



# TOWERS OF POWER

# Week 4

- Agenda
- Final Project Expectations
- Review Homework
- Guest: Dhruv Mehrotra - SDR Workshop
- Nicaraguan Political Upheaval, Infrastructure, Censorship, and Network Responsibility

# **Final Project - May 14 (4:30-7:30pm)**

Your final will be a **pitch to potential investors** about a product, or service that uses or creates communications infrastructure.

You can use any technology from **GSM, WiFi**, anything using the **radio spectrum**, or even **physical infrastructure**. Your goal is to have **a project that can improve a community or solves a real problem**. You will present a prototype, and have a presentation that clearly explains the problem, your solution, and a feasibility plan for implementation.

# Previous Final Project

## Tutele.

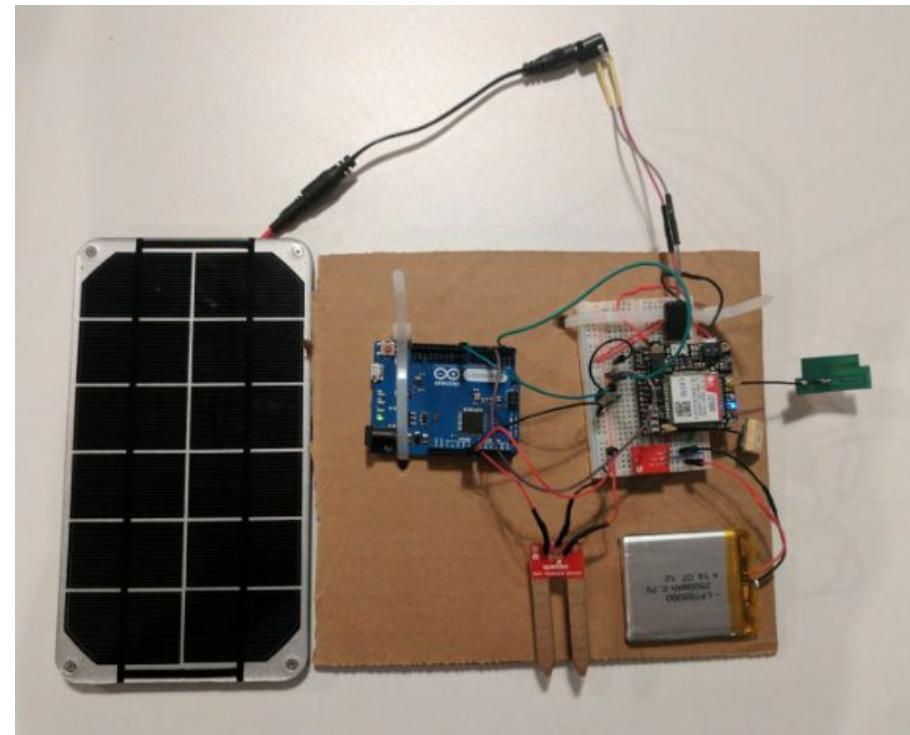
A **DIY TV Broadcast** system



# Previous Final Project

## Solar Powered GSM IoT device for agriculture

<http://blog.mithru.com/solar-powered-gsm-based-iot-device-for-agriculture/>



# TOWERS OF POWER | SMS BROADCAST BRACELET



## DESIGN CHALLENGE

*Present a design concept for a networked device or system that helps a community in need.*

My concept is a GSM button that sends emergency SMS messages to the family, friends, lawyer and other key contacts of an Immigration and Customs Enforcement raid victim.

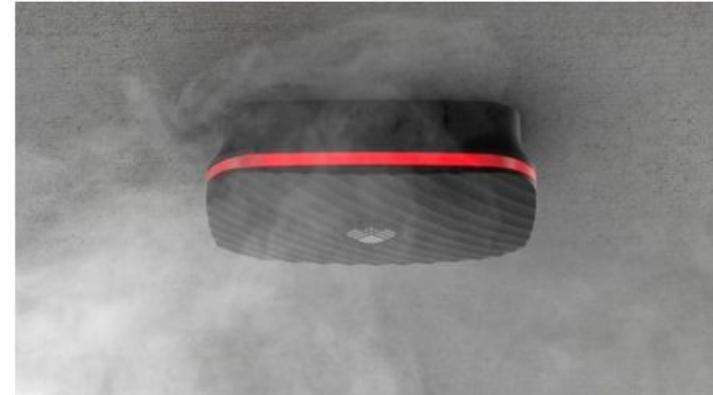


N·GEMS

NEXT GENERATION  
EMERGENCY  
SYSTEMS

Know where your people  
are when knowing  
matters the most.

REQUEST A QUOTE



## Specialized Hardware

A specialized hardware installation scans radio frequencies (WiFi, Bluetooth, RFID), enabling people-localization through their wireless devices. This allows first responders to focus their rescue efforts and maximize operational effectiveness.

# **Review Homework**

# **RTL - SDR**

**and other**

# **Radio Magic**

**By Dhruv Mehrotra**

# **Homework for Next Week**

**Built to Last (Chapters 1-6)**

**Final Project Idea**

**Business Model Canvas for your final Project**

# The Business Model Canvas

Designed for:

Designed by:

Date:

Version:



**Customer Segments**: Who are the customers? What do they think? See? Feel? Do?

**Value Propositions**: What's compelling about the proposition? Why do customers buy, use?

**Channels**: How are these propositions promoted, sold and delivered? Why? Is it working?

**Customer Relationships**: How do you interact with the customer through their 'journey'?

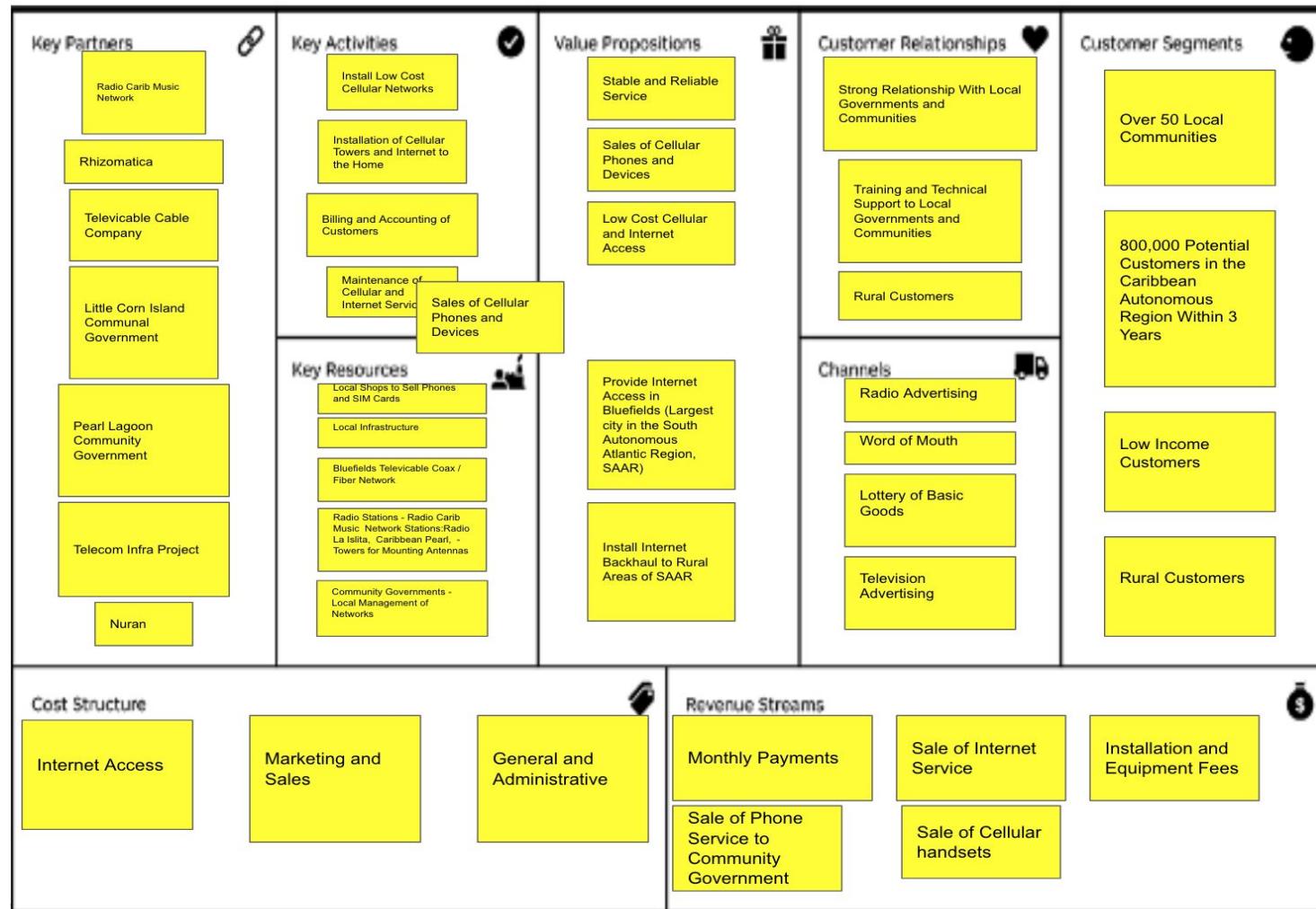
**Revenue Streams**: How does the business earn revenue from the value propositions?

**Key Activities**: What *uniquely* strategic things does the business do to deliver its proposition?

**Key Resources**: What unique strategic assets must the business have to compete?

**Key Partnerships**: What can the company *not* do so it can focus on its Key Activities?

**Cost Structure**: What are the business' major cost drivers? How are they linked to revenue?





# Bluefields Othernet



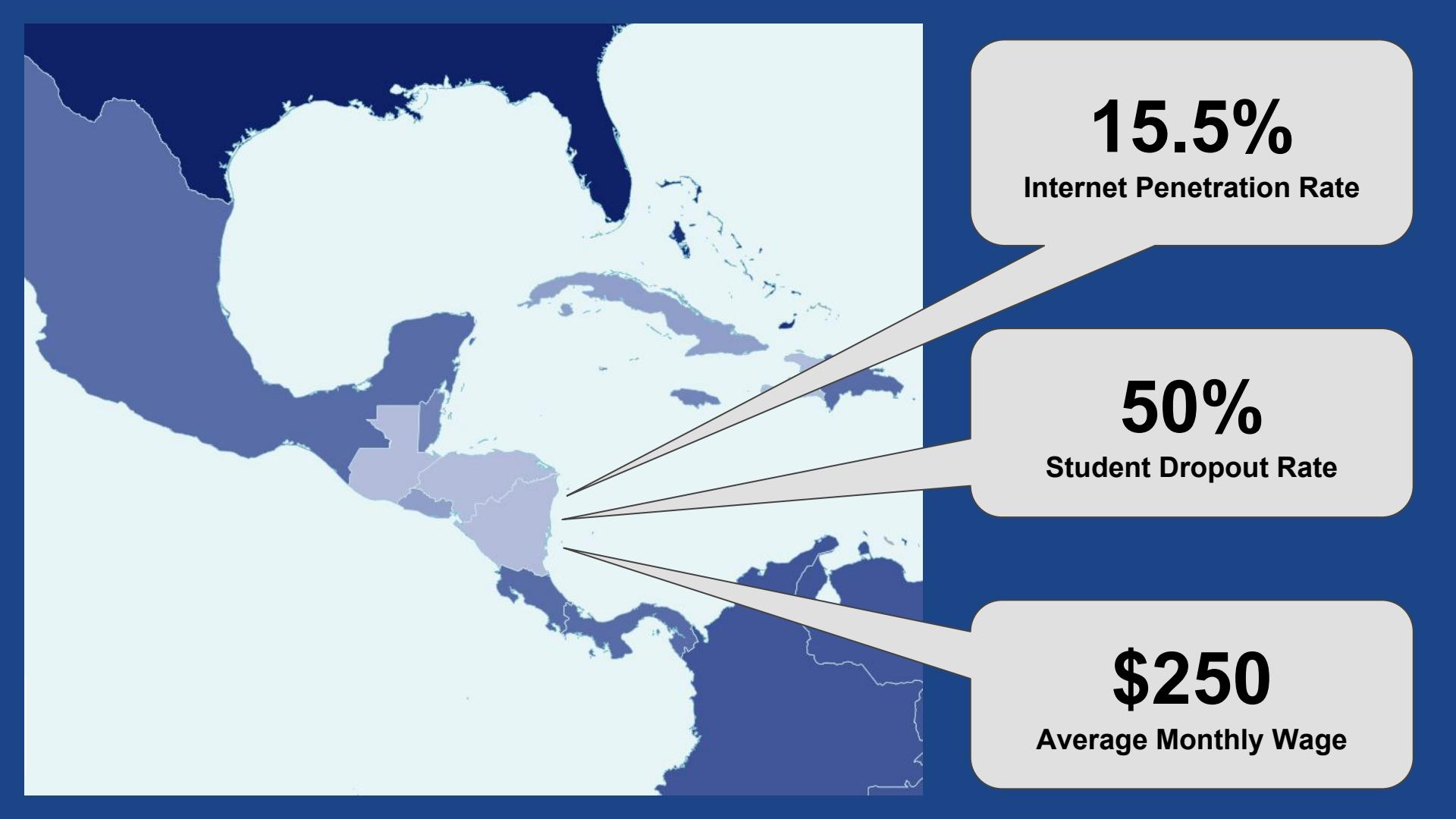
**Noticinc Bluefields**

April 16 at 11:54pm ·

Porque la unidad hace la fuerza , pobladores del municipio de Corn Island , con baldes en las manos y hombros lanzando agua, logran apagar el fuego del comedor propiedad de la señora Jeannett Leban , según información se conoció que el fuego inició en el piso de arriba, se desconoce las causas, lamentablemente no se pudo salvar nada de esa vivienda , pero si logran que el incendio no afectará otras casas vecinas .

nos solidarizamos con la señora Jeannett Leban y la instamos aque siga adelante, que no pierda la fé y que recuerde que nada se mueve sin el poder de Dios.

Three separate photographs showing a multi-story building on fire. The top photo shows the building from a distance with thick smoke billowing out. The bottom-left photo shows a closer view of the flames and smoke. The bottom-right photo shows another angle of the burning building.



**15.5%**

Internet Penetration Rate

**50%**

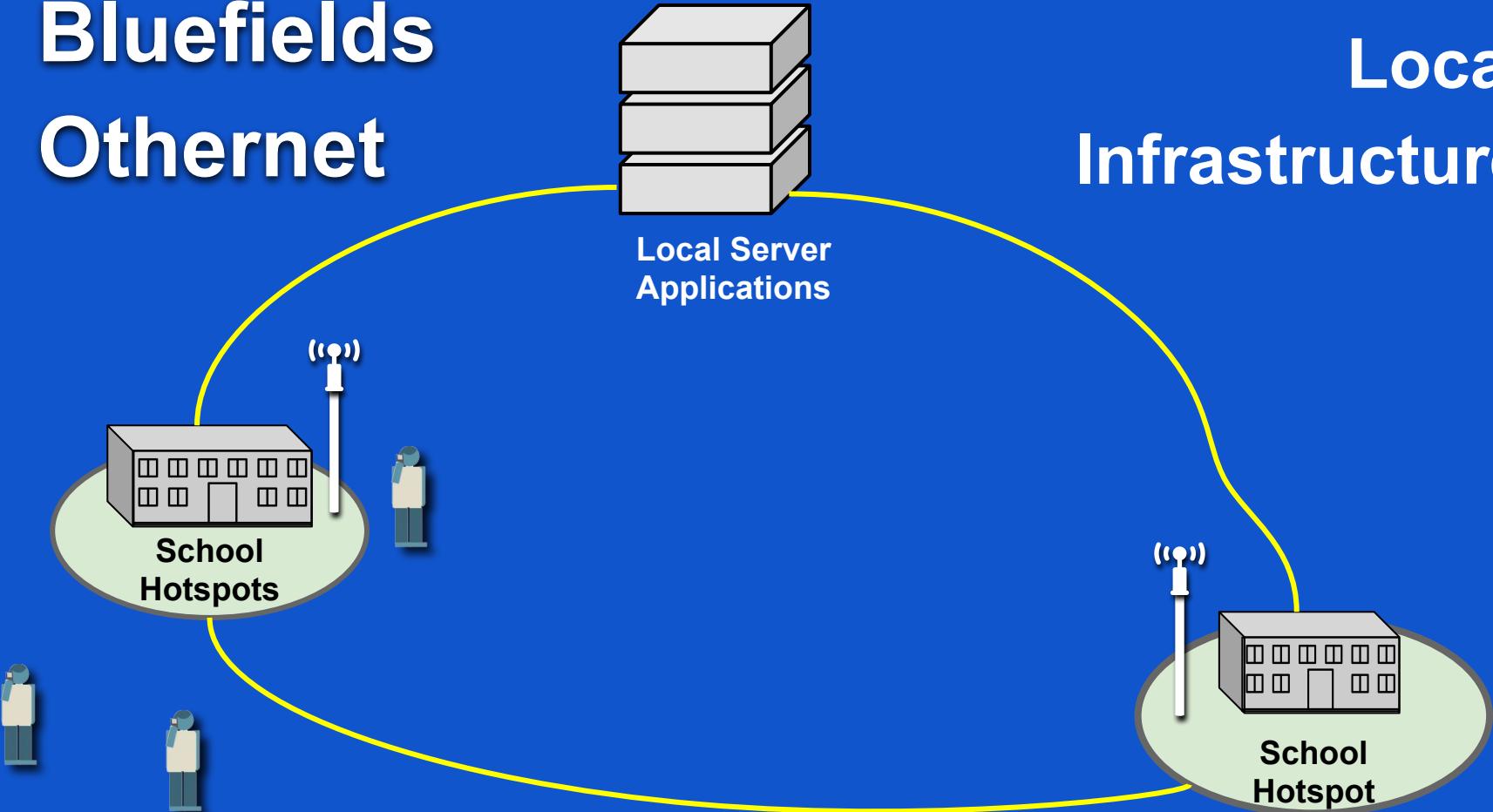
Student Dropout Rate

**\$250**

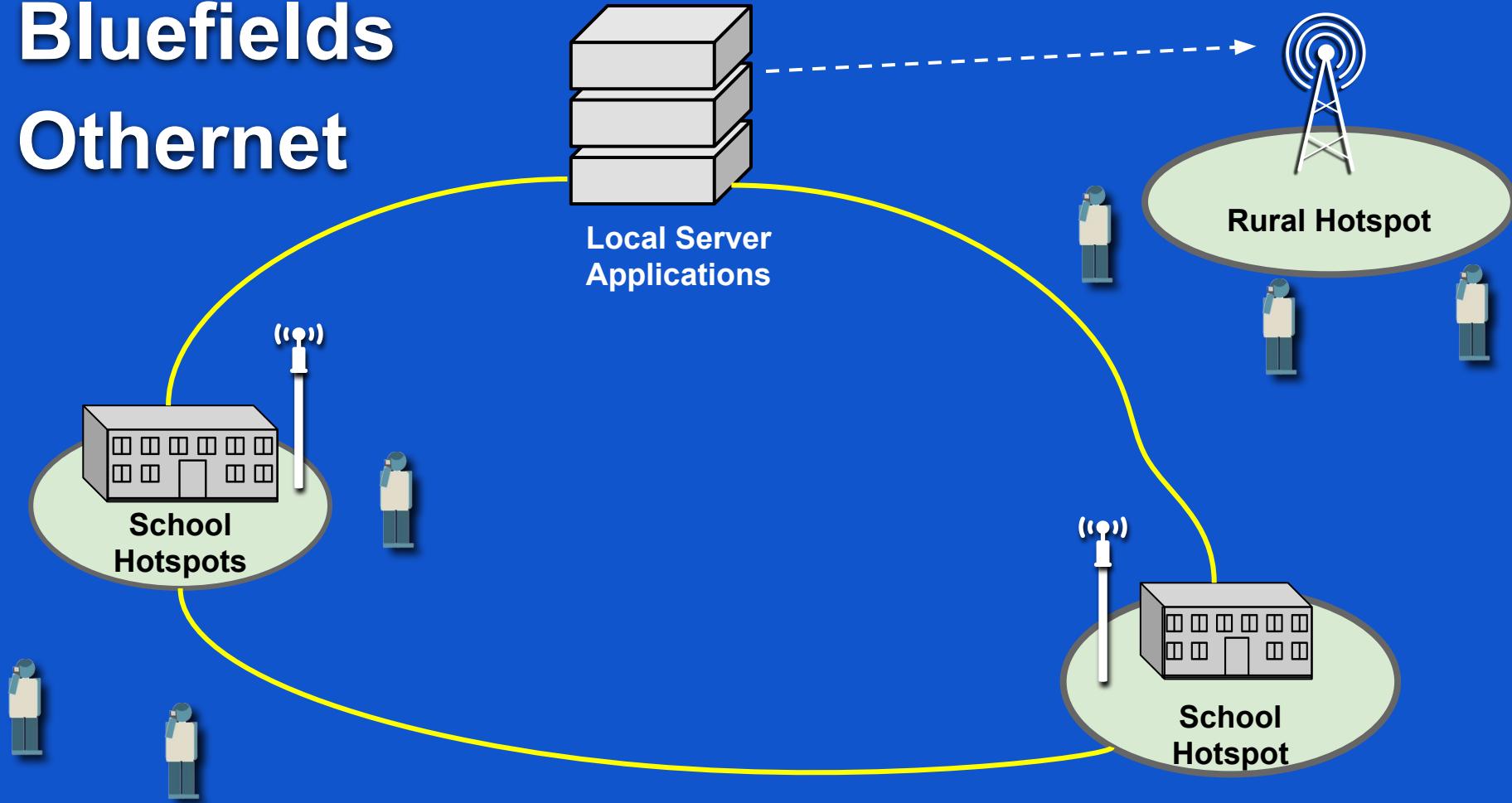
Average Monthly Wage

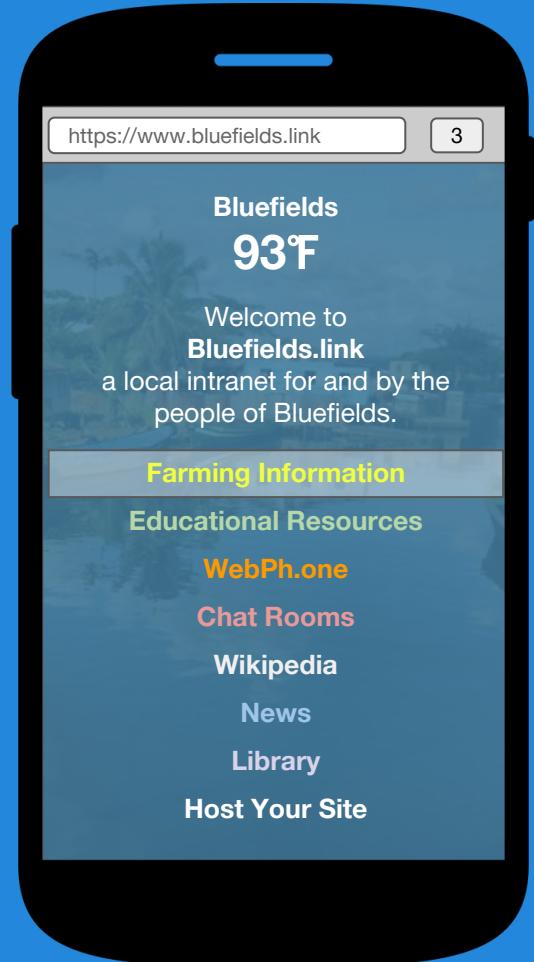
# Bluefields Othernet

# Local Infrastructure



# Bluefields Othernet

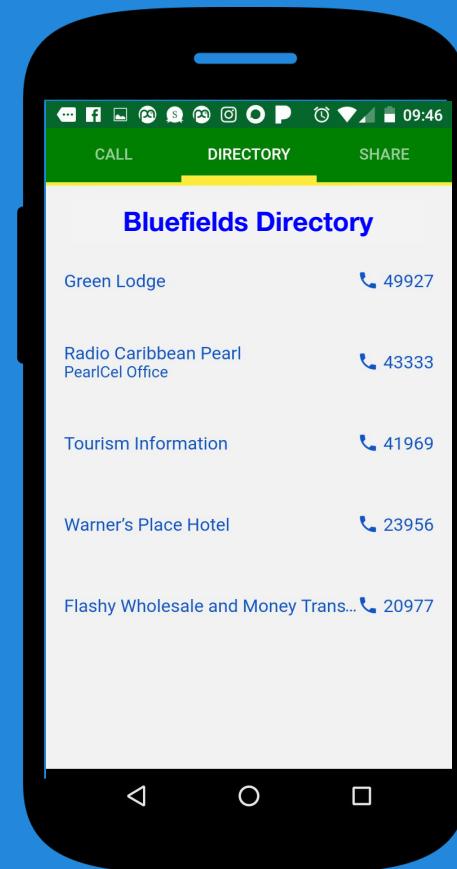
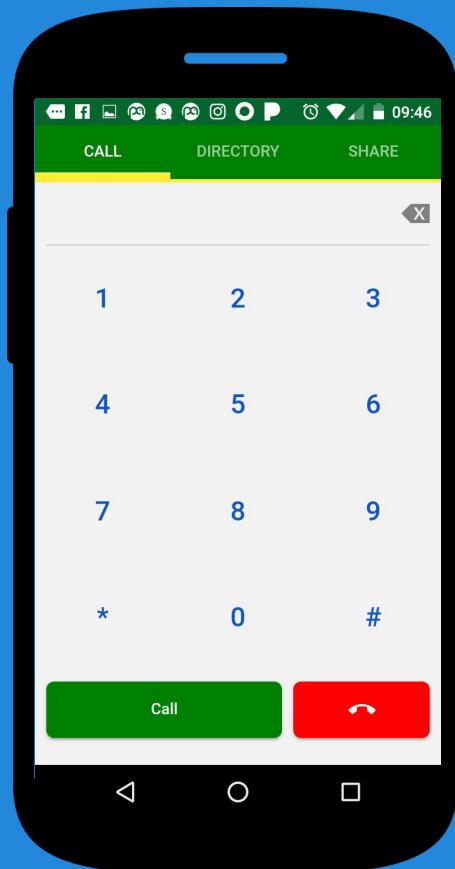


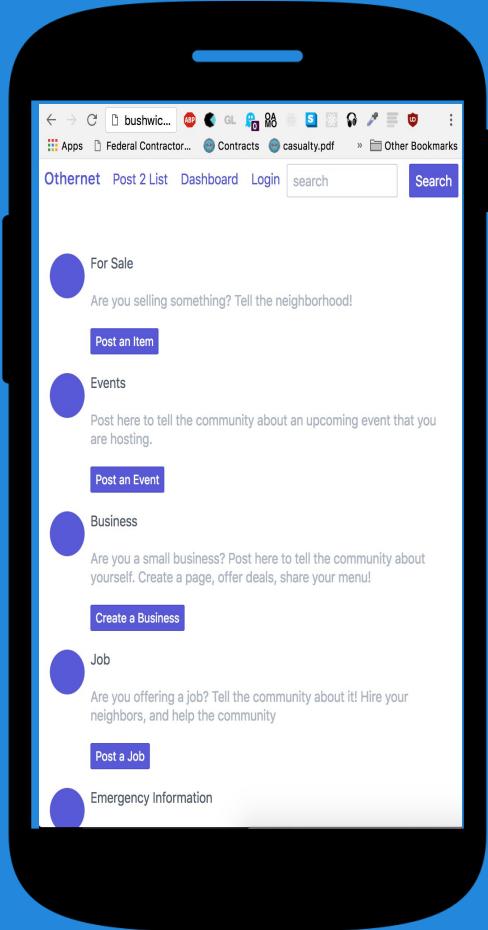


# Othernet

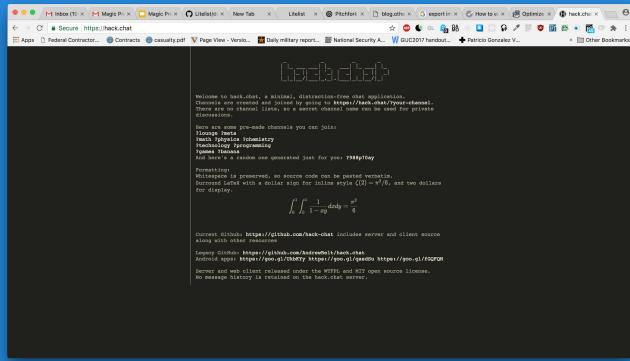
## Free Local Apps & Resources

# Webph.one





# StreetPost



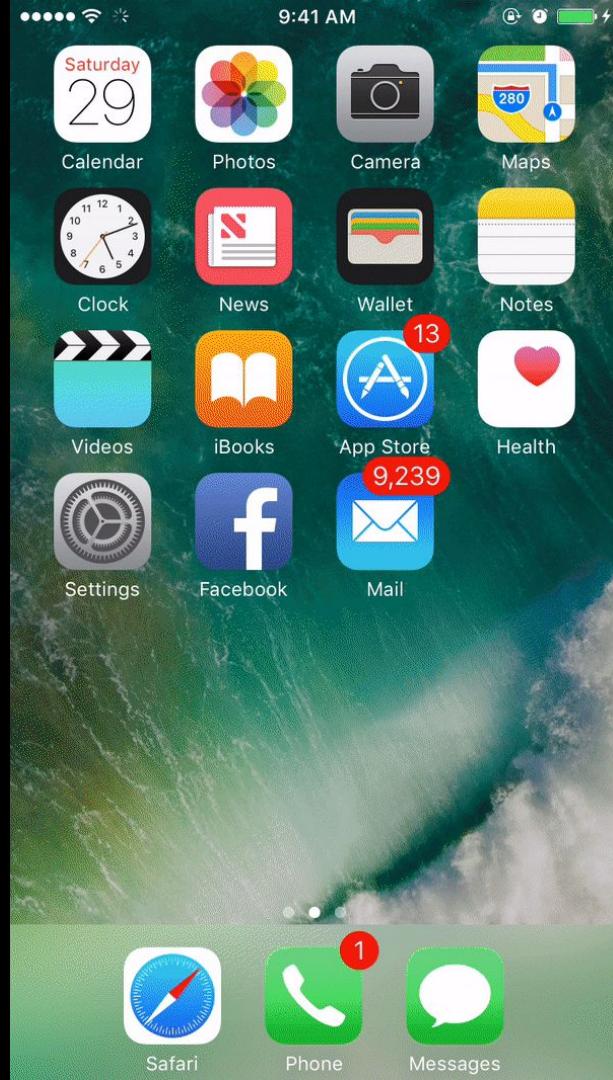
# Othernet.chat

# Wikipedia

# Urban Dictionary

# Citizen News

A screenshot of a web browser displaying the 'blog.othernet.xyz' homepage. The page has a white background with black text. It features a header with the site's name, a main content area with sections like 'Main Page' and 'Welcome', and a sidebar with various links and a logo.



A screenshot of a Microsoft Word document. The title 'Sewing Lab Hours' is at the top. Below it is a bulleted list: 'How to Sewing Machine', 'Fabric Patterns', 'Sewing Tools', 'Cotton Ironing Board', 'Cotton Ironing Board', '10 a.m.-4 p.m.', and '714-251-5269'. There is also a small image of a sewing machine in the top left corner.

A screenshot of a web browser window. The address bar shows the URL 'www.google.com'. The main content area displays a search result for 'Korean Gourmet Deli'. The top result is a link to 'Korean Gourmet Deli' with the subtitle 'Braised Beef Short Ribs'. Below the link is a small thumbnail image of a restaurant storefront. The page also includes a snippet of the website's content and a snippet from a review.

A screenshot of a LinkedIn profile page. The header reads "FREELANCE ARTIST". The main content area features a large photo of a person with curly blonde hair. Overlaid on the photo is a white box containing the text "Whatsup" above a close-up image of a smiling mouth showing white teeth. To the right of the photo are several profile details: "12 years", "Visual Arts", and "12 reviews".

A screenshot of a web browser showing the 'About the Program' section of the Food Justice Project website. The page has a light blue header with the project's logo and navigation links. Below the header, there are two main sections: 'ABOUT THE PROGRAM' on the left and 'ADVANCED TRAINING' on the right. Each section contains several bullet points with descriptive text and small images. At the bottom of the page, there is a large image of a woman in a blue apron standing in a garden, and a link to a 'Food Justice Project' video.

A screenshot of a Microsoft Edge browser window. The address bar shows 'edge://extensions'. The main content area has a dark green background. At the top center, the text 'What is this' is displayed in white. Below it, there are several lines of text in green: 'THIS IS MY CONTENT THIS IS MY CONTEXT', 'THIS IS MY CONTEXT THIS IS MY CONTENT', 'THIS IS MY CONTEXT THIS IS MY CONTENT', 'THIS IS MY CONTEXT THIS IS MY CONTENT', and 'THIS IS MY CONTEXT THIS IS MY CONTEXT'. In the lower-left corner, there is a small image of a person's face. A large blue rectangular box is overlaid on the page, containing the text 'This is where I type things' in white. At the bottom of the page, there is some small, illegible text.

## about othernet list

It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. The point of using Lorem Ipsum is that it has a more-or-less normal distribution of letters, as opposed to using 'Content here, content here', making it look like readable English. Many desktop publishing packages and web page editors now use Lorem Ipsum as their default model text, and a search for 'lorem ipsum' will uncover many web sites still in their infancy. Various versions have evolved over the years, sometimes by accident, sometimes on purpose (injected humour and the like)



### For Sale

Are you selling something? Tell the neighborhood!

[Post an Item](#)

### Events

Post here to tell the community about an upcoming event that you are hosting.

[Post an Event](#)

### Business

Are you a small business? Post here to tell the community about yourself. Create a page, offer deals, share your menu!

[Create a Business](#)

### Job

Are you offering a job? Tell the community about it! Hire your neighbors, and help the community

[Post a Job](#)

### Emergency Information

Do you have any information that will help the community in the event of an emergency? Post here

[Post Emergency Information](#)



**What do you think about  
Facebook?**

Nicaragua  
April 19, 2018



# Forest Fires Reserva Indio Maiz

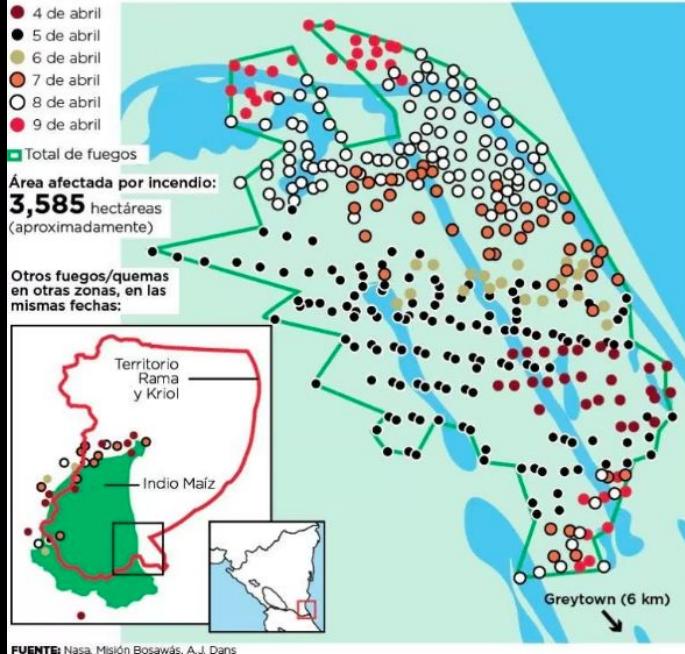


April 13, 2018

# Forest Fires Reserva Indio Maiz

## EXTENSIÓN DEL INCENDIO FORESTAL

Entre el refugio de vida silvestre Río San Juan y la Reserva Biológica Indio Maíz  
Territorio Rama y Kriol



FUENTE: Nasa, Misión Boswás, A.J. Dans

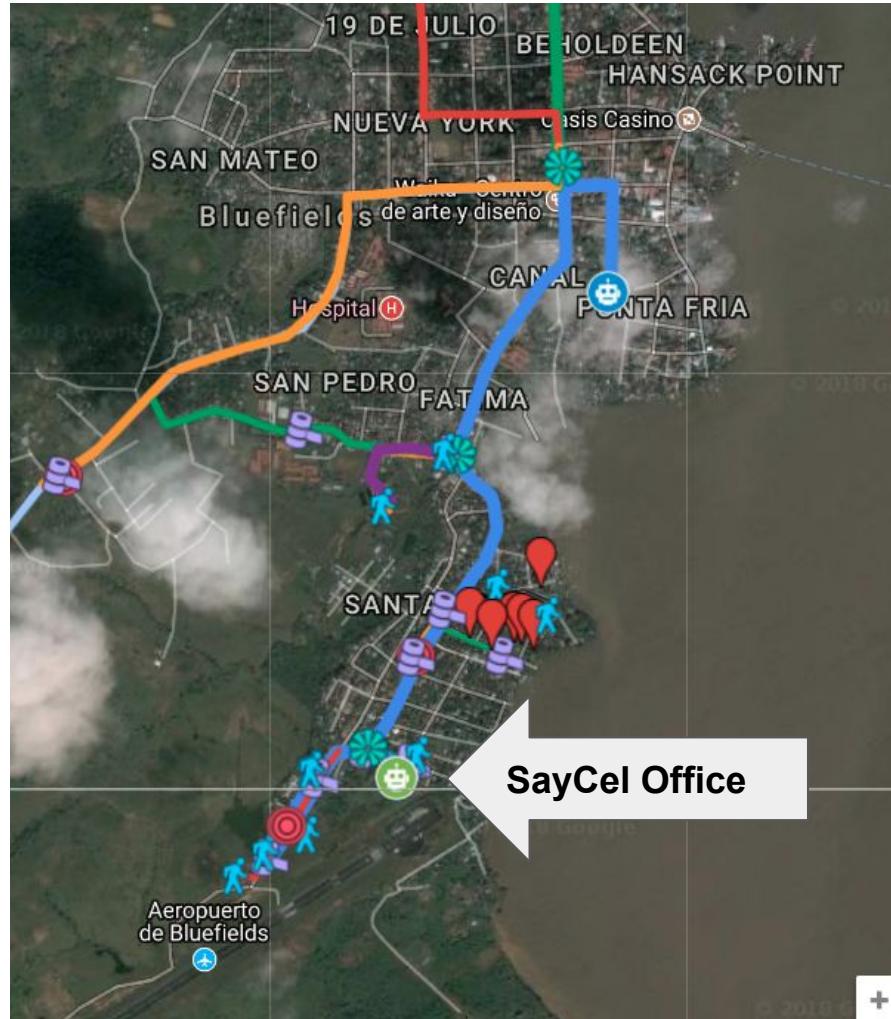


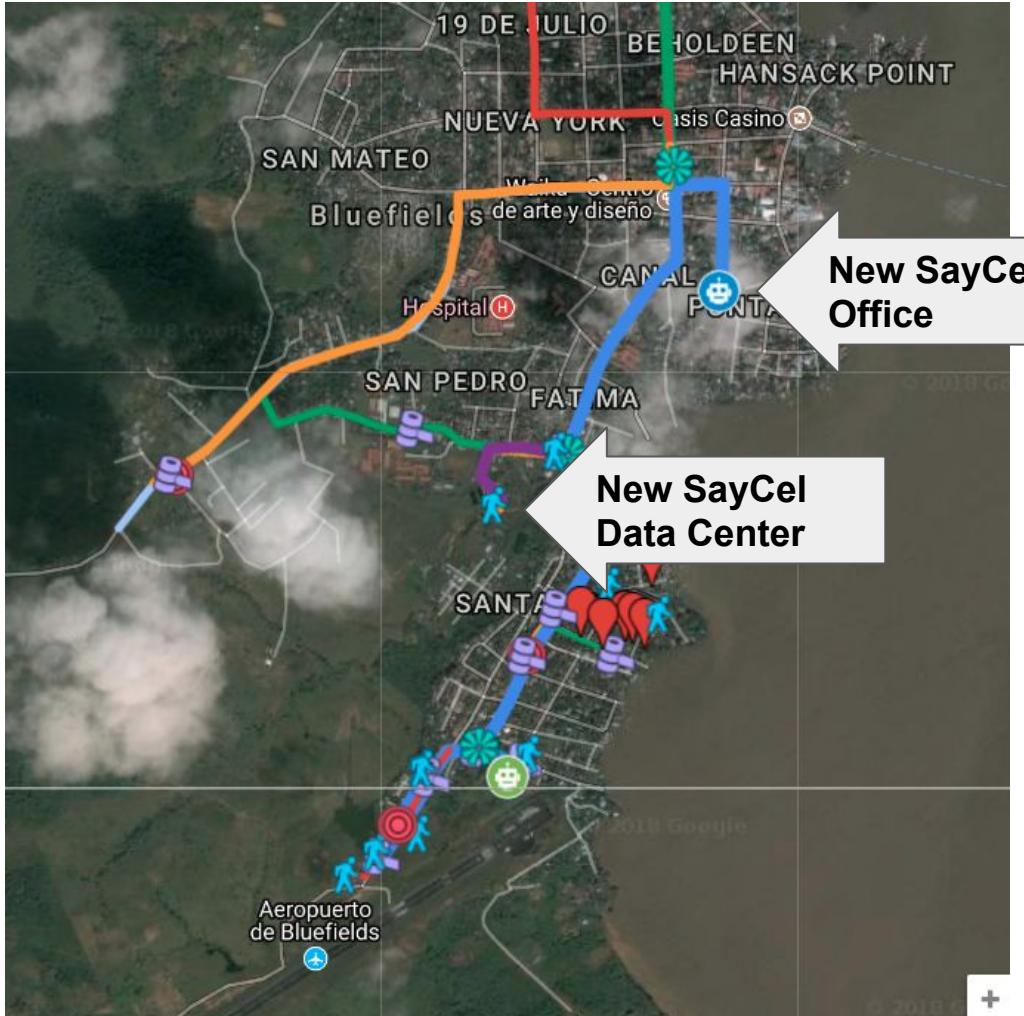
# SayCel Rent **increase from \$150 to \$250**

April 14, 2018

**Owner claiming  
increase in electrical cost**

**C\$8,000 -> C\$11,000 (\$266 to \$366)**





# SayCel Move



# Social Security Reforms

April 17, 2018

**5% Increase  
social security tax for workers**

From 2%-7%

**5% Increase  
social security tax for businesses**

From 17.5% to 22.5%

**5% decrease  
pay for retiree social security benefits**



# Retiree Benefits

C\$4,000 (\$132)



C\$3,800 (\$122)



# Peaceful Protest



# Peaceful Protest

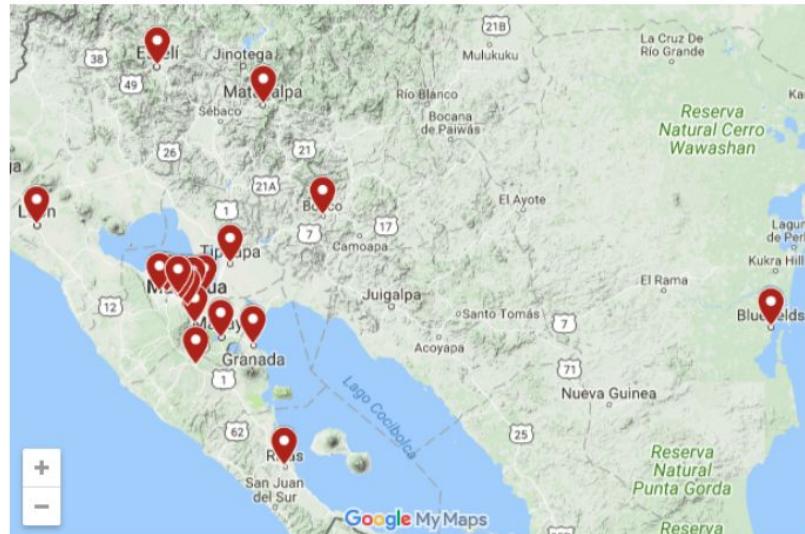


## El mapa que muestra cómo se propagan las protestas en contra de las reformas al INSS

Rosario Murillo insiste en minimizar el alcance nacional de las protestas. Los ha calificado de "grupos minúsculos". Ha habido más de 50 protestas en diferentes puntos de Nicaragua y el mundo

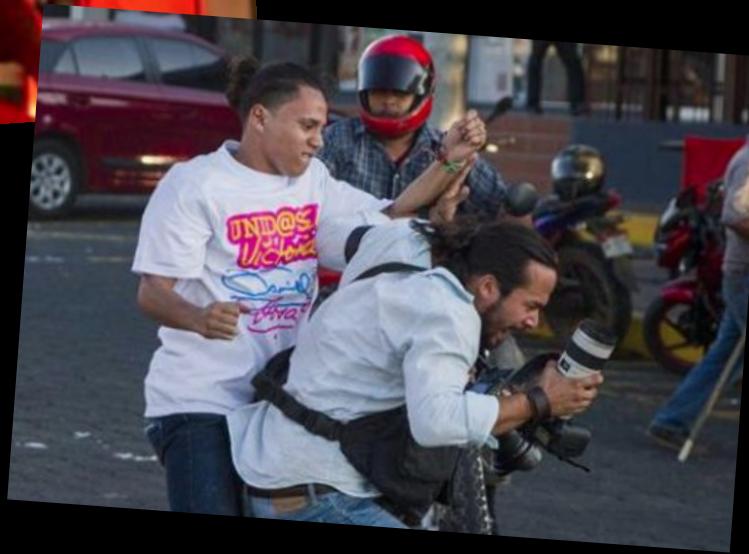
Moisés Martínez , Isela Baltodano

20/04/2018



En el mapa se pueden apreciar los puntos de protestas en Nicaragua y el mundo. A  
PRENSA/Captura de Pantalla

# Protest Spread April 18, 2018



# Protest Spread

## April 18, 2018

© REUTER

**TV Channels  
taken off  
the Air  
April 18, 2018**



**3 Dead**



First Lady & Vice President  
**Rosario Murillo**

**“the protesters are  
minuscule vampires  
out for blood”**









**CONFIDENCIAL-TV**

UNIVERSITARIO • ESTUDIANTES



#Noi



UPOLI

POLICIA ATACA A 500 ESTUDIANTES ANTRINCHERADOS EN UNIVERSIDAD

CONOEXIAS.COM.AR EMPRESARIOS ZONA FRANCA: QUE SE RESPETEN DERECHOS HUMANOS DE

• EN DIRECTO

# Los muertos de la represión que Daniel Ortega oculta



Más de 20 nicaragüenses han muerto en cuatro días de protesta. La mayoría son jóvenes menores de 24 años. Confidencial



Reporter shot dead during live broadcast in Nicaragua

Journalist Angel Gajona killed during a Facebook Live transmission  
It is suspected to be by the Police

# Dictator Somoza

The Somoza dictatorship lasted 3 generations from 1936 - 1979



# Dictator Somoza and Sandino

Sanidino is the first  
Sandinista and fought and  
expelled the US from  
Nicaragua.

Solidifies power and  
assassinated  
Augusto Sandino.



# Somoza and the Sandinistas

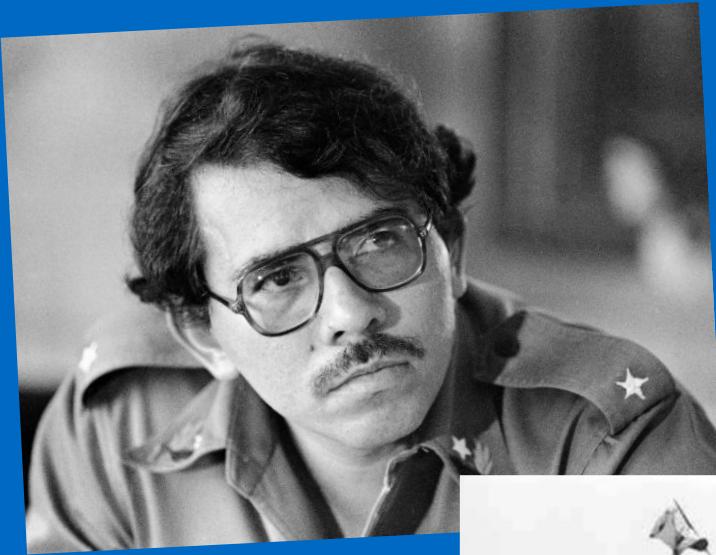
Discontent

Censured Media

“He may be a son of a bitch, but he is our con of a bitch” President Roosevelt



# The Sandinistas (FSLN)







1979

Sandinista  
Revolution  
overthrows  
Samoza



Somoza statue  
toppled



**Presidente Comandante Daniel Ortega**

**1979-1991**

MARCH 31, 1986

\$1.25

# TIME

**The Man  
Who  
Makes  
Reagan  
See Red**

Nicaragua's  
President  
Daniel Ortega



Paul Davis

*Money, Money  
Everywhere*





# **Sandinista Contra War**

## **Nicaragua's Civil War**

### **1980-1990**



**Negotiated Cease Fire calls for elections and  
Daniel Ortega loses to Violeta Chamorro in 1990**



Liberal Democracy unable to increase quality of life in Nicaragua  
Allows Ortega to take control of FSLN Party



2006-2017

Peace  
and  
Love  
  
Sandinista  
Campaign



# Arboles de Vida



Cortesía

Rolonda Jean Paul Genie



Más de 140 "arbolatas" hay en todo el país

# April 20, 2018 - Arboles de Vida



**Propaganda by Nicaragua Stations  
“Talavera is kidnapped”**



A screenshot of a social media post from the page "Noticias 24/7 Nicaragua". The post shows a man in a white shirt standing outdoors at night. The caption reads: "UNIVERSITARIOS NO LE TOCARON NI UN SOLO PELO A TELEMACO ,CONDENAMOS EL LLAMADO ALA VIOLENCIA DEPARTE DE MEDIOS OFICIALISTAS". The post has 432 likes, 49 comments, and 465 shares. The interface includes standard social media icons for sharing and a notification bell.

# Propaganda by Nicaragua Stations “Talavera is kidnapped”



# Store Looting

 Frente Libre Nicaragüense  
April 23 at 6:34pm • 3

A estos ladrones tambien los van a encarcelar? Los van a enjuiciar, los van a apalear a como lo hicieron con nuestros hermanos estudiantes??

2 horas •

Esto si es lo último!! Trabajadores del INSS, tambn ladronzuelos baratos 😂😂😂 hay q tener dignidad!!! No les da pena q ganan bien y andan robándole al país 😞😡 hay q hacer viral a esta gente corriente!!



John Peterson

nigos en común, incluidos Franco Junieh y Oscar

jar a amigos Mensaje

Trabaja en Instituto Nicaragüense De Seguridad Social - INSS

Ver otras personas que trabajan en INSS

Vive en Managua





# Journalist Renounce



**April 21, 2018 - Reverse Reforms**









## The role of FACEBOOK





# April 18 - Protest Day 1 - Wednesday

Official announcement of reforms

Old people get beat

[https://www.youtube.com/watch?v=NE\\_7ArvoB\\_g](https://www.youtube.com/watch?v=NE_7ArvoB_g)

Censorship of TV stations

# Protest Day 2 - Thursday

Protest Spread

Censure of TV stations

Go off the air

# Protest Day 3 - Friday

Murillo Talks

Calls the protestestor a minority

# Protest Day 3 - Friday

Indiscriminate shooting at universities, Radio in flames...

# Protest Day 4 - Saturday

Ortega Talks -

# Protest Day 4 - Saturday

Angel Guardado Murdered in Bluefields

Bluefields far from rest of country



Prot

<https://www.facebook.com/FLNicaragua/>