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# The Human Infrastructure of El Paquete, Cuba's Offline Internet

## Insights

- ➔ In Cuba, instead of relying on technical equipment and algorithms, the “Internet” is populated and sustained by a human infrastructure.
- ➔ People have access to up-to-date international entertainment content, software, and social media posts through an offline, community-run information system.

In a small, bottom-floor apartment in the center of Havana, Cuba, a grandmother browses through rows of DVDs looking for educational content for her young granddaughter. At the restaurant next door, a flat-screen TV plays Cuban reggaeton videos as patrons sway their hips and tap their feet to the music. Two friends walk by, loudly discussing the latest *Game of Thrones* episode, trying to hear each other over the beat from the music videos. They are headed to a home nearby to purchase a smartphone that was advertised in an online classified ad. “I hope the phone is still available,” says one to the other. “We should be fine,” says her friend. “El Paquete came

out yesterday, so this is from the newest version of these Web pages.”

Although Cuba has been known for one of the lowest Internet penetration rates in the world, millions of Cubans engage with digital content on a regular basis through an informal, pervasive, offline Internet called El Paquete Semanal (EP), or the Weekly Package. Up until recently, only 5 percent of Cuba’s population had access to the World Wide Web (WWW). Although access is increasing, slow speeds and high costs persist. Despite such barriers, there is a proliferation of multimedia content across the country. EP is a one-terabyte (TB) collection of digital content compiled



A sign advertises an EP store inside an apartment building.

by individuals, distributed by hand across Cuba via external hard drives, USBs, and CDs. EP includes local and international TV shows, music, movies, apps, educational programs, YouTube videos, magazines, and news. It costs between \$2 and \$5 for the entire TB of material. This community-led information network is the primary medium by which Cubans receive and engage with local and international media, news, and entertainment.

## THE HUMAN INFRASTRUCTURE OF EL PAQUETE

We set out to explore how EP facilitates offline access to local and international content regularly and affordably through fieldwork in the city of Havana between 2015 and 2017 [1]. We found that instead of relying on technical equipment and algorithms, EP is heavily dependent on a *human infrastructure* to support this offline Internet in a technologically constrained environment. Human infrastructure consists of the people, relationships, and organizations that underlie the foundations of a system or network [2,3]. In other words, it goes beyond tangible artifacts to include the *people* involved in creative practices, social processes, and flows of information and materials. In Cuba, EP is sustained by three groups of people: *los maestros* (the masters), who compile the original TB of content each week; *los paqueteros* (the packagers), who deliver, edit, and produce additional content; and *la gente* (the people), who consume, share, and create their own content as well.

**Los Maestros (The Masters).** On an evening in December 2015, Juanito [4], a 27-year-old casually dressed in board shorts only, invited us to his place in Centro Havana. At first glance, his home appeared to be a typical Havana apartment, but a quick tour revealed a small central room equipped with three AMD A4-series desktops with 21-inch Toshiba screens, one 24-inch Zenith TV, and numerous hard drives and flash drives. We were standing in the studio of one of the maestros who compile

the original editions of EP. Juanito manages his studio along with Marcos, his 24-year-old business partner, and Paola, his 22-year-old girlfriend. The team combines a variety of tasks and resources to compile the one TB of digital data required to release EP to the Cuban public each week.

To acquire this content, Juanito draws from a limited pool of people who have varying degrees of Internet access, such as dial-up connections at home, WiFi hotspots, and/or faster connections at universities or government agencies. Although access to this type of information has been limited in the past, los maestros undertake small and large tasks to navigate constraints so that millions of people are able to take advantage of the access others have. In Juanito's studio, each member moves across various spaces that they have access to and knowledge of in order to acquire content. For example, Paola's job is to study the TV schedule and tell Juanito when a specific show is on so that he can digitize it. Juanito has a satellite dish installed in a fake water tower on his roof, which allows him to access this content at home and thereby stay ahead of the competition (the other maestros).

Each week Juanito, Paola, and Marcos (as well as other individuals who help them acquire content) deliver the digital parts of EP to Juanito's studio by hand via USB drives, CDs, DVDs, and hard drives. Maestros "clean" the content they acquire by digitally editing it to remove illegal or controversial content, including pornography and anything that may be deemed anti-government, all of which may put their operation at risk. Moreover, they remove commercials and at times add subtitles. The maestros then label the digital files and organize them in categories according to the media. Once the weekly EP is ready for distribution, individuals from the various studios physically deliver external hard drives to the next group of people in this system: los paqueteros.

**Los Paqueteros (The Packagers).** On a narrow street in Havana Vieja, we visited a bottom-floor apartment with a blinking, rainbow-colored sign that read OPEN. The front room of this house had been converted into a shop with a desk, couch, and a wall full of DVDs packaged in colorful paper envelopes. Ricardo, one of the shop owners, sat behind the desk scrolling through digital files on his Dell desktop computer as his colleague, Aileen, looked on. "Copy me something good," she told him. "Whatever you recommend." Ricardo quickly navigated several folders on his screen until he got to the soap opera section. "I'm going to put a soap opera on here for you that you're going to like, just the first season," he told her. "If you don't, just bring it back and we'll find you something else." Aileen pulled out a USB stick from her purse and handed it to Ricardo, who got up from his chair to plug the USB into the computer tower on the floor behind his PC. As he began to copy the files onto the USB, Aileen told him she had been having trouble with her phone. Come back later in the day, said Ricardo—he would help her install the latest software update that just came out in the week's EP. "See," he said, "I not only sell them content. I help people in my community with everything."

Ricardo is a paquetero, an individual who distributes EP content across the country, either by delivering it to clients' homes and businesses or by selling it in physical stores, now found on almost every block in Havana. Moving across a large web of individuals, paqueteros piece together various connections between los maestros, other paqueteros, and la gente, facilitating the flow of digital information, often in ways that are personalized for their clientele. Paqueteros also clean or censor EP, most often to ensure that their content is high quality or that it does not contain overtly anti-government messages. Paqueteros customize the methods of delivery based on clients' preferences and constraints. Many people don't have access to a computer to be able to scroll through the entire EP, and so Paqueteros put together customized DVDs for customers to watch on portable DVD players. They also customize prices. For example, Ricardo charges less for his content because he says that his clients do not earn as much and cannot afford the prices that other paqueteros charge. Ricardo makes sure his less technologically savvy customers know how to download and

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update their phone software (and often does this for them free of charge).

**La Gente** (*The People*). La gente are the people who engage with this network on a massive scale and across all socioeconomic strata. When individuals wish to acquire content from EP, they purchase it from a paquetero at a store, get it delivered to their home, or get it from a friend. While there is a desire for entertainment, there are many other needs and motivations that drive engagement with this network. EP acts as more of an information medium than purely an entertainment service.

Much of the motivation to engage with EP comes from the fact that it is the main and often only source of information that comes from the WWW. EP contains downloaded Web pages from sites like Wikipedia, YouTube videos, Facebook posts from celebrities, and screenshots of Twitter feeds, to name a few. People also use EP to engage with Revolico, which is like a Cuban Craigslist. Each week, the most recent version of the entire Revolico website is included in EP; people rely on this information to buy and sell items, find jobs, and advertise businesses.

La gente not only consume content; they also create it. EP is viewed as an alternative to the state-owned press, allowing local journalists to turn to EP for publishing their content within Cuba, something that was previously not possible. We met with Maria Joaquina, a journalist and column writer for Vistar Magazine. This online magazine was designed for Cubans living outside of Cuba, since the majority of people inside the country do not have a way to access this content online. Thanks to EP, those in Cuba can now read the magazine, since the network has provided a new venue to distribute alternative journalism.

Because it contains one TB of content, people said that going through all the content each week could be overwhelming (even though many did not purchase the entire EP each week). For example, Javier occasionally purchases parts of EP himself, but he prefers to get curated sections from his friend, who sets aside content that she thinks Javier will like before dropping off her external hard drive at his apartment. While relying on someone to choose your content may appear limiting, people often spoke positively regarding that moderated aspect of EP, drawing



The outside of an EP store in Havana.

parallels to the WWW, like Alexis, who told us: “EP is like the Internet. The Internet is not a bad thing.... There are people who misuse it, but it’s not a bad thing ... One good thing is that our Internet [EP] is filtered; you will not find negative content. Like pornography. Bad things. Because the people in charge of distributing EP, they select what to put.”

### A CUBAN INTERNET

The examples are illustrative of our larger set of findings, demonstrating how the work of human actors plays a central role in sustaining and growing EP, offering a unique version of the Internet where it would otherwise not exist.

Specifically, the human infrastructure of this network mobilizes a personalized and negotiated kind of Internet for its consumers. Our participants described how they

customized EP for others (like Ricardo, who charges his customers differently) and how they preferred to engage with EP so it was customized for them (like Javier, whose friend puts together a version of EP that will suit his tastes). As systems increasingly move toward automation, this study illuminates aspects (such as personalization) that are not always replaceable by technology. This visibility is just as important in places where Internet access is unconstrained, such as in the case of Amazon Mechanical Turkers and Gig Workers, whose contributions are frequently rendered invisible. Through this enhanced visibility, we see that actors of EP not only engage with the material, tangible elements of the network, but are also in constant negotiations with personal preferences and legal boundaries. These negotiations



A wall of themed DVDs in an EP store. These are compiled by los paqueteros for customers that do not want to purchase the entire EP.

are continually feeding into a system that remains responsive and adaptive to a variety of use cases.

EP provides an Internet that is both *entertaining* and *informative*. Similar to other informal media-sharing networks, like those previously studied in India (among other locations), entertainment is a major driving factor of EP. However, EP also provides users with a variety of additional information needs, such as educational content, and connects individuals with critical resources by facilitating a means to buy, sell, and trade with other people around the city.

We find that EP serves as a *relevant*, *participatory* Internet. We see a thriving example of an established, pervasive information network that is locally relevant in terms of content and delivery. For example, access to the WWW in Cuba is prohibitively expensive, whereas EP is affordable for many, especially with price adjustments for certain individuals. This network contains locally sourced content, and consumers of EP do not engage with content passively—they also produce content that finds its way back into the network,

as in the case of Maria, who publishes her magazine through EP.

Although there are many perceived assets to this system, it is not without its limitations. For example, the lack of automation may facilitate personalization, but individuals have to undertake significant labor to support the network. Additionally, as with most sociotechnical systems, there are power structures at play within EP, as well as the power structures acting upon it. A human process of selecting content means that certain individuals decide what others see. The content in EP is also shaped by government regulations (such as no pornography or anti-government commentary). Thus, while EP is relevant and participatory in ways that benefit many Cuban people, it remains subject to the politics of information. It also does not provide people with everything they want from the Internet, like the ability to communicate in real time with individuals outside of Cuba.

Although the Internet in Cuba may appear different from the one we engage with on a regular basis, it's important to note that the WWW also relies on a human infrastructure. EP provides

a critical opportunity to understand the human effort that constitutes this sociotechnical system, and emerges as a provocative example of an information network that challenges our notions of what the Internet should look like across disparate geographies and sociopolitical terrains.

## ENDNOTES

1. Dye, M., Nemer, D., Mangiameli, J., Bruckman, A.S., and Kumar, N. El Paquete Semanal: The Week's Internet in Havana. *Proc. of CHI '18*.
2. Lee, C.P., Dourish, P., and Mark, G. The human infrastructure of cyberinfrastructure. *Proc. of CSCW '06*.
3. Sambasivan, N. and Smyth, T. The human infrastructure of ICTD. *Proc. of ICTD '10*.
4. All names have been changed for anonymity.

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