



Enabling access to
unconventional data
safely, ethically
and at scale



Big Data
in Agriculture
CONVENTION

2019

16-18 OCTOBER. HYDERABAD, INDIA

LED BY:



HOSTED BY:



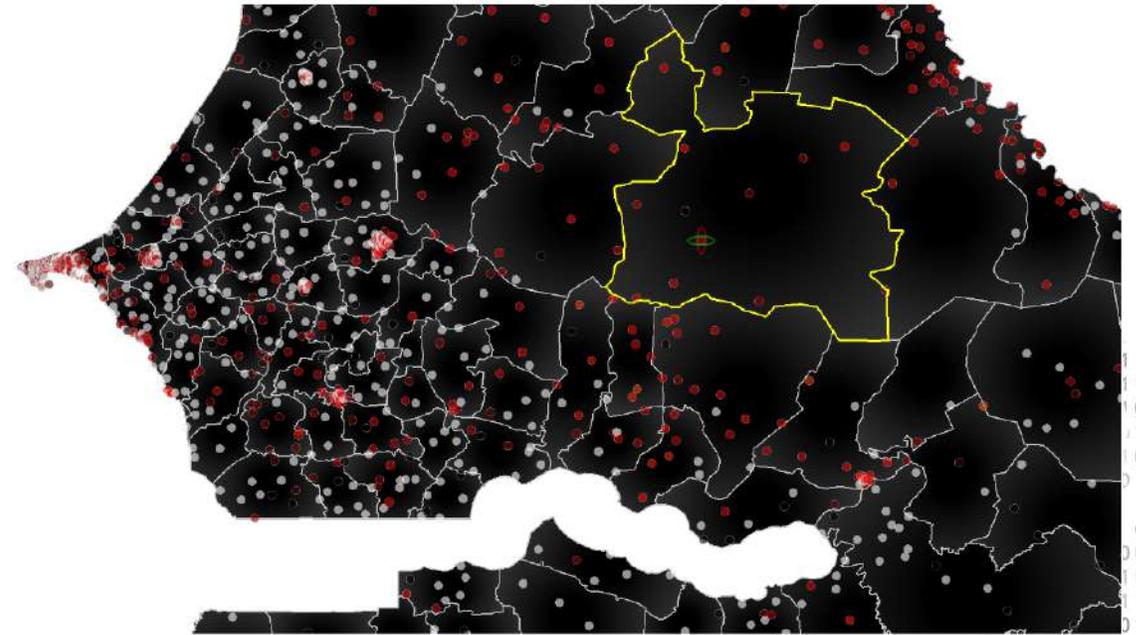
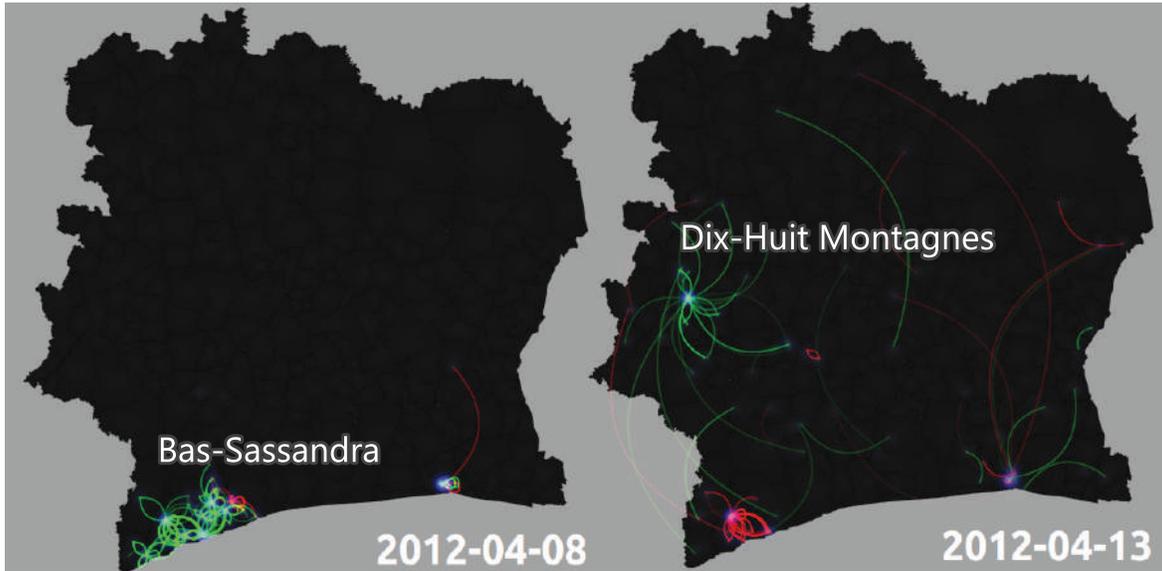
Keep thinking about **TRUST**...

Do you trust me?

Until when?

Shall I trust myself?

Accessing unconventional data is great...



Data for Development Challenge (2012, 2014)

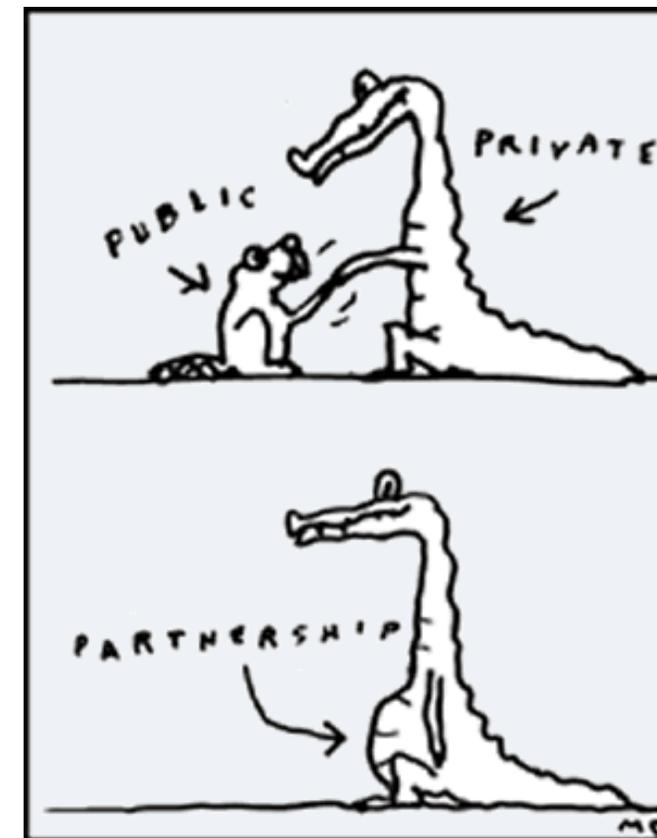
... But there are hurdles to sensitive data use

Lack of appropriate **data connections**,
capacities, and **culture** to use data

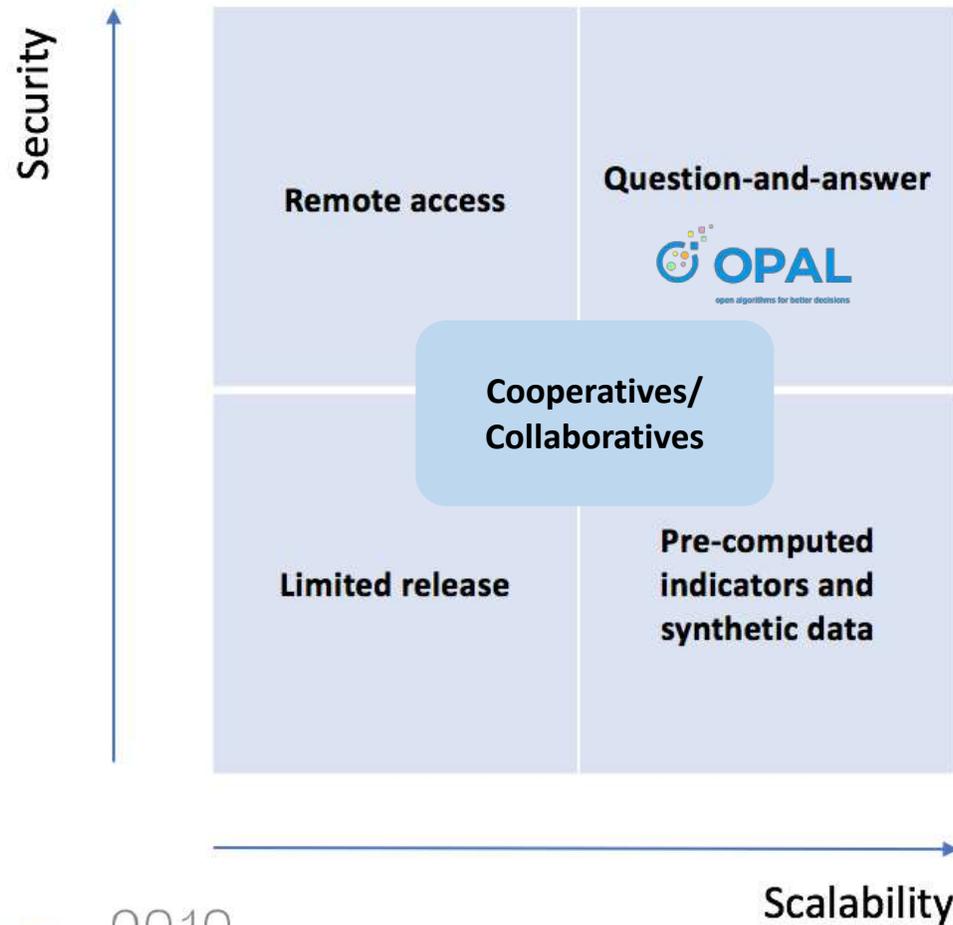
Bad/weak incentives from powerful agents

Distrust, disdain, echo chambers, alternative facts narratives, fears, hampering innovation, cooperation, consensus, compromise....

No “Killer use case” yet....harder to make the case



Crux: how to 'open' 'private' sensitive data without exposing them, safely, ethically, at scale?



On the privacy-conscious use of mobile phone data

Yves-Alexandre de Montjoye , Sébastien Gambs, Vincent Blondel, Geoffrey Canright, Nicolas de Cordes, Sébastien Deletaille, Kenth Engø-Monsen, Manuel Garcia-Herranz, Jake Kendall, Cameron Kerry, Gautier Krings, Emmanuel Letouzé, Miguel Luengo-Oroz, Nuria Oliver, Luc Rocher, Alex Rutherford, Zbigniew Smoreda, Jessica Steele, Erik Wetter, Alex "Sandy" Pentland & Linus Bengtsson

Scientific Data 5, Article number: 180286 (2018) | [Download Citation](#) ↓

Les Echos

DÉCRYPTAGE

Nos données peuvent-elles servir l'intérêt général ?

PROSPECTIVE - De plus en plus de voix s'élèvent pour demander que les données collectées par les entreprises privées soient mises au service de la collectivité.

Open algorithms: A new paradigm for using private data for social good

By Thomas Roca, Emmanuel Letouzé | 18 July 2016

The un-convention | Simone Sala, Data-Pop Alliance

#BDPHYDERABAD2019

So what's OPAL?

OPAL (for "Open Algorithms") is a non-profit socio-technological innovation developed by a group of partners

MIT Media Lab

Imperial College London

Orange

World Economic Forum

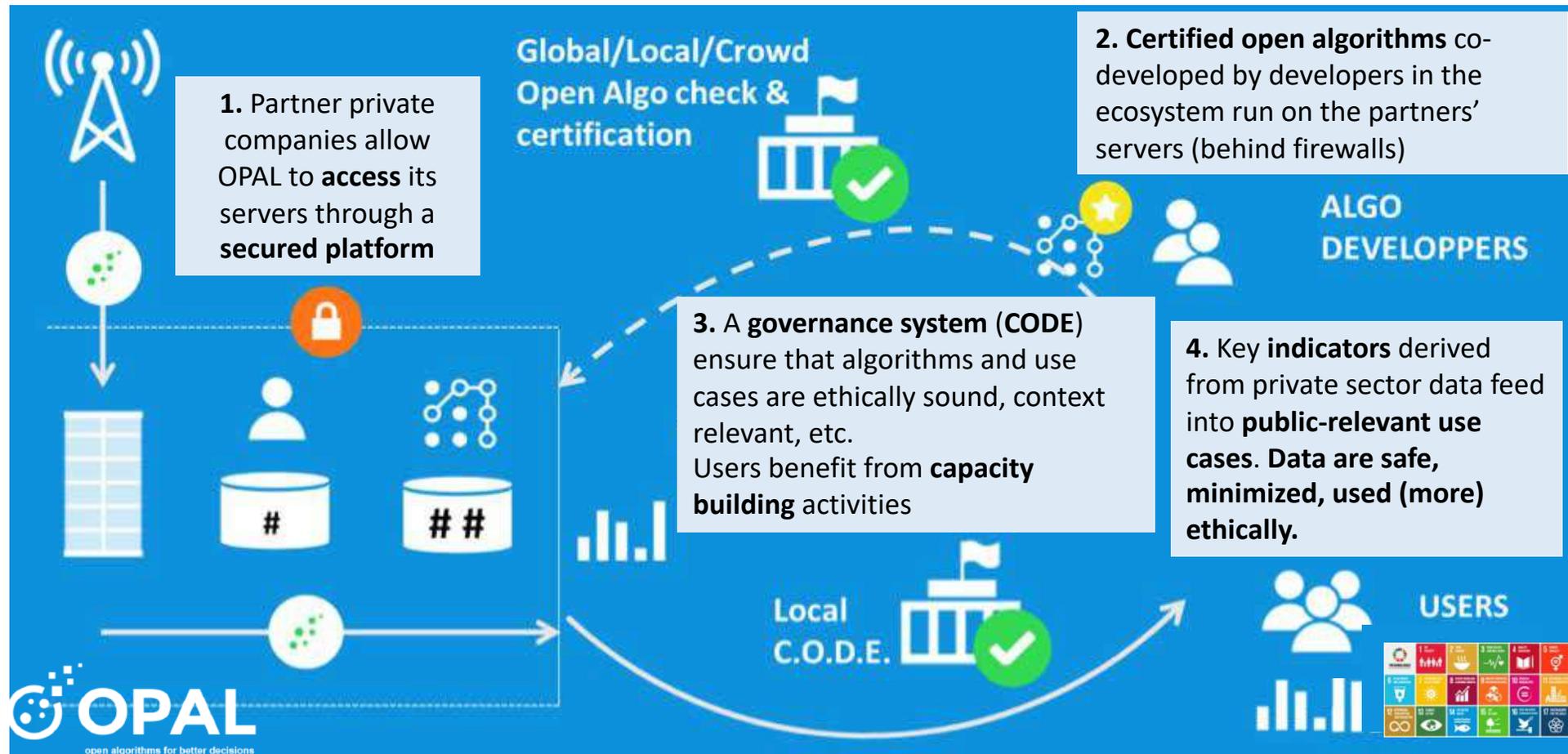
Data-Pop Alliance

OPAL aims to serve as a **trusted enabler** to **unlock the potential of data** collected by private organizations by **bringing the code to the data** through **open algorithms** and safe and fair technological and governance systems

→ Better decisions supporting SDGs

<https://www.opalproject.org/>

OPAL: how it works



OPAL is a unique case of a Public-Private-People Partnership piloted in Colombia and Senegal

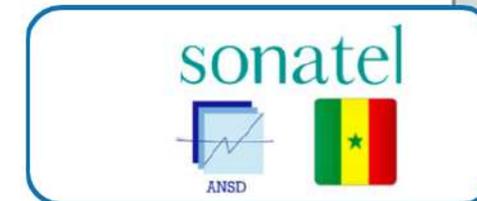
Founders



Funders



Partners



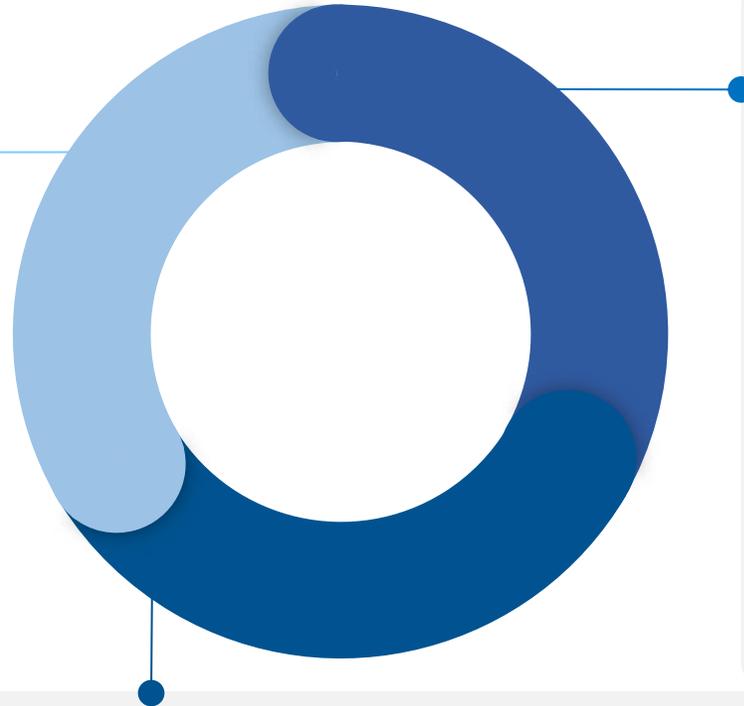
Governance Track

Local CODEs, Friendly User Tests (FUTs) co-development, and capacity and community building activities

Local “Councils for the Orientation of Development and Ethics” (CODEs) have been set up and met in Senegal (4 meetings) and Colombia (2 meetings) to provide oversight and guidance to the project



Bogotá, April 2019



Capacity and Community building activities have taken place in Dakar, Bogotá and Paris, to strengthen relevant skills, incentives and connections, in partnership with local stakeholders



Dakar, March 2018

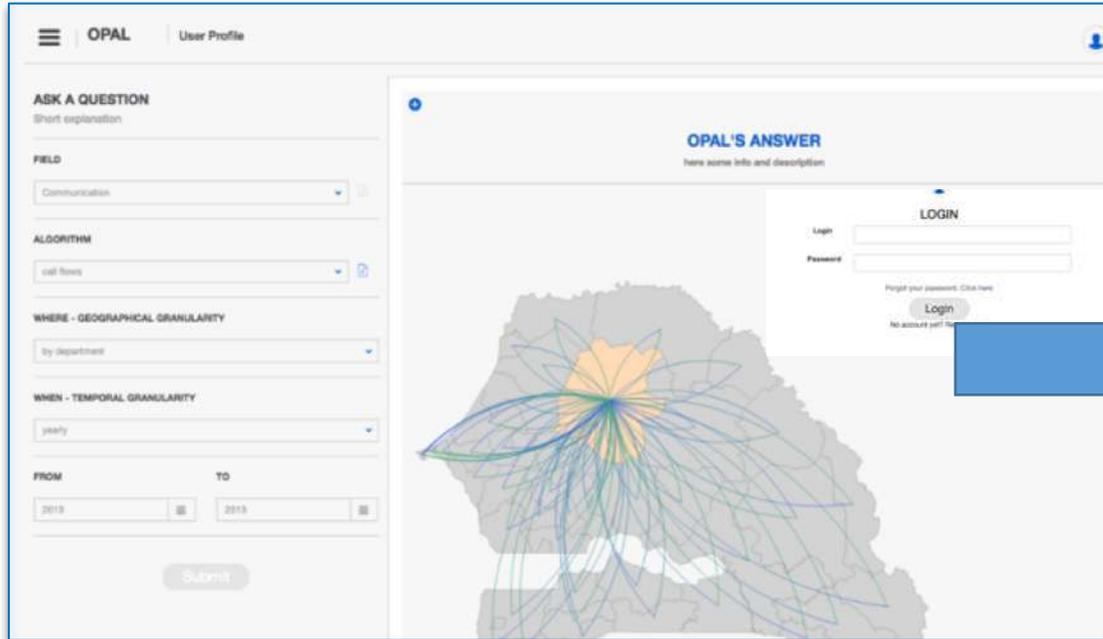
Friendly User Tests (FUTs) have been identified through a collaborative process including user needs assessment, and provided assistance to design, develop and deploy small “proof of concept” use cases in both countries, including both National Statistical Offices



Technology Track

From a Minimum Viable Product with pre-computed indicators on 1 year of CDRs to an API-based platform allowing queries to run on 2 years of data directly on the telco's servers

Minimum Viable Product 1

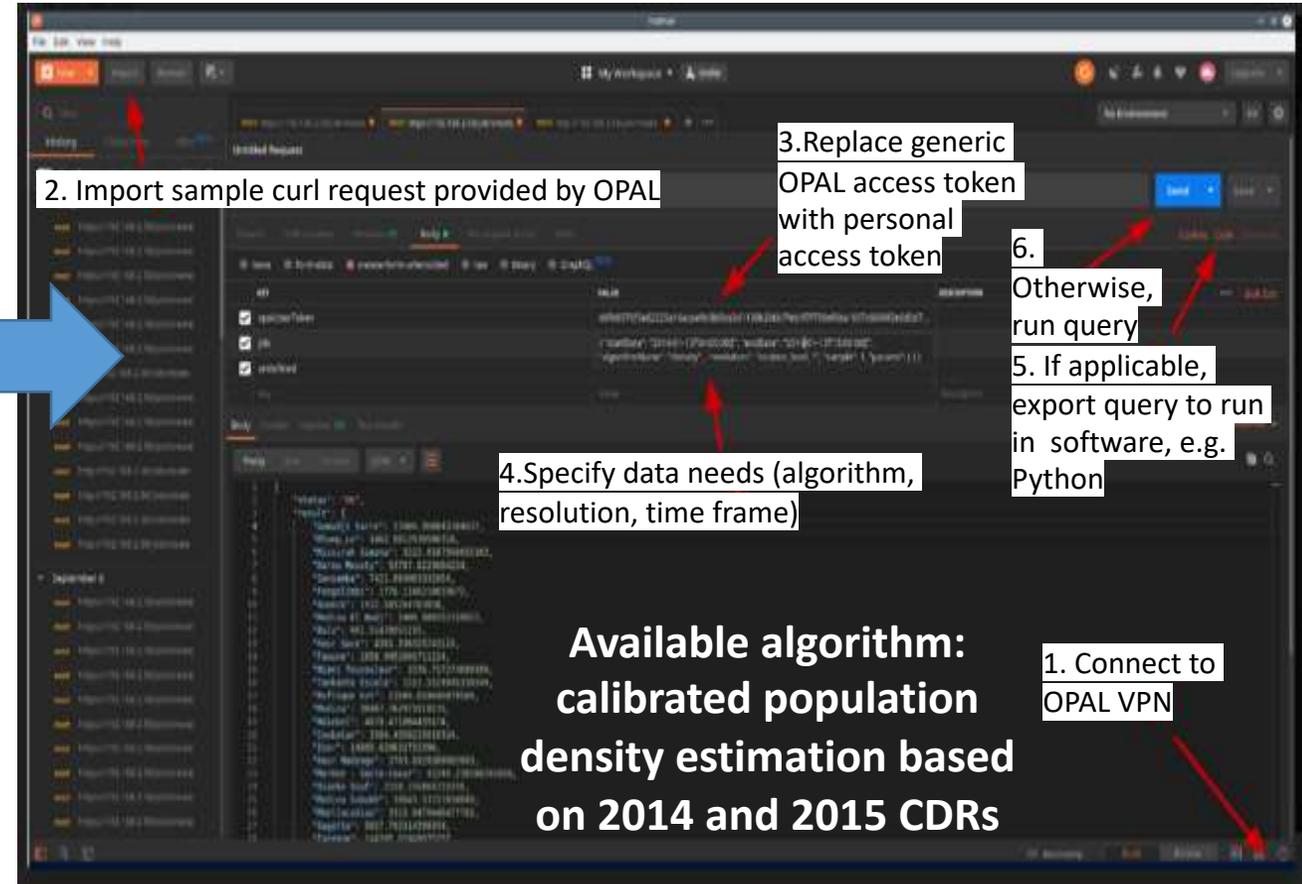


Isolated server installed within the premises of the telco partner

Visualize precalculated indicators on pop density, call volume & mobility (based on 2013 CDRs)

A simple User Interface (UI) developed by Orange Labs

Minimum Viable Product 2 (operational in Senegal)



Take-home message

fight against malaria.” The company is also collaborating with researchers to conduct similar studies in Myanmar and Thailand.

But this type of promotion irks malaria researchers who aren’t convinced that the information is helpful, especially given the lack of resources for proven methods to combat the disease — such as health workers, bed nets, insecticides and malaria drugs. “On an intellectual level, this [mobile-phone research] is attractive,” says Myaing Nyunt, a malaria researcher at Duke University who is based in Myanmar. “But the thing in my head is that actual work is becoming harder to sustain in villages.” Global funding for malaria has plateaued in the past few years, she points out — and with it, progress.

The same practical argument could be made against research on parasite genetics. But Nyunt says that call-record analyses trouble her more, because people haven’t consented to take part.

DATA FOR DEVELOPMENT

In 2012, the mobile-phone company Orange, together with data scientists at the UN and several universities, held a ‘Data for Development’ challenge to encourage researchers to explore positive uses for call-detail records. Phone companies mostly analyse the records to boost their businesses, says Robert Kirkpatrick, director of UN Global Pulse, an initiative to harness big data. “We wanted to show how it could be used for the public good,” he says.

Orange let scientists analyse anonymized call records from customers in Côte d’Ivoire. In one project, researchers found that brief calls surged before small violent events in Côte d’Ivoire, and suggested that future analyses could help officials to predict danger and thus intervene — but that idea hasn’t been taken up.

in the studies. “Is there no way around understanding how isolated refugees are besides using an invasive technique to track people through mobile technology?” asks Alexandrine Pirlot de Corbion, a programme leader at Privacy International in London, a charity that advocates for the right to privacy. Another way to find out whether refugees are isolated would be to ask them questions, which allows them to decide what to share, she adds.

The Turkish computer engineer who helped to organize the refugee challenge, Albert Ali Salah, now at Utrecht University in the Neth-

“NOW IS THE TIME TO PUT IN PLACE STANDARDS TO DO THIS SAFELY, AT SCALE AND ETHICALLY.”

erlands, defends the project’s worth. Anyone who might want to harm any of the 3.6 million Syrian refugees in Turkey already knows their neighbourhoods, he argues. But call-record intelligence might help policymakers by giving them quantitative information about refugee movements. And an ethics committee vetted the results: when research indicated refugees were working at a location illegally, for example, the committee told them not to publish the finding.

Responding to the charge that such data challenges have not helped people, Kirkpatrick says exploration was a necessary first step. The next phase in call-records research, he says, should be cost-benefit analyses that look at the investment needed to conduct a study, roll out an intervention and appraise the advantages for communities.

SECURITY AND CONSENT

In the meantime, exploratory studies continue.

risk off us,” Rivers explains.

Letouzé, de Montjoye and their colleagues are piloting a system called Open Algorithms (OPAL) in Senegal and Colombia. As well as running analyses on phone-company servers, their model includes a committee that vets and shapes researchers’ questions so that the data analysed are less specific. For instance, if aid workers want to know how many people leave Senegal’s capital city Dakar each week, the committee can decide that records should be aggregated by day, rather than by hour. This reduces the number of extra, unapproved questions that the results can answer. “It’s not a perfect system,” de Montjoye says, “but we are trying to find a way to mitigate risks, while making sure data can be used for good.”

Since last year, groups including Flowminder and phone companies that are headquartered in Europe must comply with the European Union’s general data-protection regulation. Although anonymized and aggregated data seem to be exempt, Letouzé thinks that the law signals a trend towards privacy, and suggests that data scientists should consider how they might incorporate consent into their studies. OPAL is planning to send subscribers a text message asking if they want to opt out, which causes Letouzé some concern. “There are studies showing that when you give people an option, you lose about half,” he says. He’d like to change that by convincing people of the worth of their studies, and by giving them assurances about data security.

UNINTENDED CONSEQUENCES

Advocates for data security and human rights say that, although technical changes are welcome, more careful risk assessments are required, because records don’t need to be linked to researchers. “What if I have some

MENU

nature
International journal of science

Subscribe

5

NEWS FEATURE • 29 MAY 2019

Can tracking people through phone-call data improve lives?

Researchers have analysed anonymized phone records of tens of millions of people in low-income countries. Critics question whether the benefits outweigh the risks.

Amy Maxmen

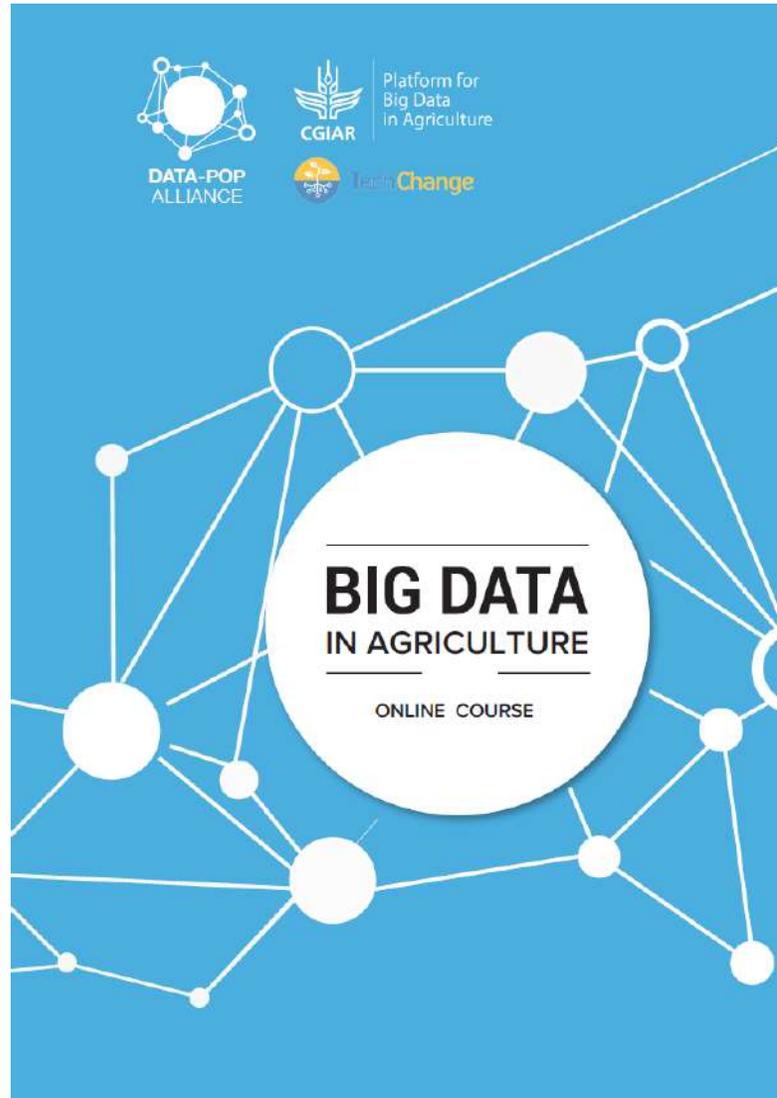


Big Data
in Agriculture
CONVENTION

2019

16-18 OCTOBER, HYDERABAD, INDIA

Speaking of capacity building..



Register & receive more information:
<http://rebrand.ly/BigDataAgri>

Thank you!



Platform for
Big Data
in Agriculture

bigdata.cgiar.org

