technologies support, advance and exponentially amplify pre-existing channels and help create new dimensions of social support.

It should come as no surprise that the links between connectivity and the right to life, liberty, and security of person can be illustrated through existing international human rights and humanitarian law.²⁷ That these rights carry humanitarian obligations follows.²⁸ Humanitarians and governments are well aware of the power and potential of ICT connectivity, although current humanitarian practice tends to favor the humanitarian's data collection over the beneficiary's connectivity. Utilizing a human rights-based approach to define humanitarian obligations and standards can help the sector align its practices with its existing recognition of connectivity's importance, particularly regarding the lives and journeys of refugees. A 2016 resolution by the United Nations Human Rights Council on the promotion, protection and enjoyment of human rights on the Internet summarizes many of the relevant international humanitarian and human rights legal precedents, as well as the various nuances and considerations humanitarian practitioners must account for in their efforts to fulfill these rights.²⁹

The stakes of this effort should not be underestimated. In authoritarian and illiberal regimes alike, asymmetrical control of information and connectivity reinforces asymmetries of violence, poverty, and illness. If the disruptive potential of digitally empowered reform was illustrated by social uprisings in the early 2010s, the latter end of the decade is best defined by digitally accelerated dystopias. The art of the 'Internet shutdown' is marked not only by loss of Internet access, but by blackouts of most means of

²⁶ "Demand Aggregation for Improved Connectivity | NetHope Solutions Center," accessed August 11, 2020, <https://solutionscenter.nethope.org/program-areas/connectivity-infrastructure/demand-aggregation-for-improved-connectivity>.

²⁷ Greenwood et al, "The Signal Code: A Human Rights Approach to Information During Crisis," Harvard Humanitarian Initiative (2017). <http://hhi.harvard.edu/publications/signal-code-human-rights-approach-information-during-crisis>; ICRC, "Professional Standards for Protection Work Carried Out by Humanitarian and Human Rights Actors in Armed Conflict and Other Situations of Violence," 3rd edition (2018). <https://www.icrc.org/en/publication/0999-professional-standards-protection-work-carried-out-humanitarian-and-human-rights>

²⁸ Campo et al, "The Signal Code: Ethical Obligations for Humanitarian Information Activities," Harvard Humanitarian Initiative (2018). <https://signalcodeorg.files.wordpress.com/2018/05/signal-obligations-final-05-24-2018.pdf>

²⁹ UN Human Rights Council, "The Promotion, Protection and Enjoyment of Human Rights on the Internet: Resolution / Adopted by the Human Rights Council," A/HRC/RES/32/13 § (2016), <https://www.refworld.org/docid/57e916464.html>.

communication.³⁰ Rumor becomes the primary source of information, with significant and damaging consequences to refugees' rights.³¹ Where access is maintained, it may be channeled through tools that track activity and content types, producing information that could be leveraged against a user to deny legal standing for asylum; by design, the Meraki technology supplied by Cisco offers such monitoring. Though not in any way intended or used by Mercy Corps, Cisco, or other humanitarians against beneficiaries' interests, the data gathered via this technology may lack legal protections that could prevent its use for non-humanitarian objectives. Enshrining the human right to connectivity alongside rights to clean water, food, and shelter will not only shape humanitarian obligations to provide it – it will also help protect the beneficiary at each stage of the data lifecycle running through humanitarian-designated information communications technologies.

Conclusion

The humanitarian obligation to support connectivity as a condition for access to information during crises would exist regardless of repressive conditions. The positive benefits to refugee psychosocial wellbeing generated by connectivity,³² the importance of verified, updated and refugee-specific information³³ through sites like Refugee.info, and other benefits amplified by digital connectivity³⁴ provide compelling evidence that humanitarians should provide connectivity and people on the move should benefit from it. It would also be incorrect to ignore the current socioeconomic and political environments within which aid is delivered. While negotiating access to affected populations in complex emergency environments like Yemen and Bangladesh, or industrialized border regions of the United States, humanitarian organizations increasingly navigate data-related pressures and practices that raise protection concerns.³⁵

Without a clear, consistent, and widely adopted set of minimum technical standards rooted in humanitarian obligations and internationally recognized human rights, humanitarian use of ICTs and the data they generate could create more threats than benefits to the populations they serve. Articulating those minimum standards is the next major step for the international community.

³⁰ Ananya Bhattacharya, "This is the 51st internet shutdown in Jammu and Kashmir in 2019," *Quartz India* (5 August 2019). <https://qz.com/india/1681333/jammu-and-kashmir-internet-mobile-services-have-been-shut-again/>

³¹ Melissa Carlson, Laura Jakli, and Katerina Linos, "Refugees Misdirected: How Information, Misinformation, and Rumors Shape Refugees' Access to Fundamental Rights," *Virginia Journal of International Law* 57, no. 3 (2018 2017): 539–74, <https://heinonline.org/HOL/P?h=hein.journals/vajint57&i=553>.

³² Danielle N. Poole et al., "Major Depressive Disorder Prevalence and Risk Factors among Syrian Asylum Seekers in Greece," *BMC Public Health* 18, no. 1 (July 24, 2018): 908, <https://doi.org/10.1186/s12889-018-5822-x>.

³³ Carlson, Jakli, and Linos, "Refugees Misdirected."

³⁴ Thomas M. Crea and Neil Sparnon, "Democratizing Education at the Margins: Faculty and Practitioner Perspectives on Delivering Online Tertiary Education for Refugees," *International Journal of Educational Technology in Higher Education* 14, no. 43 (2017), <https://doi.org/10.1186/s41239-017-0081-y>.

³⁵ Ben Parker and Annie Slemrod, "UN Gives Ultimatum to Yemen Rebels over Reports of Aid Theft," *The New Humanitarian*, June 17, 2019, <https://www.thenewhumanitarian.org/news/2019/06/17/un-yemen-rebels-aid-theft-biometrics>; Zara Rahman, "Irresponsible Data? The Risks of Registering the Rohingya," *The New Humanitarian*, October 23, 2017, <https://www.thenewhumanitarian.org/opinion/2017/10/23/irresponsible-data-risks-registering-rohingya>; Mark Latonero and Paula Kift, "On Digital Passages and Borders: Refugees and the New Infrastructure for Movement and Control," *Social Media + Society* 4, no. 1 (January 1, 2018): 2056305118764432, <https://doi.org/10.1177/2056305118764432>.

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About Mercy Corps

Mercy Corps is a leading global organization powered by the belief that a better world is possible. In disaster, in hardship, in more than 40 countries around the world, we partner to put bold solutions into action — helping people triumph over adversity and build stronger communities from within.

Now, and for the future.

About the Signal Program at HHI

The Signal Program on Human Security and Technology at Harvard Humanitarian Initiative (HHI) works to advance the safe, ethical, and effective use of information technologies by communities of practice during humanitarian and human rights emergencies. HHI conducts research and education to relieve human suffering in war and disaster by advancing the practice of humanitarian response worldwide.



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