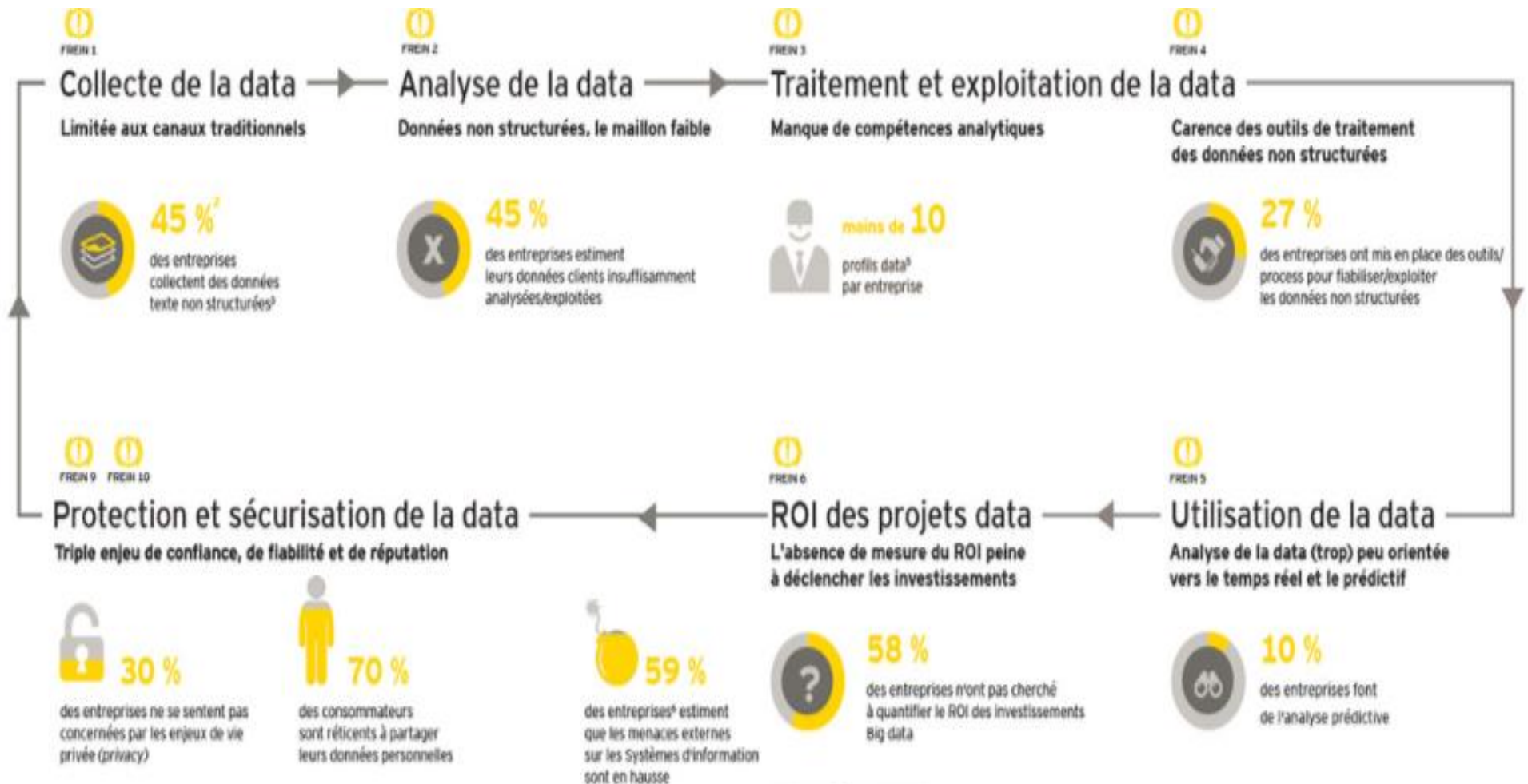

Sixth Regional Workshop for Africa on Standardization of future networks: *Data Management services and Big Data*

Yves MAO – CIO Orange Côte D'ivoire

Date: 27/03/2018

Big Data is a growth driver in this burgeoning digital economy in Africa. Nevertheless, its adoption remains limited for many reasons ...



* Source EY

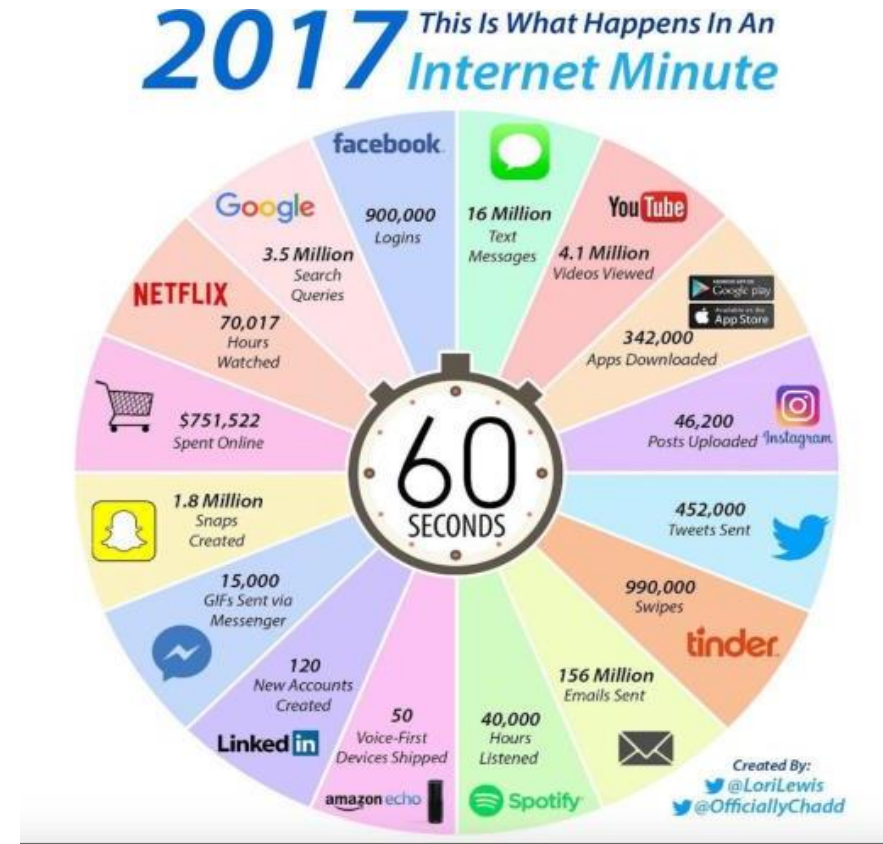
Major challenge for Telco operators is to process huge amounts of data in a context characterized by structured and unstructured information, its velocity and veracity

CDR Data Statistics

activity_ho...	Call In Activity (Sum)		Call Out Activity (Sum)		Internet Traffic Activity (Sum)		SMS In Activity (Sum)		SMS Out Activity (Sum)		Total Activity (Sum)		Total Number of Activity (Count)															
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014														
0		50,028		67,906		2,642,293		257,727		204,213		3,222,186		213,743														
1		30,647		42,262		2,382,301		125,458		105,769		2,636,436		165,399														
2		18,607		27,685		2,037,200		72,944		67,279		2,223,715		143,073														
3		11,392		19,565		1,623,983		47,145		46,562		1,740,646		126,799														
4		9,314		16,434		1,416,734		38,980		37,547		1,519,009		119,856														
5		10,010		16,883		1,293,207		33,038		33,793		1,386,931		123,683														
6		9,604		17,658		1,263,443		39,237		38,221		1,368,163		123,387														
7		18,204		33,688		1,329,090		133,867		67,352		1,582,200		172,904														
8		50,051		81,978		1,523,014		195,502		125,593		1,976,149		208,794														
9		109,690		154,862		1,824,331		284,123		201,096		2,574,103		240,350														
10		173,339		232,418		2,125,101		377,214		255,900		3,163,973		282,054														
11		184,338		235,240		2,324,017		381,481		247,083		3,372,159		268,101														
12		131,311		169,625		2,369,228		304,410		205,811		3,180,384		247,991														
13		109,122		144,510		2,479,739		270,477		185,630		3,189,477		248,959														
14		109,660		139,590		2,574,644		248,696		167,014		3,239,604		236,588														
15		129,453		162,758		2,665,163		255,861		170,479		3,383,713		239,231														
16		147,300		186,105		2,777,003		265,523		166,244		3,542,175		244,785														
17		145,114		185,450		2,786,945		267,448		164,789		3,549,745		239,245														
18		133,432		168,328		2,734,537		244,882		159,259		3,440,438		227,863														
19		105,877		139,559		2,657,574		215,563		150,493		3,269,065		213,127														
20		79,673		103,704		2,602,200		190,096		139,760		3,115,433		199,840														
21		44,071		59,509		2,473,055		144,848		119,011		2,840,495		172,521														
22		24,740		32,891		2,287,930		98,455		91,131		2,535,147		149,199														
23		310,955		344,031		3,023,129		797,880		781,811		5,257,806		342,637														
Grand Total		310,955		1,834,988		344,031		2,438,628		3,023,129		50,142,731		797,880		4,492,973		781,811		3,150,028		5,257,806		62,059,347		342,637		4,587,526

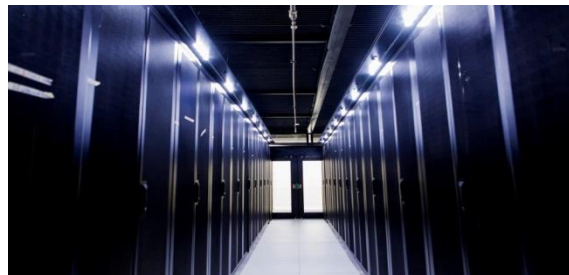
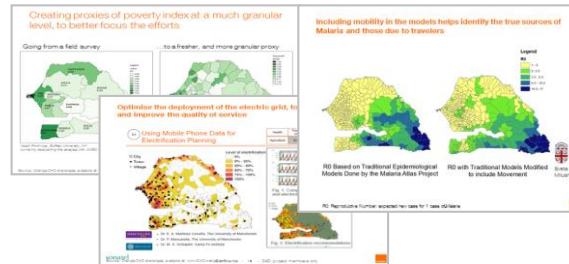
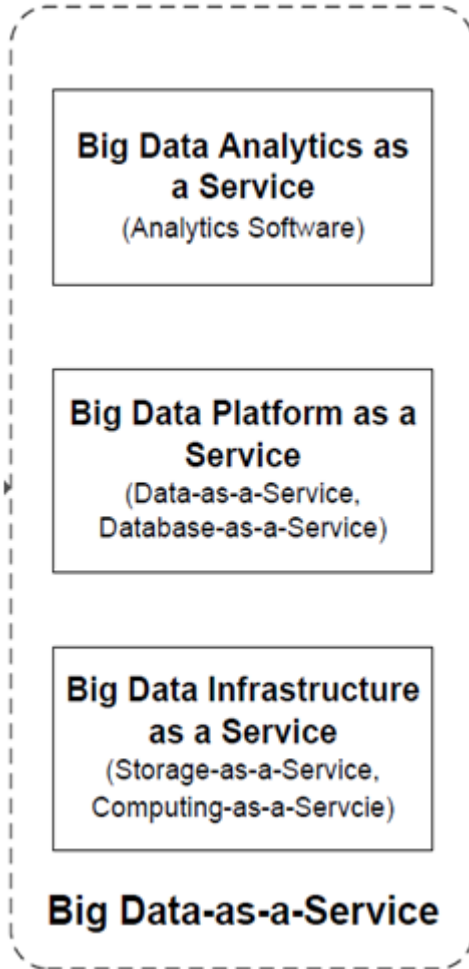
Summary
 Count: 182
 Measure Values
 Sum: 139,564,469
 Average: 830,741
 Minimum: 9,314
 Maximum: 5,257,806
 Median: 202,654

Caption
 CDR data statistics of different activities by activity hours. Total Number of Activity (Count), Call In Activity (Sum) and Call Out Activity (Sum), Internet Traffic Activity (Sum), SMS In Activity (Sum) and SMS Out Activity (Sum), Total Activity (Sum) = SUM (call in + call out + internet + sms in + sms out)
 Those stats are broken down by activity_start_Time Year vs. activity_hour.



- ▶ 800 Millions of CDR are collected daily from OCI IT & Service Platforms
- ▶ 150 To are used for OCI Big Data System

Combining Cloud and Big Data will allow enterprises (mainly Soho) and administrations to reach digital and data ecosystem



Orange Tier 4 Datacenter is a powerful enabler for IaaS requirements



Quelques unes de nos offres

- ✓ Service d'hébergement (colocation managée)
 - Hébergement de matériel informatique géré par l'opérateur ou le client B2B

- ✓ Service de location équipement et location d'espace
 - Hébergement avec location de matériel informatique

- ✓ Services managés (service personnalisé)
 - Infrastructure as a service(IaaS) , Service as a Service(SaaS) et services aux entreprises

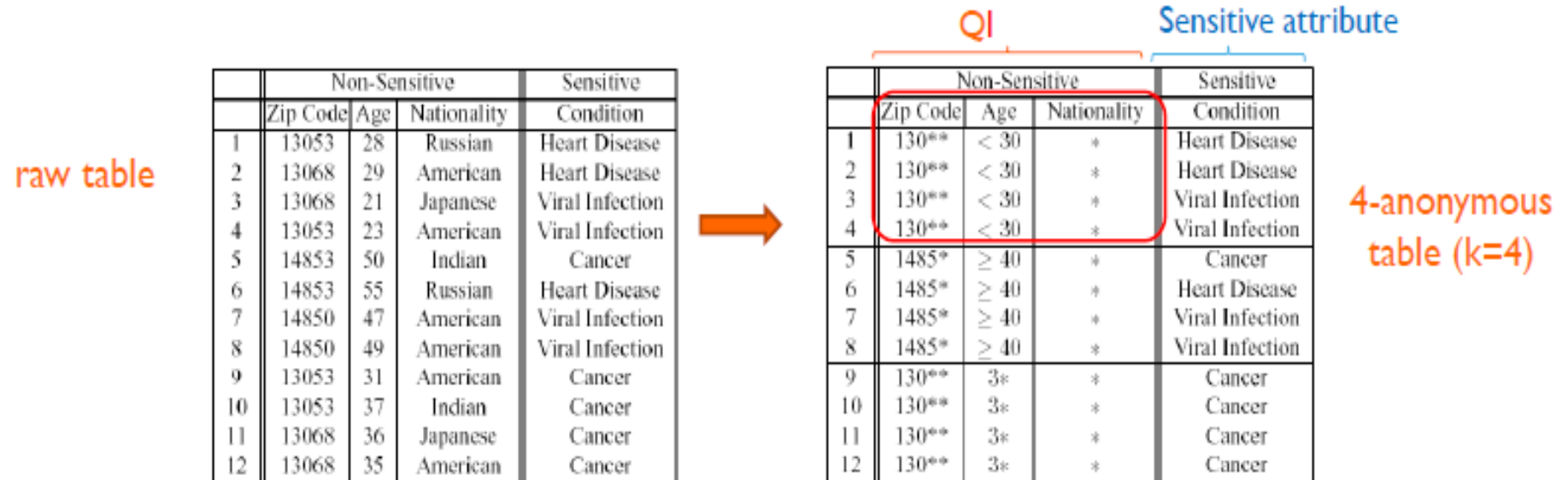
- ✓ Accompagnement
 - Gestes de proximité assurés par les équipes GOS
 - Portail Web / support Hotline
 - Possibilité d'intervention des personnels extérieurs

1^{er} Prix Datacenter d'Afrique _ Monaco 2017



Anonymization of data is a prerequisite for Big Data

Orange uses several models of anonymization



- ▶ Example of use (**k-anonymity**) : anonymization of medical data

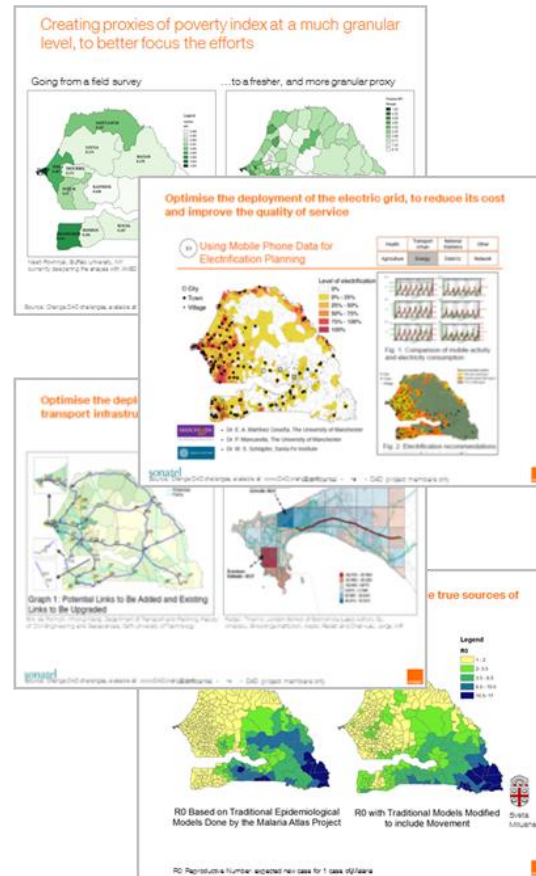
Using private data for society benefits has been demonstrated, and requires now robust DaaS solutions

Pioneering Challenges...



...and Ground breaking Research

Exciting results...



But still nascent solutions...

- Ad-hoc research for Development applications
- Unclear cost/benefits or business models
- Difficult to scale / sustain
- Complex governance
- Privacy risks vs Utility
- Regulation issues

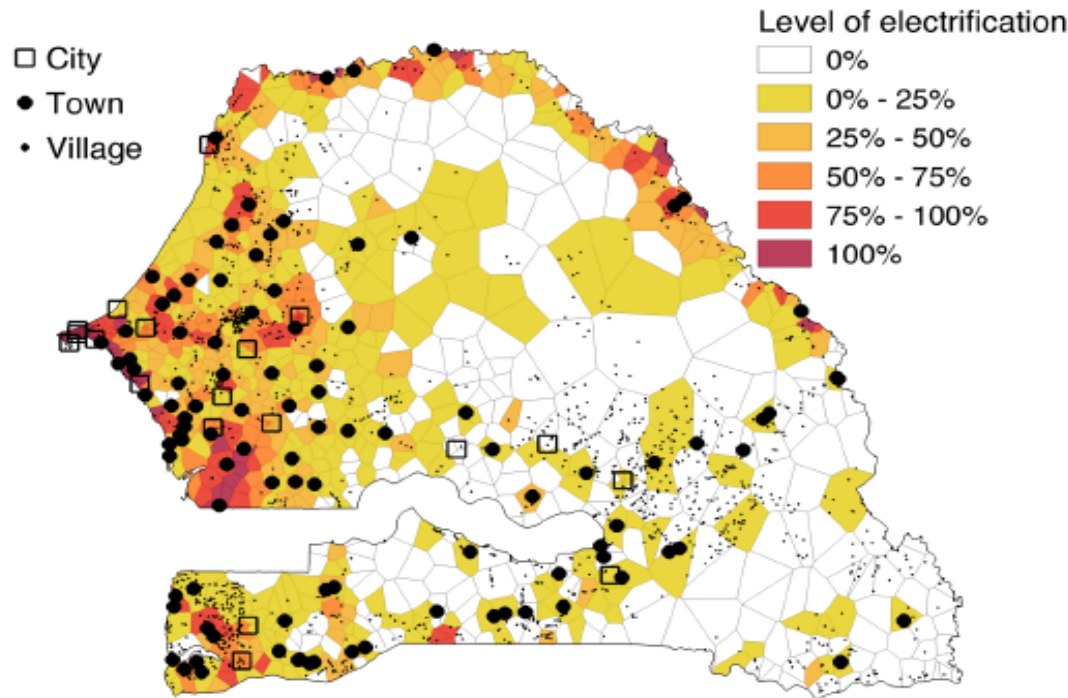


Smart Steps

Crossing Electric and Mobility data we can optimize the deployment of the electric grid and leverage renewables

E1 Using Mobile Phone Data for Electrification Planning

Health	Transport Urban	National Statistics	Other
Agriculture	Energy	DataViz	Network



Project Summary:

The dramatic increase of mobile phone use and the recent availability of the corresponding anonymized data offer unprecedented insights into human activity in Senegal. This new data can be extrapolated into valuable electricity needs, which are otherwise very scarce, particularly in rural areas.

An electrification framework based on mobile phone, electricity and geo-referenced data is developed to assess electrification throughout electricity grid extension, and installation of Diesel engine-based Microgrids and solar photovoltaic systems. The tool is used to meet all energy needs or just lighting and mobile phone charging.

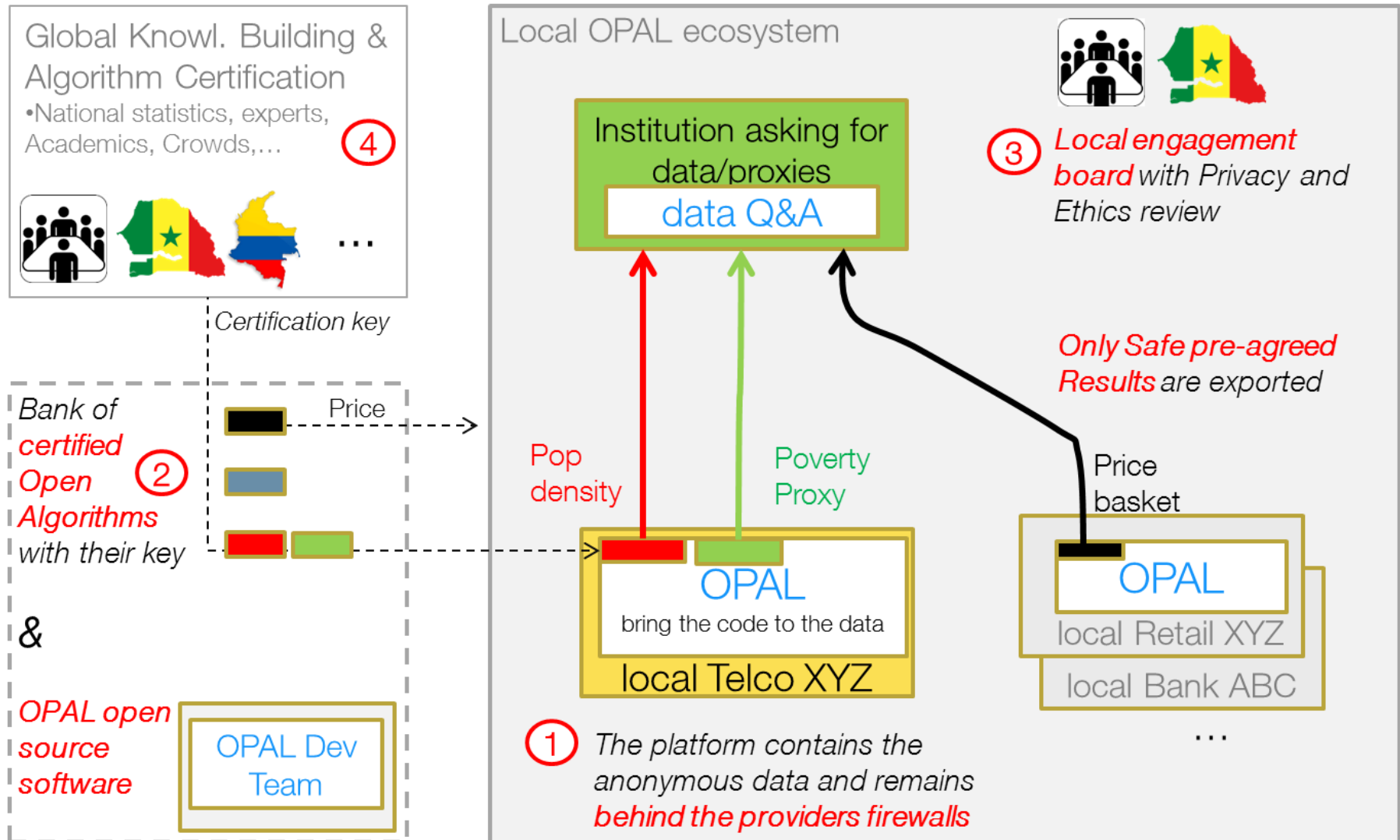
The mobile phone data can support efficient and economically attractive electrification plans for Senegal.

MANCHESTER
1824
The University of Manchester

- Dr. E. A. Martínez Ceseña, The University of Manchester
- Dr. P. Mancarella, The University of Manchester
- Dr. M. S. Schlöpfer, Santa Fe Institute

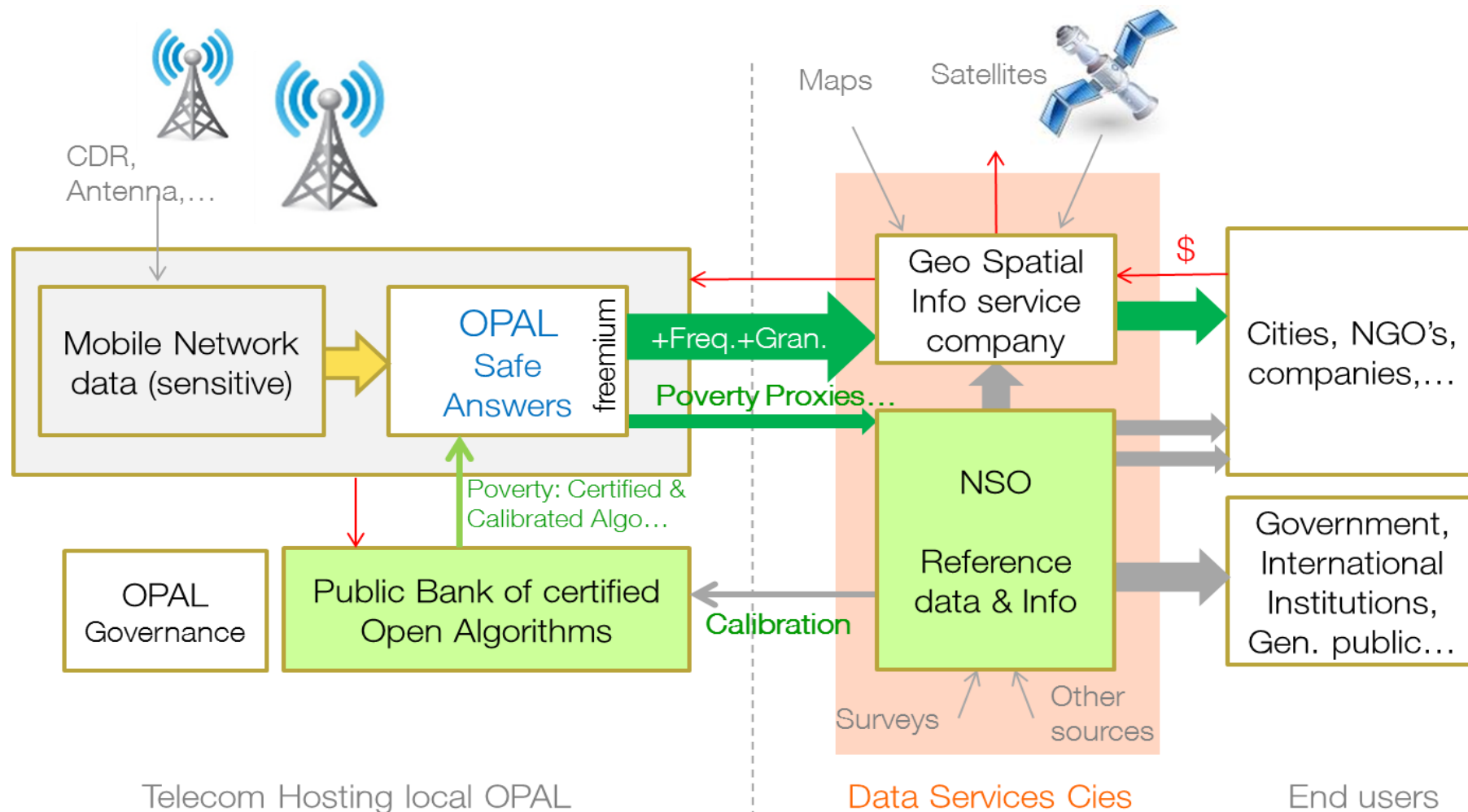


Local OPAL platforms (as PaaS) enable an institution to use Open Algorithms to get safe answers from private data (eg. Provided by telco)



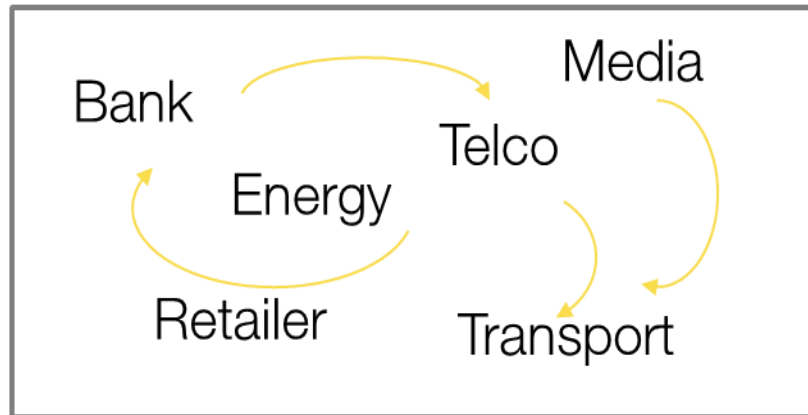
Use Case: Getting proxy data for a poverty index

OPAL could provide more frequent/granular proxies after calibration



A Freemium mechanism combined with a mix of revenue models should help secure both viability and innovation

...for Commercial/Private sector



...for Public services & development



Freemium Models (Volumes/Geography/time/segment)

broaden access to some data and foster innovation... but not destroying market value

Commercial revenue Model

ensure the overall portfolio is profitable for the whole ecosystem

- User pays for their usage

4 Public/Development revenue Model

- Users pay (= Commercial)
- 3rd Party pay (Donors, NGO's,...)
- Value Exchg, Tax Deduct, Label,...
- Data/Information Philanthropy

a ni tié

dakujem

شكرا

thank you

barka

misaotra

djiere dieuf

akpé

gracias

merci

matondi

շնորհակալ