

# GLOBAL INFORMATION SOCIETY WATCH 2018

## *Community Networks*



ASSOCIATION FOR PROGRESSIVE COMMUNICATIONS (APC)  
AND INTERNATIONAL DEVELOPMENT RESEARCH CENTRE (IDRC)

# Global Information Society Watch

## 2018



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*This edition of GISWatch came into being alongside a brand new baby boy. Welcome to the world, Ronan Diga!*

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Maureen Hernández

### Introduction

The digital gap undermines the development opportunities of communities profoundly. The asymmetric distribution and use of communication resources negatively affects a developing community, increases its vulnerability, and deepens the vicious cycle in which not having access to information inhibits the awareness of this information, and, therefore, the ability to claim it as a right.

While, as Ritu Srivastava says,<sup>1</sup> the internet has a democratising effect on society, this is not always the case in countries that are authoritarian states, or, such as Venezuela, have features in common with these states.<sup>2</sup>

Community networks, defined along clear principles such as non-discriminatory and open access, open participation and community ownership of infrastructure, do not exist in Venezuela – or, if they do, are not widely known to the internet community in the country.

The reason for this, as I argue in this report, is that community networks conceptualised in this way require certain structural conditions to be in place so that they can flourish. As I point out, at least three areas in Venezuela – the economy, policies on access, and laws impacting on freedom of expression – are particularly unsupportive of the open community network model found in many other parts of the world.

### Economic factors

#### *Hyperinflation and purchasing power*

Venezuela has a rigid currency exchange control system, and to understand the economic problem and how to acquire any equipment not produced in the country, this problem must be understood first.

While acquiring foreign currency is an extremely cumbersome process, the system has also changed a lot over the years, which makes it difficult to understand properly. However, what is not difficult to see is that due to the exchange control system, the import of any hardware that could be used in a community network is cost prohibitive.

According to calculations by Reuters, the last update of the currency auction system led to a devaluation of the Venezuelan bolívar fuerte (VEF) of more than 100% compared to last year. At the time of writing, the official exchange rate – known as the DICOM rate<sup>3</sup> – was fixed at 201,363.84 VEF per euro (EUR).

There is no official United States dollar (USD) rate, so for this we will apply a simple rule of three. At the time of writing, the exchange rate was at EUR 0.86 per USD 1:

- USD calculated rate = EUR rate in VEF x EUR per USD rate
- USD calculated rate = 201,363.84 x 0.86 = 173,172.90 VEF

The equivalent DICOM rate in USD contrasts with the more than VEF 3,524,330.15 that 1 USD was worth on the black market at the time of writing,<sup>4</sup> the latter which is the *de facto* exchange rate for a large part of the economy of the country that does not have access to the auction offered by the government.

This hyperinflation translates into a simple consequence: the purchasing power of the average Venezuelan is almost nil.<sup>5</sup>

The new minimum monthly salary<sup>6</sup> in the country is VEF 4,196,000, calculated based on 30 working days for social benefits with five days a week as workdays. According to the calculated DICOM rate (VEF 173,172.90/1 USD), the minimum

1 Srivastava, R. (2016). A Network by the Community and for the Community. In L. Belli, *Community Connectivity: Building the Internet from Scratch. Annual Report of the UN IGF Dynamic Coalition on Community Connectivity*. <https://bibliotecadigital.fgv.br/dspace/handle/10438/17528>

2 Urribarrí, R. (2013). Venezuela: De la Sociedad del Conocimiento al Socialismo del Siglo XXI. Paper presented at IV Congreso Venezolano de Investigadores de la Comunicación, Barquisimeto, Venezuela, 29-30 November. [www.congresoinvecom.org/index.php/invecom2013/INVECOM2013/paper/viewFile/338/353](http://invecom2013/INVECOM2013/paper/viewFile/338/353)

3 DICOM is now the country's only official exchange rate, although US dollars trade on the black market. [www.dicom.gov.ve](http://www.dicom.gov.ve)

4 On 29 July 2018 at <https://dolartoday.com>

5 China, E., & Ramirez, M. (2017, 26 December). Venezuelans scramble to survive as merchants demand dollars. *Reuters*. <https://www.reuters.com/article/us-venezuela-economy/venezuelans-scramble-to-survive-as-merchants-demand-dollars-idUSKBN1EKoXK>

6 [dctos.finanzasdigital.com/Gaceta-Oficial-6383-Ajuste-Sueldo-Minimo.pdf](https://dctos.finanzasdigital.com/Gaceta-Oficial-6383-Ajuste-Sueldo-Minimo.pdf)

Device	Mercado Libre Venezuela (VEF)	Amazon.com (USD)	Work time (days)*
Xiaomi MiWiFi R3	187,880,513 <sup>7</sup>	39.99	1084.76
TP-Link WDR3600	200,000,000 <sup>8</sup>	49.99	1154.73
Ubiquiti PicoStation M2	368,000,000 <sup>9</sup>	81.49	2124.71

Cost of items on 28 July 2018.

wage represents only USD 30, and only USD 1.47 on the black market.

Now let us see how “low-cost” the acquisition of equipment for a wireless network can be in Venezuela. We will compare the prices found on local and international markets for some equipment needed for the installation of a LibreMesh<sup>10</sup> network (see Table 1).

For local reference we are using MercadoLibre, the Argentine e-commerce platform which is dominant in the region and by far the most popular portal in Venezuela. This platform is very often the only way to buy computer hardware locally, due to the fact that formal merchants are subject to economic regulations and often price-imposing policies by the government, frequently leading to their closure. As a reference for global markets, prices on Amazon.com are included. The work time is calculated dividing the monthly wage by 30 days.

Based on the figures in Table 1, for a community of 10 families with two economic providers per family, for a total of 20 monthly minimum wages, it would take them almost two whole months of salaries to acquire a Xiaomi MiWiFi R3.

Conclusion: Obviously, what is considered low-cost for many scenarios is difficult (or impossible) for a working-class community in Venezuela, in the same way the fees to cover costs associated with the maintenance of the network or to replace equipment would be too high for the community.

### *If this is the situation, why not resort to funding?*

It is clear that the inability to pay for hardware is not a problem that we Venezuelans face alone, and there are several ways to secure financial support from various organisations. However, these too come with challenges.

When we talk about grants or subsidies that we can apply for in Venezuela, it is important to understand that the currency received by the organisation must be entered into the country legally, that is, at the DICOM rate. This results in a significant weakening of the purchasing power of the funding received.

To clarify this relationship let’s look at an example. A grant of USD 20,000 at the DICOM rate (VEF 173,172.90) would end up having a net value in bolívars of 3,463,458,040 Bs.

- Funding in bolívars = Amount (USD) x DICOM rate (VEF/USD)
- Funding in bolívars = USD 20,000 x 173,172.90 = VEF 3,463,458,040

We can, further, use this equation:

- Funding in bolívars/Local cost of the item = Number of units.

In the case of a Ubiquiti PicoStation M2, using the prices in Table 1, VEF 3,463,458,040/368,000,000 = 9.41 units

This means that the entire amount of our initial subsidy would end up transforming into the equivalent of paying for 9.41 Ubiquiti PicoStation units at local prices. This can be compared to 245 units that the same money can buy in the United States with the initial amount.

### *Investment by the private or public sector*

As of 22 March 2009, the internet was taken off the list of investment priorities for the nation and considered superfluous spending by presidential instruction, as gazetted in Official Gazette No. 39,146. This means that for the national plan or in the national government’s agenda, access to the internet is considered a luxury. As a result, currency exchange petitions from this sector have been put at the bottom of the pile.

## **Technological factors**

### *Current state of connectivity*

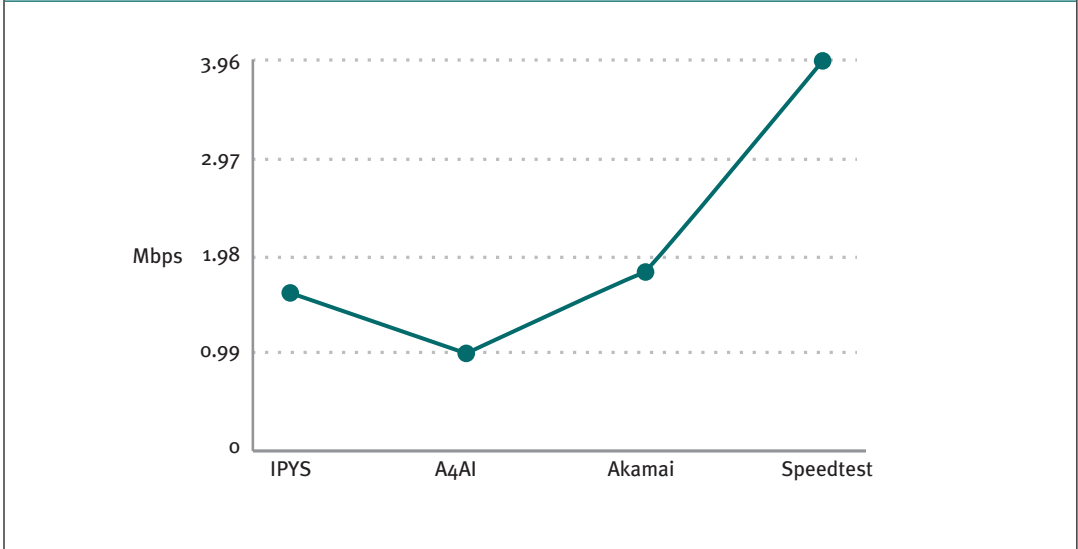
Connectivity in Venezuela is going through a critical period. Internet speeds in the capital of the country can reach 20 Mbps with some providers (to which

7 [https://articulo.mercadolibre.com.ve/MLV-503105794-enrutador-modem-conmutador-inalambrico-xiaomi-mi-fi-gestion-\\_JM](https://articulo.mercadolibre.com.ve/MLV-503105794-enrutador-modem-conmutador-inalambrico-xiaomi-mi-fi-gestion-_JM)

8 [https://articulo.mercadolibre.com.ve/MLV-515144909-router-gigabit-inalambrico-de-banda-dual-n600-tl-wdr3600-\\_JM](https://articulo.mercadolibre.com.ve/MLV-515144909-router-gigabit-inalambrico-de-banda-dual-n600-tl-wdr3600-_JM)

9 [https://articulo.mercadolibre.com.ve/MLV-464069979-antena-ubiquiti-nanostation-m2-24-ghz-11dbi-\\_JM](https://articulo.mercadolibre.com.ve/MLV-464069979-antena-ubiquiti-nanostation-m2-24-ghz-11dbi-_JM)

10 <https://libremesh.org>

**FIGURE 1.****Average broadband internet speed in Venezuela**

only a few have access), but when leaving the federal district, the chances of getting a quality service provider are very few. Venezuela occupies one of the last positions on global quality of service indexes<sup>11</sup> and the last position in the region.<sup>12</sup>

International phone calls can no longer be made because the fixed exchange control policy does not allow operators to cope with the devaluation of the currency.<sup>13</sup> Because of this, citizens turn to the internet to communicate with the rest of the world – even though the state of connectivity is as precarious as the economic situation.

Figure 1 compares average internet speeds in Venezuela. We draw on four major reports for measurements. Firstly, we use the report from IPYS Venezuela,<sup>14</sup> which is from our point of view the most valuable source of internet-related and freedom

of communication insights in the country. Besides this report, we draw on data from the Alliance for Affordable Internet (A4AI),<sup>15</sup> Akamai<sup>16</sup> and Ookla (Speedtest).<sup>17</sup> As they suggest, the average broadband speed does not surpass 4 Mbps, and is reported to be lower than 2 Mbps by three of the reports.

### Spectrum access

Venezuela has set aside the 324 MHz band of spectrum for mobile services, and the national regulator Conatel has identified portions of spectrum available in the 700 MHz, 800 MHz, 900 MHz, 1700 MHz, 1900 MHz, 2 GHz and 3.6 GHz bands, as disclosed in an administrative ruling published in the Official Gazette back in 2016. This has been confirmed on several occasions by measurements performed by other authors.<sup>18</sup>

However, these concessions have been granted for only two categories: community television and

11 [www.speedtest.net/global-index#mobile](https://www.speedtest.net/global-index#mobile)  
[www.speedtest.net/global-index](https://www.speedtest.net/global-index)

12 According to the UN Economic Commission for Latin America and the Caribbean (ECLAC), Venezuela is one of the countries with the slowest high-speed connections, with about 0.2% connections with a speed of over 10 Mbps. Economic Commission for Latin America and the Caribbean. (2018). *State of broadband in Latin America and the Caribbean*. [https://repositorio.cepal.org/bitstream/handle/11362/43670/S1800532\\_en.pdf?sequence=1&isAllowed=y](https://repositorio.cepal.org/bitstream/handle/11362/43670/S1800532_en.pdf?sequence=1&isAllowed=y)

13 Associated Press. (2016, 11 April). Venezuela's cellphone providers suspend international calls. *Daily Mail*. [www.dailymail.co.uk/wires/ap/article-3534144/Venezuelas-cellphone-providers-suspend-international-calls.html](http://www.dailymail.co.uk/wires/ap/article-3534144/Venezuelas-cellphone-providers-suspend-international-calls.html)

14 Balbi, M., et al. (2018, 8 May). Internet surfing at its minimum. Situation of internet in Venezuela. IPYS. <https://ipysvenezuela.org/2018/05/08/internet-surfing-at-its-minimum-situation-of-internet-in-venezuela>

15 [https://a4ai.org/affordability-report/data/?\\_year=2017&indicator=ITU\\_O&country=VEN](https://a4ai.org/affordability-report/data/?_year=2017&indicator=ITU_O&country=VEN)

16 <https://www.akamai.com/uk/en/about/our-thinking/state-of-the-internet-report/global-state-of-the-internet-connectivity-reports.jsp>

17 [www.speedtest.net/global-index/venezuela#fixed](https://www.speedtest.net/global-index/venezuela#fixed)

18 Zennaro, M., & Arcia-Moret, A. (2013). Low cost spectrum measurements. In E. Pietrosemoli & M. Zennaro, *TV White Spaces: A Pragmatic Approach*. Abdus Salam International Centre for Theoretical Physics. [wireless.ictp.it/twvs/book/twvs.pdf](https://www.wireless.ictp.it/twvs/book/twvs.pdf); Hernandez, M. (2016). Caracterización de los espacios en blanco del espectro radioeléctrico: Caso de estudio del Estado Merida. In L. Belli, *Community Connectivity: Building the Internet from Scratch. Annual Report of the UN IGF Dynamic Coalition on Community Connectivity*. <https://bibliotecadigital.fgv.br/dspace/handle/10438/17528>

radio stations. Currently there is no information about any other type of concession on the official portal of the regulator. This seems in line with the 180-degree about-turn taken by the current administration regarding open internet access.<sup>19</sup>

### *The threat of theft of infrastructure*

The dire economic situation in the country makes this a key factor that needs to be considered when attempting to set up communications infrastructure.

In Venezuela, complaints about the massive theft of infrastructure are public knowledge and despite investment by private entities in security, the problem does not go away. The theft of equipment ranges from kilometres of fibre optic cable to repeaters, towers, batteries and antennas.

These forms of vandalism put pressure on any sort of bottom-up, collaborative governance structure that communities try to put in place. Like a recent Reuters article states,<sup>20</sup> local operators expect a worsening of service quality in the short term due to theft.

## **Legislation that works against freedoms**

### *Discouraging policies*

When a community network or a local project is set up by a community, the main thing is the people and the positive impact of this project on their lives. The purpose of providing a local connectivity tool is to improve the quality of the community and not, in any way, to put these people in danger or under the radar of any legislator. Unfortunately, in Venezuela there are recent laws that pose a real threat to freedom of expression, especially in digital media.

The first one is the Law against Hate, Intolerance and for Peaceful Coexistence, passed by the National Constituent Assembly in 2017.<sup>21</sup> According to the law, any speech could be described as “hate speech”, and the law could be arbitrarily applied to imprison someone, which threatens

freedom of expression and intimidates critics of the government.<sup>22</sup> At the same time, the Venezuelan constitution does not allow people to express opinions anonymously. This enables witch-hunting and threatens people’s freedom of expression.

On the other hand, there is the creation of the Strategic Centre for Security and Protection of the Fatherland (CESSPA) in 2013.<sup>23</sup> One of the objectives of CESSPA is to serve as a central repository for information on security, defence and intelligence. The regulation proposes the creation of an entity whose functions will be the surveillance and monitoring of internet communications.

This, together with the new definition of “hate speech”, begs the question: how do you establish a community network without allowing the users freedom of speech and having to censor certain conversations? Community networks base their principle of neutrality, according to Navarro et al., on “a commons oriented framework for community networks” where the network can be used for any participant for any purpose. Therefore, a network where some types of communications are prohibited expressions (while they are not illegal) is not a neutral network or not a community network.<sup>24</sup>

## **Action steps**

While it is incredibly difficult to develop community networks in Venezuela, it is not fair to say it is impossible. The truth lies in trying to understand the sum of the difficulties and how to find allies to circumvent them.

Some of these difficulties are out of the control of the community: the exchange rate, the cost of equipment, laws that censor free speech, and even the likely theft of equipment, despite measures a community might take to safeguard their networks. These point to areas where civil society can engage legislators and policy makers in search of solutions.

19 Urribarrí, R. (2013). Op. cit.

20 Oré, D. (2016, 15 December). Crime wave worsens Venezuela’s already shaky telecoms service. *Reuters*. <https://www.reuters.com/article/us-venezuela-telecoms/crime-wave-worsens-venezuelas-already-shaky-telecoms-service-idUSKBN1441TH>

21 Urribarrí, R. (2013). Op. cit.

22 [espaciopublico.org/ley-odio-monopolio-estatal-etica/#.WuZuMdNuZQK](https://www.espaciopublico.org/ley-odio-monopolio-estatal-etica/#.WuZuMdNuZQK)

23 [www.el-nacional.com/noticias/politica/oficializan-creacion-del-centro-estrategico-seguridad-proteccion-patria\\_151643](https://www.el-nacional.com/noticias/politica/oficializan-creacion-del-centro-estrategico-seguridad-proteccion-patria_151643)

24 Navarro, L., et al. (2016). A Commons-oriented Framework for Community Networks. In L. Belli, *Community Connectivity: Building the Internet from Scratch. Annual Report of the UN IGF Dynamic Coalition on Community Connectivity*. <https://bibliotecadigital.fgv.br/dspace/handle/10438/17528>

## Community Networks

THE 43 COUNTRY REPORTS included in this year's Global Information Society Watch (GISWatch) capture the different experiences and approaches in setting up community networks across the globe. They show that key ideas, such as participatory governance systems, community ownership and skills transfer, as well as the "do-it-yourself" spirit that drives community networks in many different contexts, are characteristics that lend them a shared purpose and approach.

The country reports are framed by eight thematic reports that deal with critical issues such as the regulatory framework necessary to support community networks, sustainability, local content, feminist infrastructure and community networks, and the importance of being aware of "community stories" and the power structures embedded in those stories.

GLOBAL INFORMATION SOCIETY WATCH

2018 Report

[www.GISWatch.org](http://www.GISWatch.org)



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