BRIEF

Communication and Information Dynamics in Gaza

18 December 2023 | Gaza Strip, occupied Palestinian territory (oPt)

Key Messages

- **Urgent communication crisis:** Communication disruptions have severely limited the ability of populations in Gaza to share and receive information. Lack of connectivity to the internet is impacting the population's access to digital channels and online social platforms, which have been crucial sources of information during the ongoing hostilities.
- **Electricity blackout and fuel depletion:** The ongoing electricity blackout and depletion of fuel is impacting all aspects of communication and information sharing in Gaza. As such, provision of electricity and sufficient fuel is critical for continuing and improving existing communication infrastructure operations.
- **Limited humanitarian aid and services:** Communication disruptions are creating barriers to timely and effective delivery of humanitarian aid and services. Aid agencies are increasingly finding it difficult to locate, reach and support displaced populations. Communication breakdowns are also hampering coordination efforts among local service providers, such as healthcare staff, exacerbating the challenges faced by the affected populations.
- **Exacerbated needs and vulnerabilities:** Vulnerable populations, including people with disabilities and women, encounter increased challenges in meeting their information needs. This lack of access is particularly concerning for women and young girls, who are facing heightened risks of gender-based violence (GBV) and require information on accessing GBV support.

Overview

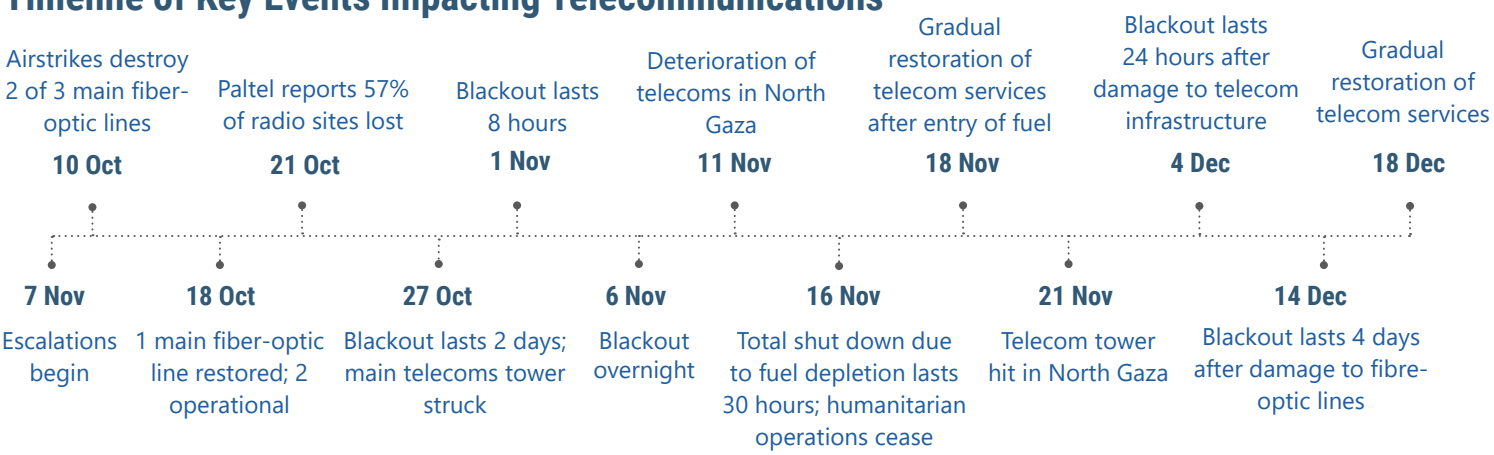
Telecommunications functionality in the Gaza Strip has been extremely limited since the escalation of hostilities on 7 October. Since then, the Strip has experienced several communication blackouts resulting from a combination of destruction of internet and telecommunications infrastructure, accompanied by the failure of phone lines, and limited access to power due to cut-off of electricity supply from Israeli authorities. The absence of electricity and limited fuel to run generators has also rendered communication devices such as mobile phones, computers, televisions (TV), and radios inoperable.

This has had severe repercussions on the ability of populations to communicate and share information with each other, as well as on the ability of local responders and aid agencies to operate in response to the deteriorating humanitarian situation. Limited or no functioning communication channels has meant that residents of Gaza are unable to contact ambulances, emergency hotlines, or family and relatives, and access critical life-saving information such as secure evacuation routes and timely security updates. This has led to increased uncertainty and a heightened sense of vulnerability, and left populations without reliable information to navigate through the complex situation.

Aid workers and essential service providers have also been encountering significant challenges. Coordination between humanitarian organizations has become difficult, hindering efficient allocation of resources and strategic planning. The lack of timely and accurate information has reportedly compromised their ability to contact most affected populations and slowed down delivery of essential aid such as food, medical supplies, and shelter.

Gaining insights into the communication and information landscape in Gaza is necessary for understanding how people's access to information can be improved. As such, this brief aims to provide information, through secondary data review (SDR), on the digital technologies and information sources most used by populations in Gaza prior to the escalation of hostilities, the challenges of access to communication channels since 7 October, the impact of communication limitations on aid and services, and expected information needs of populations, as a result of the crisis.

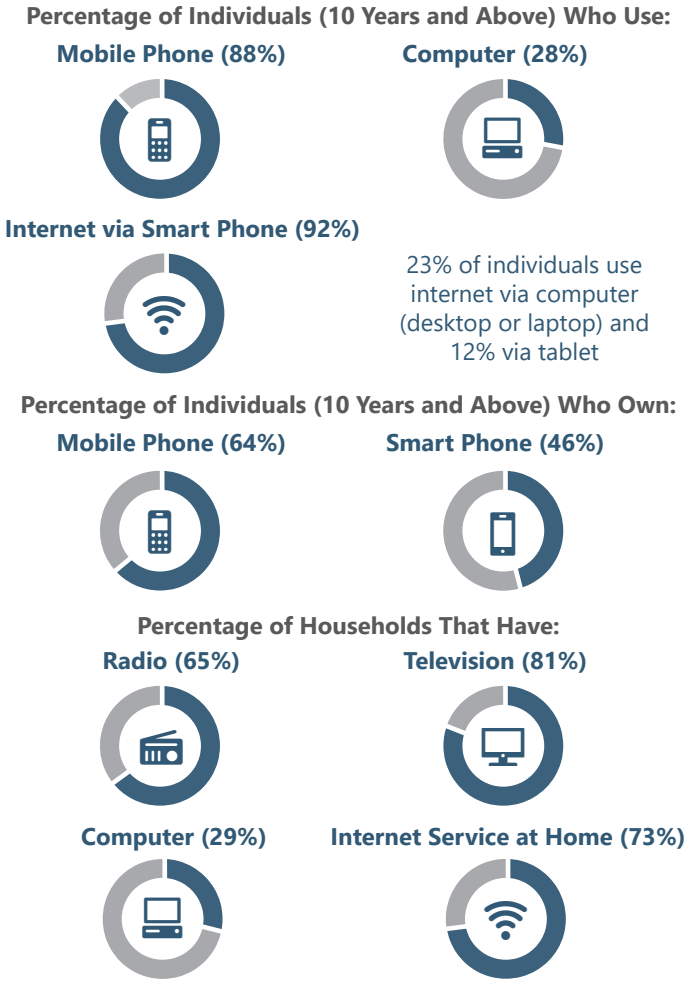
Timeline of Key Events Impacting Telecommunications[1]



[1]Sources: OCHA, ETC Cluster, Palestine Telecommunications Company

Information and Communication Technologies: Use and Ownership

While more recent information on digital literacy and access to digital technologies in Gaza is unavailable, a 2019 household-level survey, conducted by the Palestinian Central Bureau of Statistics (PCBS), gives a clear indication of the proportion of individuals and households in Gaza owning and utilizing devices and services relating to Information and Communications Technology (ICT):[2]



Paltel and Jawwal are the largest telecommunications and internet providers in Gaza, respectively. While fixed (landline) telephone services are provided by Paltel (which also owns the national internet infrastructure), Jawaal provides voice, text, and data mobile services. Only 2G services are available in Gaza, as frequencies and spectrum for 3G, 4G or 5G are not allowed in Gaza due to restrictions by the Israeli authorities.

Previously Available Information Sources and Channels

A review of the media landscape in Gaza showcases a multitude of different platforms through which individuals used to source information from prior to 7 October.

Prior to the recent escalation of hostilities, TV used to be the main source for news and information in the oPt. In Gaza, the main broadcasting outlet was Al-Aqsa Media Network, which operated both TV and radio stations. The private broadcasting channel Al-Jazeera was also popular, and is one of the few news outlets still maintaining an operational bureau in Gaza.

However, in the past few years, social media platforms, such as Facebook, Instagram and TikTok, and professional networks like LinkedIn have gained more popularity and subscribers. Facebook is reportedly the most popular among all available social media platforms. In 2019, the PCBS's household survey on ICT found that 79% of individuals (10 years and above) in Gaza were using some social media or online professional networks. Similarly, messaging apps such as WhatsApp and Telegram groups have emerged as essential platforms for facilitating communication among individuals in Gaza.

Social media platforms, including Facebook, X, Instagram, and TikTok, vastly influenced the dynamics of the Gaza War in 2021. The concept of citizen journalism gained prominence, as both media professionals and citizen journalists utilized live broadcasting to share events and engage with international audiences. This has even broadened further in the current escalation where numerous civilians and journalist accounts in Gaza have been reporting, and in many cases live telecasting, the situation on the ground. For many people in Gaza, these accounts have provided situation updates in terms of safety and security, while for others, social media platforms have remained the only source for communicating with their communities and kin.

Especially in the current circumstances, where more than 1.9 million people have been displaced from their homes, and an electricity blackout has rendered access to TV almost nonexistent for those who remain non-displaced, more populations are relying on social media platforms and messaging apps to share and receive information. Reports also indicate that all FM radio stations in Gaza are off air, as of 22 November, reducing access to another information source for populations relying on it.

Communication Infrastructure and Connectivity Disruptions

Infrastructure for both Paltel and Jawaal, including their cell towers, fiber optic cables and Internet Service Provider (ISP) offices, have been repeatedly damaged in the hostilities, disrupting communication and internet connectivity for hundreds of thousands of people in the Strip. Repairing damaged infrastructure has reportedly also been hindered due to the ongoing hostilities. Movement restrictions, unsafe security situation and the unpredictability of conflict dynamics have amplified the risks for service providers' staff, making it challenging for them to access and repair critical infrastructure.

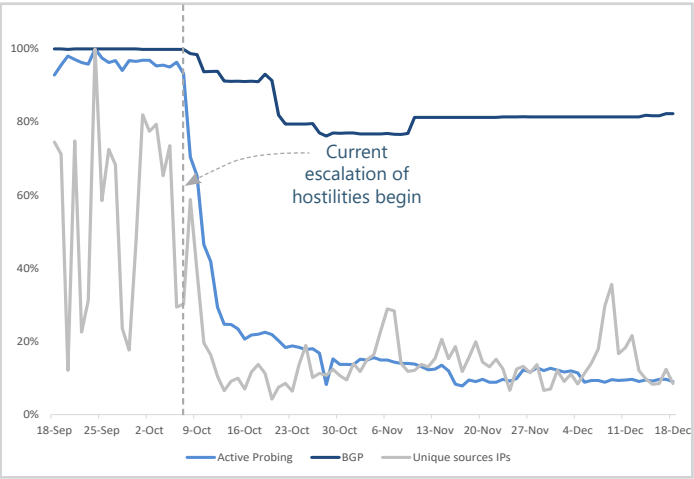
The absence of electricity has also significantly impaired telecommunications infrastructure in Gaza. The electricity supply from Israel to Gaza, constituting approximately 60% of network electricity, was halted on 9 October. Subsequently, Gaza's sole power plant shut down on 11 October due to fuel depletion, resulting in a complete electricity blackout, with constrained services now dependent on fuel-powered generators or, to a lesser extent, solar power. Without stable power sources, telecommunication facilities, including cell towers, data centers, and network equipment have been unable to operate optimally, leading to network outages and communication breakdowns. Lack of power has also disrupted the functioning of equipment such as servers and signal amplifiers, hindering the transmission and reception of signals. As of 22 November, around 14,500 liters of fuel are reportedly required each day to operate the 217 prioritized telecommunication towers across Gaza to maintain operations.

Moreover, populations in Gaza are increasingly unable to recharge their phones, tablets, and other communication/electronic devices, as the few operational generators are severely fuel-depleted. This has led to severence of connectivity among populations and

[2]The number of Palestinians living in the Gaza Strip at the end of 2019 was projected to be around 2 million. In 2023, the population is estimated to be approximately 2.3 million.

Data from the Internet Outage Detection and Analysis (IODA), an operation prototype system that monitors the internet in real-time to identify connectivity outages affecting networks, showcases a steep drop in network and internet connectivity since 7 October (see Figure 1). The peak value of Active Probing (#/24s Up), a proxy metric indicating the responsiveness of networks within a specified range of Internet Protocol (IP) addresses, showed a decrease from 96% on 6 October (i.e., a day before the escalation of hostilities), to approximately 9% as of 18 December. This can be interpreted as - at its maximum point, only 9% of networks operating in Gaza were responding to IODA's probing i.e., were connected to the global internet. Border Gateway Protocol (BGP), a system that routes data from one device to another and provides the basis for internet network, has also seen disruptions.

Figure 1: Internet Outage Detection and Analysis[3]
(between 18 September-18 December 2023)



Continued decline in the comprehensive IODA metrics for internet connectivity in Gaza suggests that segments of networks have been facing intense disruptions resulting from a combination of infrastructure damage, electricity shortages, inability to repair services, etc., leaving people with no access to call or messaging functions and internet. This has particularly affected access to online platforms which have been vital sources of information for populations in the current hostilities.

Impact of Communication Disruptions on the Provision of Aid and Services

Findings from the REACH 2022 Multi-Sector Needs Assessment (MSNA) indicate that 73% of households in Gaza reported receiving some form of humanitarian assistance or aid in the six months prior to data collection highlighting the widespread prevalence and reliance of households on aid, even prior to the current hostilities. Since the current escalation, according to the World Food Programme, approximately 2.2 million individuals, constituting almost the entire population of Gaza, are in need of food assistance. Moreover, deteriorating water, sanitation and hygiene conditions, along with collapsing healthcare, has necessitated the need for provision of urgent humanitarian aid and assistance for all. However, as communication channels and network connectivity are degraded and disrupted more frequently, humanitarian agencies are increasingly finding it difficult to respond to the basic needs of most affected populations. Even, accurately determining the total number of internally displaced persons (IDPs), their locations, and how to reach them safely has proven to be a persistent challenge for aid organisations.

Overall, communication with affected communities is essential to reach and provide timely support to them, and for understanding their priorities, concerns and preferences. However, the current situation has made it difficult, if not impossible, to directly engage with affected populations, impeding planning for dedicated support that responds to their critical needs and concerns.

Beyond humanitarian aid and information needs, SDR reveals that continued telecommunications are also essential to ensuring coordination of local services such as healthcare and functionality of markets, even if at a limited capacity, during the hostilities. As more hospitals are becoming non-functional or limiting their operations due to lack of capacity and medical supplies, networks of hospitals are also unable to efficiently coordinate and interact with each other to transfer patients based on where some capacity becomes available. Regular communication is also important to ensuring that vendors and and market actors can interact and manage the dwindling supply chains, coordinate movement of goods, and maintain operational continuity.

Expected Information Needs of Populations in Gaza

Given communication restraints and the situation on the ground, it is difficult to assess, without primary data collection, what the most urgent information needs of populations in Gaza are currently. However, SDR and analysis of the most pressing needs given the deteriorating humanitarian situation give an indication of the types of communication and information needs that could be most critical, including, but not limited to, information that ensures the population's safety, well-being, and access to essential resources. As such, it is critical that populations are able to access:

- Timely and accurate information about potential military operations, up-to-date evacuation routes, and emergency alerts to make informed decisions about their safety.
- Information regarding the location, timing, and procedures for accessing humanitarian aid, including food distribution points, medical assistance, and safe shelters.
- Information about healthcare services, including the location of operating medical facilities, availability of medical supplies, and guidance on managing non-life threatening health-issues.
- Communication channels that facilitate information about the whereabouts of family members, reunification procedures, and safety updates.

According to the 2022 MSNA, 55% households reported difficulties meeting communication needs (phone credit, internet) because they could not afford them. SDR also reveals that vulnerable populations, such as individuals with disabilities and female-headed households, are generally less likely to possess sufficient access to information. Consequently, information needs vary not only based on context but also on individual or group characteristics. For example, overcrowding in limited and over-stretched shelters, and resulting lack of privacy, has increased the risk of gender-based violence (GBV), especially for women and young girls. As such, it is important that women and girls have information on how to access and avail GBV support.

Moreover, due to limited abilities combined with increased GBV threats, women and girls with disabilities are even more prone to significant protection risks, without sufficient access and recourse for support. This seems confirmed by the 2022 Humanitarian Needs Overview which highlighted that, in Gaza, 58% of persons with disabilities lacked information about GBV prevention and response, including how and where to access relevant assistance and services during emergencies.

[3]The values for each of the IODA metrics have been computed as the weekly averages representing the percentage of the maximum/peak observed value in the considered timespan.