# 10
# NAVIGATING MOBILE PHONE INFRASTRUCTURES ON THE BORDER OF HAITI AND THE DOMINICAN REPUBLIC

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This chapter investigates how mobile phone infrastructures are made and unmade in a border region. Borders themselves are constituted in and through everyday practice. Nicholas Long (2011) has described this as a process of "bordering." [1] Rather than focusing upon borders as spaces of difference or a "third space" set apart, the notion of "bordering" enables us to understand "the affective charge and powerful symbolic weight that our informants' claims about bordering have, even when they seem to be inconsistent and contradictory." [2] Bordering acknowledges the ways in which the border may become more or less significant and, indeed, have greater or lesser material "effects" in people's everyday lives. This is especially evident on the border of Haiti and the Dominican Republic, where Haiti shares a 224-mile geographic border with the Dominican Republic and Haitians have migrated to the Dominican Republic since the early 20th century to work in Dominican sugar plantations ( *bateyes* ) and the construction industry. [3] Living on and crossing the border makes life easier for thousands of Haitians who move across the border into the Dominican Republic on a regular, if not daily, basis to work, access health care and education, and use services such as the internet, pay bills, send money, buy phone credit, and travel. Nevertheless, this dependency upon the Dominican Republic has contributed to structural inequality between the citizens of the two nations. In particular, *antihaitianismo* (anti-Haitianism) by Dominicans [4] has led to discriminations against Haitians and, at particular times in history, the deportation of Haitians living and working in the Dominican Republic. [5] In effect, the border, and the unequal power relations between Haitians and the Dominicans, can be understood as a porous space created through state formation and materialized through laws, regulations, and social relations.

Building upon the growing literature on the ethnography of infrastructure and the political economy of mobile media and communication, this chapter examines "location" as it emerges in relation to technologies such as the mobile phone. Specifically, it explores the ways in which location helps to determine how, where, and (to a lesser extent) why particular mobile technologies operate in particular locations. By demonstrating how "location" is made and unmade through state and regulatory infrastructures, it challenges the taken-for-grantedness of location. Stressing the importance of "the border" as a particular kind of location, I discuss the concepts of "bordering," "disembordering," and "infrastructuring" as forms of placemaking with and through technologies. To do so, I begin with a discussion of the history of mobile infrastructures in each country. Contextualizing telecommunications infrastructures within the broader history of material relationships between the two countries, interviews with stakeholders on the border and a deeper study of Haitian migrants' portable kits on the southernmost border of Haiti (Ansea-Pitres) and the Dominican Republic (Pedernales), the chapter then turns to the ways in which these infrastructures come alive in the everyday use of technologies by consumers living in the region. The aim is to make "ethnographically visible" the immaterial ways in which mobile phone companies and state agencies shape the everyday lives of Haitian migrants who cross the border between the two countries.

**The making of mobile infrastructures in the Dominican Republic and Haiti**

The growth of mobile phones around the world has transformed our material landscape. As Star, [6] Star and Bowker, [7] Anand, [8] Parks, [9] and a range of others [10] have noted, such changes reflect and are determined by a series of relationships – material, financial, technical, political, and social – that are bundled together through such infrastructural spaces. [11] Brian Larkin [12] addresses the challenges of studying infrastructures given their somewhat ambiguous status as "matter that enable the movement of other matter." [13] As he notes, infrastructures' "peculiar ontology lies in the facts that they are things and also the relation between things. As things, they are present to the senses, yet they are also displaced in the focus on the matter they move around." [14] Attention to the dynamism of infrastructures brings to the fore the importance of researching infrastructures in various locations and attending to how people create, navigate, or understand infrastructures in their everyday lives.

The development of mobile infrastructures in Haiti and the Dominican Republic, including differences between the size and scale of mobile networks, must be understood within a broader set of relationships between the two countries. These enduring relationships between the two countries extend to the establishment and maintenance of mobile telecommunications infrastructure. For example, the Dominican Republic has an established telecommunications infrastructure that includes mobile phone and landline services in most locations. [15] By 2014, there were nearly 10 times more mobile phones (9,367,544 subscriptions) than landlines, with mobile penetration rates estimated at 97 percent. [16] Claro, formerly Codetel, was the largest telecommunications company and provided local, long-distance, and wireless voice services. Codetel, a subsidiary of the US company General Telephone and Electronics, had commenced operation in the Dominican Republic in 1932 and was effectively a monopoly until the liberalization of telecommunications in 1992 and the introduction of new market competitors. However, the regulatory framework was not updated until 1998. [17] INDOTEL, the country's telecommunications regulator, reported that in June 2009 there were approximately eight million phone line subscribers, both land and cell users, that represented 81 percent of the country's population, and, by 2012, market penetration had increased to 86.5 percent. It further jumped to 96.78 percent in 2013. [18] Orange Dominicana, a subsidiary of France Télécom, was the second most important provider with 3.4 million customers in 2013 when the company was sold to the Luxembourg cable and broadband provider Altice for US$1.4 billion. It was the first operator with GSM technology. In an effort to increase access to rural and underserved areas, INDOTEL implemented a number of projects and formed a partnership with Codetel to extend broadband coverage, allocating more of the digital spectrum to mobile services in an effort to encourage greater coverage in underserved areas, particularly rural regions. Furthermore, the regulator solicited funds from the World Bank to develop a national fiber-optic network to increase voice and broadband services in those areas. [19]

Whereas the Dominican Republic had a relatively robust mobile and internet infrastructure in urban areas, Haiti's telecommunications sector was less developed and unevenly distributed. The growth of telecommunications began with Teleco, a privately owned, state-sanctioned telecommunications company formed in 1968 with the intention of providing landline services for both urban and rural areas. [20] In 1977, the Haitian state was granted, by decree, a monopoly on telecommunication services, including the right to grant and limit licenses or

operating permits. Teleco failed to expand landline services and was severely limited beyond Port-au-Prince. Poor landline infrastructure remained pervasive with only 50,000 landlines estimated in 2012 out of a population of 9,996,731; 21 rural areas geographically isolated from Port-au-Prince and other large towns in Haiti suffered from lack of access most acutely.

By 2014, two major mobile phone providers dominated the mobile market: Digicel [22] and NATCOM. [23] NATCOM was formed in 2010 when the government-owned Teleco was partially privatized. It reflected the Haiti government's goal to modernize public organizations in a bid to increase efficiency, stimulate economic growth, and free up capital. The government retained a 40 percent holding, and 60 percent of the company was owned by Viettel, a Vietnamese military-owned company. Viettel was enlisted to implement the construction of 3,100 kilometers of fiber-optic lines that could link Haiti's major cities and a new submarine cable linking Florida and Haiti. [24] However, there remain questions as to whether Viettel fulfilled these obligations. [25] Digicel entered the market in Haiti in 2006. By 2007, Digicel accounted for 60 percent of the market and increased to 85 percent in 2013. It services both urban and rural areas. With the introduction of NATCOM in 2011, the company invested in an extensive marketing campaign that promoted a flexible and lower pricing structure. Digicel responded by endeavoring to increase mobile penetration and extending coverage to regional areas, which has resulted in diversified products and services and led to competitor-based pricing policies. In 2011, the company began to roll out a GSM/3G mobile network that meant international calls could be placed over its mobile network.

Alongside mobile phones, there have also been efforts to build fiber-optic lines and undersea cables to supplement the mobile telecommunications landscape, as Haiti remains one of the least connected countries in the region. Geographically, Haiti has numerous mountains and steep hills, and undersea cables provide a cost-efficient method of linking coastal cities. Moreover, cables can be built incrementally. In 2004, a fiber-optic cable was gifted to Haiti by BaTelCo, a Bahamian phone company, but it was damaged in the earthquake in 2010 and was not completely reactivated. Most international communications companies access the Dominican Republic's undersea fiber-optic cable, as it is less expensive. However, Digicel commenced a project to run a 200-kilometer undersea fiber-optic cable in 2012, with the aim of linking Haiti via internet connectivity. NATCOM also established a submarine cable network that led to the company building its own sales outlets and distribution channels, and satellite remains an important option for mobile and internet access throughout Hispaniola.

**Making mobile infrastructures on the border**

While the establishment of mobile phone masts in neglected rural areas and the growth in mobile phone adoption in Haiti has significantly impacted the ways in which Haitians communicate, few residents of the Haitian border town of Anse-a-Pitres have had access to reliable mobile phone coverage. As in previous eras, where access to electricity, landlines, and other infrastructure required services to cross the border between Haiti and the Dominican Republic, Haitians in Anse-a-Pitres relied upon the services of Orange and Codetel/Claro in the Dominican Republic. Before Digicel arrived in Haiti, residents of Haiti depended upon Dominican-based services (Claro and Orange). In addition, with their Claro or Orange phones, Haitians who wanted to call their relatives in Haiti with a mobile had to pay international call rates. With two different sets of carriers, however, residents purchased multiple phones and/or SIM cards with the different mobile phone companies, one with Digicel or Voila in Haiti, and a

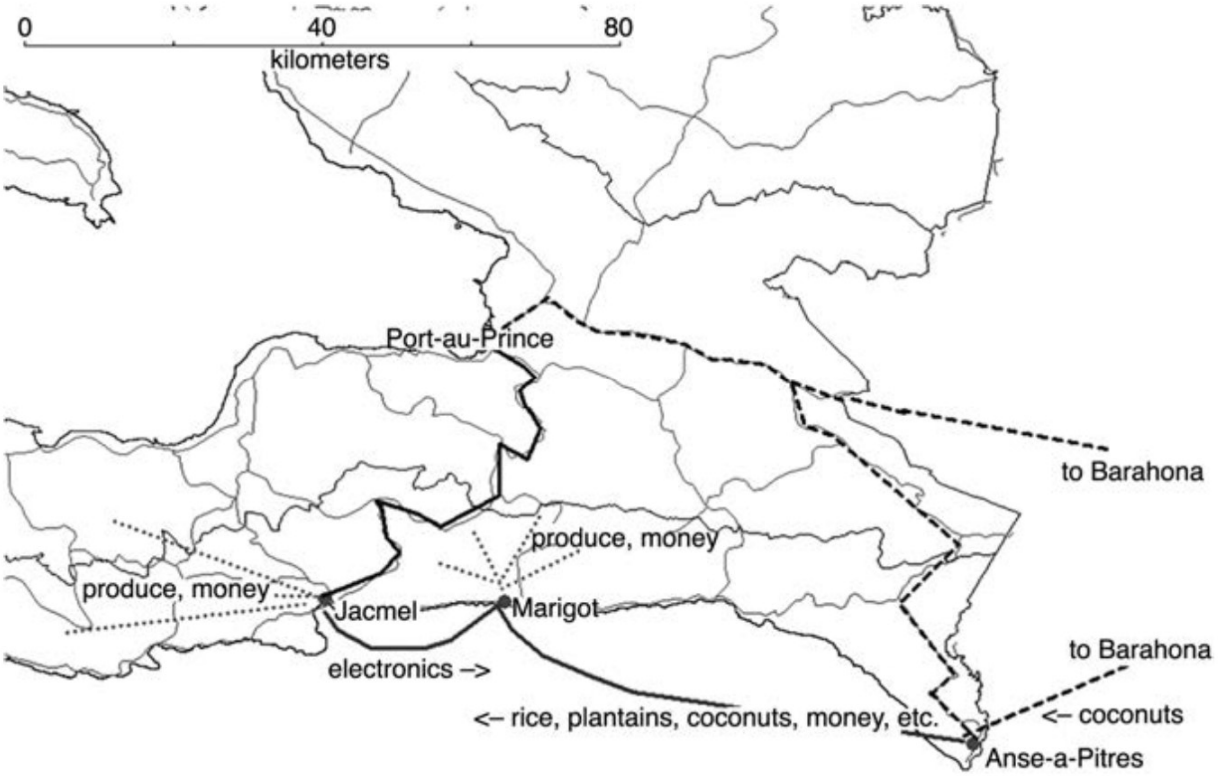


**FIGURE 10.1** The border of Haiti and the Dominican Republic mobility map
*Source*: Heather A. Horst and Erin B. Taylor, 2012

second with Claro in the Dominican Republic. These did not always work seamlessly for Haitian migrants who moved between the countries, but the experience of infrastructures was not necessarily an encounter of broken or failed infrastructures, in the words of Star, [26] but rather a dual system marked by issues of power and inequality.

It is also clear that different actors make different infrastructures. This is especially apparent in the case of Haitians who navigated two nationally based telecommunications networks, two national currencies, two distinct languages, two distinct legal codes, and a policy that requires individuals to carry a form of nationally issue identification. The movement in, through, around, and between different systems meant that ordinary people routinely considered the possibilities and constraints of mobile communication networks by hacking, remixing, and challenging the wider system. [27] For example, on the Dominican side of the border, both Claro and Orange provided service to Pedernales. While most people living in Pedernales owned a Claro or Orange phone to coordinate their lives and stay in touch with work, friends, and relatives living in the Dominican Republic, it was not uncommon for Haitians to own two mobiles in order to communicate with relatives, trading partners, and services in both countries. Rosaire, a man in his thirties who lived on the Pedernales side of the border, described this change,

> Because before there wasn't recharge [top up], it was very terrible. A poor person couldn't have a phone because things were so expensive. A phone was worth a lot of money before, when there was only the one company, Comtel. There was Haitel, too, but Haitel and Comtel were very expensive. But, when Digicel arrived, Comtel changed to Voila. They put cheap prices, and they brought a recharge called "Direk Direk," [a pre-paid top up service]. After Digicel put PapPadap, Voila came with a similar recharge. So things became cheap from Digicel and Voila, too.

In addition to the mere availability of mobile services in the region, the maintenance of the phones themselves shaped the process of infrastructuring. Most residents of Anse-a-Pitres did not have electricity at home in Haiti and, therefore, had to cross the border to use Dominican electricity infrastructures, such as power points, to charge their phone, regardless of where their telecommunications service provider was located. For individuals with stable employment, the most common practice was to carry their phone and chargers and ask their employers for permission to use the electricity at work. For example, Variola took her phone to work with a family where she was a domestic worker. Evens, a 24-year-old Haitian who lived in Thiotte (located farther from the border) but worked in Pedernales, was reliant on his Dominican boss who owned the phone, the charger, and the SIM card. In fact, Evens's boss kept the charger at his workplace so that Evens remained reliant upon him for the use of the phone, which meant his usage, and even his calls, could be monitored. Other individuals stopped at their friends' houses in Pedernales to ask to use their power point. Monica, a Haitian who lives in Anse-a-Pitres, charged her phone at work for free and noted that she had a friend living on a main street in the only part of town that has electricity who charged other people to recharge their phones. It was also possible to pay a fee to charge a phone in a shop in Pedernales or in one of the few locations in Anse-a-Pitres where electricity was available. Indeed, some of the NGOs and microcredit institutions situated in the region provided this service to residents. Yet, even access to electricity was constrained. Because the border between Haiti and the Dominican Republic closed at night (after 5 or 6 p.m., depending on the season), residents had to make sure that they returned home with their phone charged prior to the closure of the border or that they left their phone with a friend or other trustworthy person. While somewhat porous during the day (Horst and Taylor 2014), the border was guarded by Dominican and UN soldiers at night.

Finally, the process of infrastructuring for Haitian migrants living in the border region involved navigating various signals and coverage strengths. Many Haitians with phones from the Dominican Republic (e.g., Orange and Claro) used Dominican network phones for a number of years while working in and accessing resources in the Dominican Republic. In some cases, they were also able to use the phones on the Haitian side of the border. Indeed, research participants suggested that signals could be picked up 40 kilometers from the border. However, our own experience was that the mobile signal truncated somewhere around one kilometer from either side of the border. NATCOM also serviced Anse-a-Pitres; however, the closest transmission tower was 35 kilometers away, so the reception was not ideal. Due to poor network reliability, a number of places had either limited or no reception, particularly in mountain areas. For example, Frederline, a woman in her forties who spent her time between her home in the mountains outside Anse-a-Pitres and her family in Thiotte, experienced no problems with a signal when visiting family in Thiotte. However, her signal at home was unreliable and she sometimes lost her SIM number because she did not add credit to her phone when she did not have money.

In addition to leveraging signals, many individuals on the border used multiple networks and switched between operators. These different systems effectively provided greater bandwidth for mobile phone use; the bandwidth enabled cell phone activation if people could locate a reception point. For example, Alain was a Haitian living in Pedernales who bought a phone with two SIM cards. In discussing his phone, he explained, "I take the SIM from Digicel and put it in Claro when I recharge it." Alain considered this an inexpensive option at around 1200–1500 gourdes (around US$25). Carlo, who worked in the Claro store in Pedernales, further detailed how "the cell phones come free. Since they come free, the foreigners, our neighbors, buy them because of the ease with which they can put a chip [i.e., insert a SIM card]: Orange, Claro, Digicel, Voila."

But, workarounds and other forms of infrastructuring were not always effective. Sergio, a single man who worked in a welding shop in Pedernales, had problems with reception and, when in Haiti, was unable to call anyone unless he traveled a substantial distance from Orange, his service provider, for reception. He was also confused about which company was providing network coverage and stated that, "when I'm in Haiti with this cell phone, I use the antenna of Digicel and the icon of Digicel stays, Orange, Digicel, Orange, I don't know . . ." The icon that Sergio spoke about is the signal strength band (usually 3–4 bands) that appeared on the upper left hand of his phone screen. While individuals attempted to use the right SIM card for the right network, there was a significant issue as to whether the icon displayed was the closest service and, by extension, the strongest signal, despite evidence that representations of signal strength are inaccurate. Some residents reported that their signals switched back and forth between multiple signals, especially now that the signals are on some of the same channels (in the past one was CDMA and one was GSM). In effect, this switching often meant that people lost their signal and had to initiate calls again (incurring higher charges) or they did not know which network their phone was using and thus what rate their airtime was being charged at, since cross-network calls were more expensive.

The issue of signals also corresponded to debates about cost and taking advantage of company plans. Alain explained that, although a cell phone plan could be convenient, "they scare you with a plan, they know the company will charge a lot, you speak less." For this reason, pre-paid plans were the most common form of paying for calls. However, one alternative to calls was text messaging. Evens, for example, noted that he "messages, because calls cost more money. At times you could be talking for ten minutes, and messages only cost one peso, five pesos." There was little recourse to correct billing errors; it was virtually impossible to prove to the companies where you were at the time of the call or to receive a list of calls and charges, especially with pre-paid services. Therefore, it was routine for calls to end before it seems like they should or for conversations to remain half finished. For most people, when the credit on their phone was gone, so was the conversation.

As these examples of the building of mobile networks and different actors living and working on the border demonstrate, infrastructures are not "given" or "stable," nor are they the domain of companies, states, or other agents intent on obfuscating their creation or failure. [28] As STS scholar Janet Vertesi observes, infrastructures are best understood through multiple perspectives and require attention to

> the constraining nature of infrastructures at the same time as [. . .] how actors skillfully produce moments of alignment between and across systems: not fitting distinct pieces together into a stable whole but producing fleeting moments of alignment suited to particular tasks with materials ready-to-hand. [29]

The making of mobile infrastructures across the two countries provides an important context for understanding the changes made and unmade by Haitians and Dominicans as they shape their changing telecommunications landscape for their own ends.

**Conclusion**

People living in the border region in Haiti and the Dominican Republic engage in the process of bordering. 30 Border crossings, and the border itself, were constituted by the ability of both Dominicans and Haitians to engage in a kind of cross-border arbitrage that takes advantage of differential prices of labor and goods, but also of social and cultural relationships through the processes of infrastructuring. Hence, while material objects facilitated relationships, just as they would anywhere else, they took on particular properties and capabilities in the border zone. For decades, the border has been a place constituted by relationships and activities that involve cooperation and creativity as much as subordination and restriction. In terms of power and privilege in the border region, access to the means of mobility is clearly available to some people more than to others. Military officers, people who own private cars, or people who can afford to buy visas and dress "respectably" have far greater leeway to move than those who don't. However, the borders never seem to close down absolutely. Even in a worst-case scenario, such as during the cholera scare of 2010 when the border "shut down" for a few weeks, Haitians found ways to conduct business and travel across the border.

In such situations, the border itself becomes a seminal part of the interwoven process of making infrastructures and engaging in processes of bordering. Infrastructures are the invisible frameworks that are often, according to Star, more likely to be understood when they "break down." Through the process of engaging with various infrastructures, people become aware of the tangible attributes of infrastructures, such as hardware like plugs and platforms, as well as of economic aspects, via pricing policies. Yet, infrastructures also change, building on existing systems incrementally, and are not controlled by a central entity or person. The practice of moving between different infrastructures on the border reflects the infrastructural heterogeneity that is present in most people's lives. Vertesi describes this process through the metaphor of "seams" and maintaining "seamfulness" to highlight how people navigate different infrastructures, negotiating the politics of each moment and location. [31] Keeping the focus upon the practices and meaning-making of the actors moving across, in, between, and around given infrastructures, she further argues that seams suggest many possible ways to patch multiple systems together into local alignment. Haitian migrants living in this border region revealed how their work and home lives were resourcefully stitched together through different infrastructures and, further, elaborated a sense of community experienced through a practice of using and sharing resources that was only loosely bound by the state and telecommunication companies.

At the same time, the making of infrastructures – be they social or material – clearly involves a dynamic tension around the experience and meaning of the border. As Long observes, the experience of "borders" is differentially experienced at different points in time and this shapes the ways in which people experience the notion of location. [32] Improved mobile infrastructures have enabled a process of breaking down the barriers between two national contexts – what we might think of as disembordering – by connecting friends and families through the use of mobile phones. In many cases, the mobile phone has become a proxy for mobility across the border. [33] But, there always remains a dynamic tension between the ability

to transgress borders and the continued maintenance of borders. Companies engage in bordering by maintaining international call tariffs, developing mobile networks that follow national boundary lines that limit the "leaky" signals that might enable border residents to use other networks and, through regulatory frameworks, are restricted to particular bands and standards all aimed at maintaining the boundaries of the nation. And, while many mobile phone users living on borders would like to create seamful mobile experiences (disembordering) that enable them to transgress the border and their locatedness on one side or the other, others engage in practices of bordering by limiting their calls and mobility in an effort to save money and for other reasons. This chapter's attention to the tension between embordering and disembordering – and the way it becomes visible through the making of infrastructures in this region – seeks to highlight the importance of appreciating the multiple meanings of location in studies of location technologies.

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