

Building Inclusive Data Ecosystems – Data as an Asset

Dalberg
Data Insights

APRIL 2022

*We are a global group
working to build a more
inclusive and
sustainable world where
all people, everywhere,
can reach their fullest
potential.*

24

Locations

90+

Countries we've
worked in

60+

Nationalities of
staff

80+

Languages
spoken

3000+

Engagements globally

Dalberg



The Dalberg Group combines a large set of capabilities

At DDI, we build data ecosystems across geographies and sectors to tackle human, organizational, and technological challenges along three pillars

Dalberg Implement

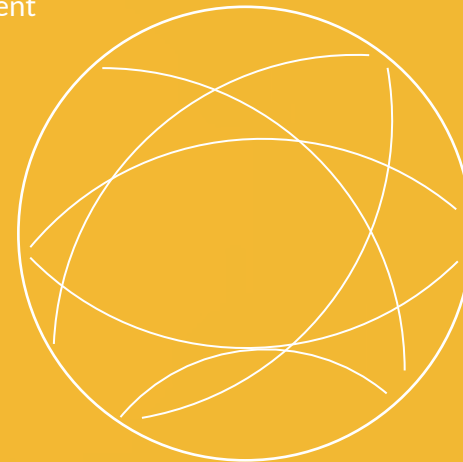
Dalberg Data Insights

Dalberg Research

Dalberg Design

Dalberg Catalyst

Dalberg Advisors



DDI has 7+ years of experience partnering with telcos across geographies under the **Data-as-a-Service** model to bridge the demand and supply gap for rich mobile data insights

Unique, targeted partnerships for data access

DDI's unique Data-as-a-service models allows it unparalleled access to telecom data, a result of a substantial vetting and approval process. The data is anonymized by the operator; thus, DDI never communicates any insights at the level of the subscriber; insights are always at the aggregate level



Diverse collaborators and champions for telecom data analytics

DDI works closely with private, public, and development champions of data to identify opportunities to leverage telecom data for impact, and continually develops relationships with key decision and policy makers who can apply the data insights to their policies and programs



Strong technical and strategic analytics skillset

Working with telecom data requires data analytics skillsets to apply the right software and algorithms to derive insights. DDI has a team of experienced data scientists, data engineers, and data consultants building high-functioning data products and implementation strategies

~20 data specialists

Deep experience in 10+ sectors

Across 15+ markets

What are the conditions for such partnerships to happen? – Focus on an ecosystem approach

DATA AS AN ASSET: Start with the data use cases, not the data

Identifying use cases that make sense for the end user and solve a real problem is more important than starting with the data itself

TRUST: Data Governance is Key

The governance through the whole data value chain, from identifying a use case to delivering a scalable and sustainable product is critical. We need clear roles and responsibilities

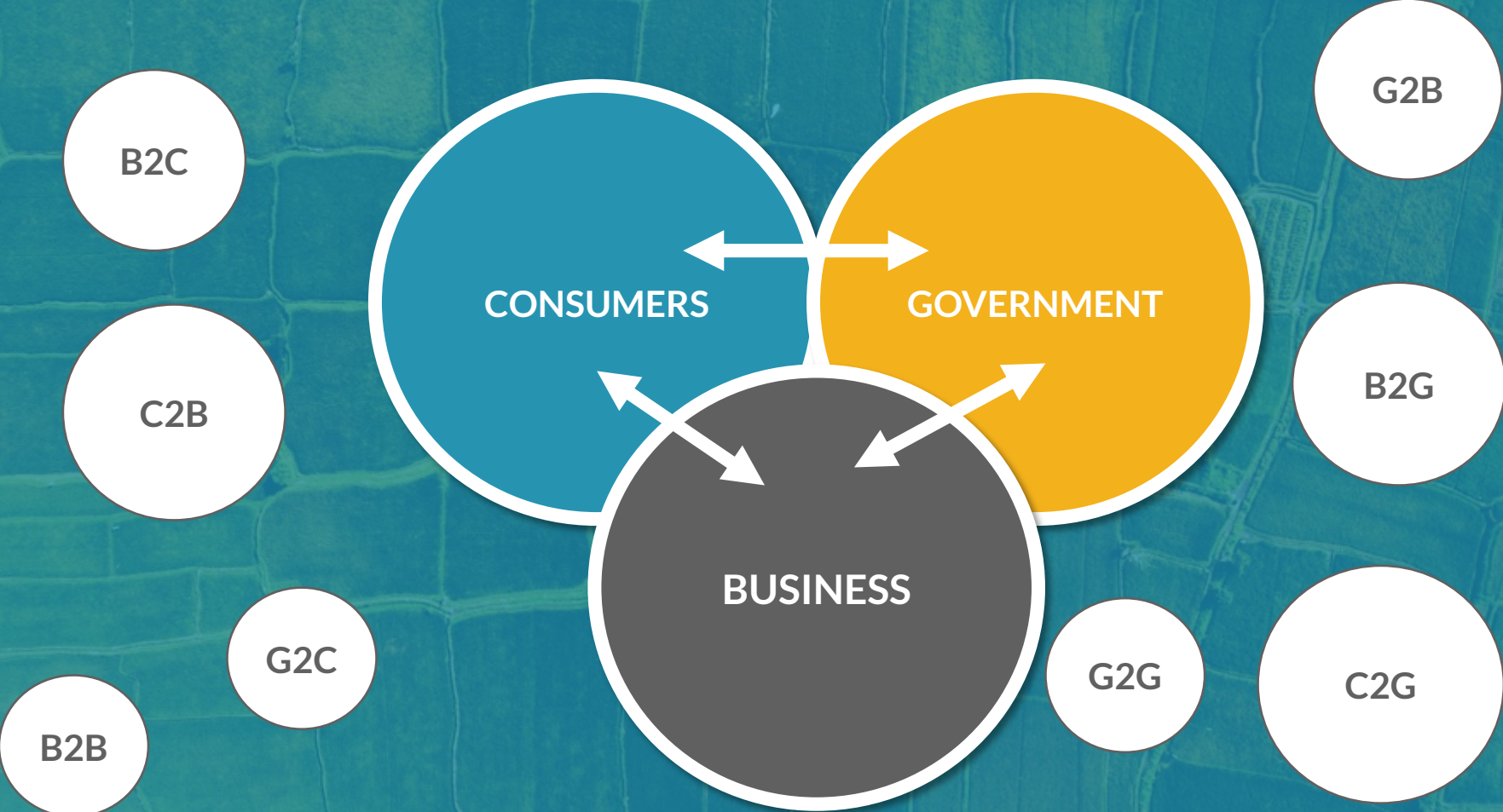


DATA LITERACY:

Foster a Data Community

Understand and align incentives of the different stakeholders in the community. Understand data literacy and empower everyone to fully grasp the potential of the data

THE PRIVATE & PUBLIC SECTORS MUST SEE DATA AS AN ASSET



*“New rules are allowing customers to effectively switch between different **cloud data-processing services** providers and put in place safeguards against unlawful data transfer.”*

The background of the slide features a stylized illustration of a library with rows of books on shelves. In the foreground, there are dark blue silhouettes of a man and a woman. The man is on the left, holding a large rectangular object that resembles a tablet or a book, and is looking at it. The woman is on the right, also looking down at something she is holding. The overall color scheme is monochromatic, using various shades of blue.

**INVEST IN DATA LITERACY FOR THE
PUBLIC & PRIVATE SECTORS &
INDIVIDUALS**

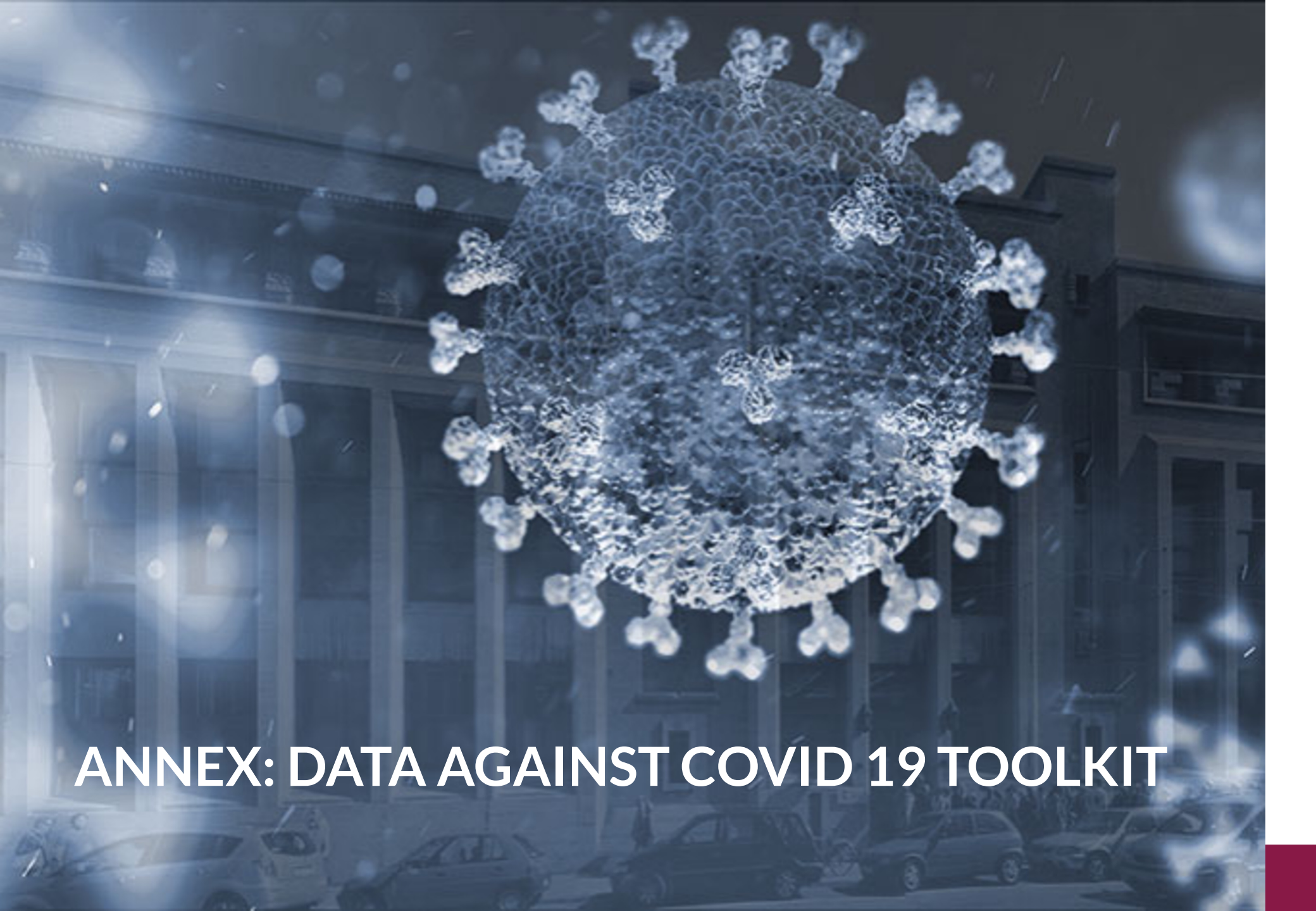
TRANSPARENCY AND TRUST WILL BE KEY



Thank you!

Rositsa Zaimova

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E: rositsa.zaimova@dalberg.com



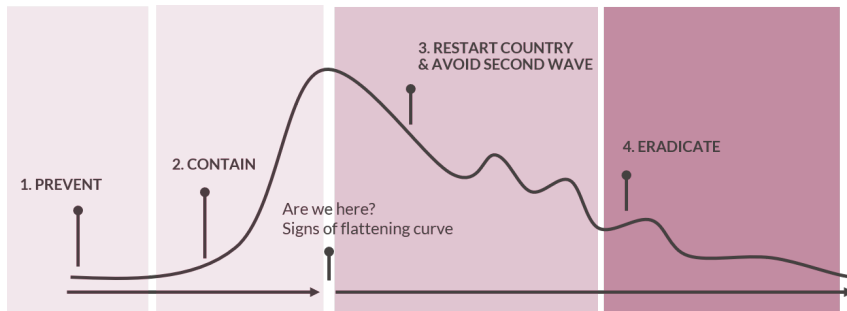
ANNEX: DATA AGAINST COVID 19 TOOLKIT

We leveraged MNO data to limit the spread of COV19 in Belgium

THE CHALLENGE:

Little is known about mobility patterns of people and reliable systematic insights regarding people's travel are not available for health surveillance and intervention planning.

Adapt the strategy and the tools to each phase of the pandemic



THE SOLUTION :

A toolkit that brings data insights for each phase; covering 4 sets of use case

3 Modules

Governance: Relations with the MNOs, mandate from the government and ethics committee

Technology and data: State-of-art predictive algorithms and data visualizations

Regulatory: regulatory frameworks

Data-Against-COVID19 toolkit

3 sets of use cases

M Quantify and optimize the **mobility measures**
– A dynamic and granular view

H Refine the **health risk**, e.g. propagation maps, targeted alerts – A dynamic and granular view

A Identify mobility **anomalies**, e.g. informal gatherings, superspreaders

THE TECHNICAL TOOLS:

List of use cases

- UC1** **Mobility reduction:** KPIs on the evolution of human mobility to assess whether measures are bearing fruit + direct resources to problem areas
- UC2** **Propagation maps:** predict where the disease will spread based on near-real time population mobility using epidemiology model
- UC3** **High Risk Situations (HRSs)/Event anomaly:** detect areas that have an unusual concentration of people (e.g. unauthorized gathering > 30people) or an unusual spike in calls to emergency numbers
- UC4** **Region at risk:** develop a risk mapping of the country based on epidemiological models, socio-demographics, mobility patterns. Develop scenarios for exiting the confinement

Three key modules were critical for the implementation of the Data Against COVID19 toolkit



1. GOVERNANCE MODULE 2. REGULATORY MODULE 3. TECHNICAL MODULE

Activities

- ✓ Ministry of Health's Mandate
- ✓ Consortium, taskforce, ethics committee set up

- ✓ Signed NDA between Dalberg and the three national telecom operators
- ✓ Telecom and Health data access
- ✓ DPIA Version 1

- ✓ Use Cases Definition
- ✓ Phase 1 Dashboards

Results:



Fig.1: Consortium



Fig.2: Ethics Committee & DPIA

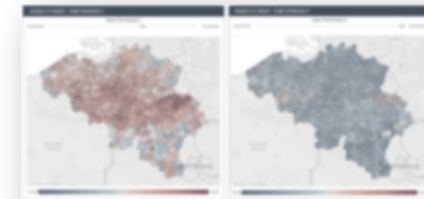


Fig.3: Mobility Index Dashboard: Mobility before and after lockdown per day and per zipcode - Illustrative example: Results under NDA

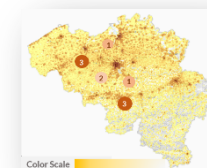
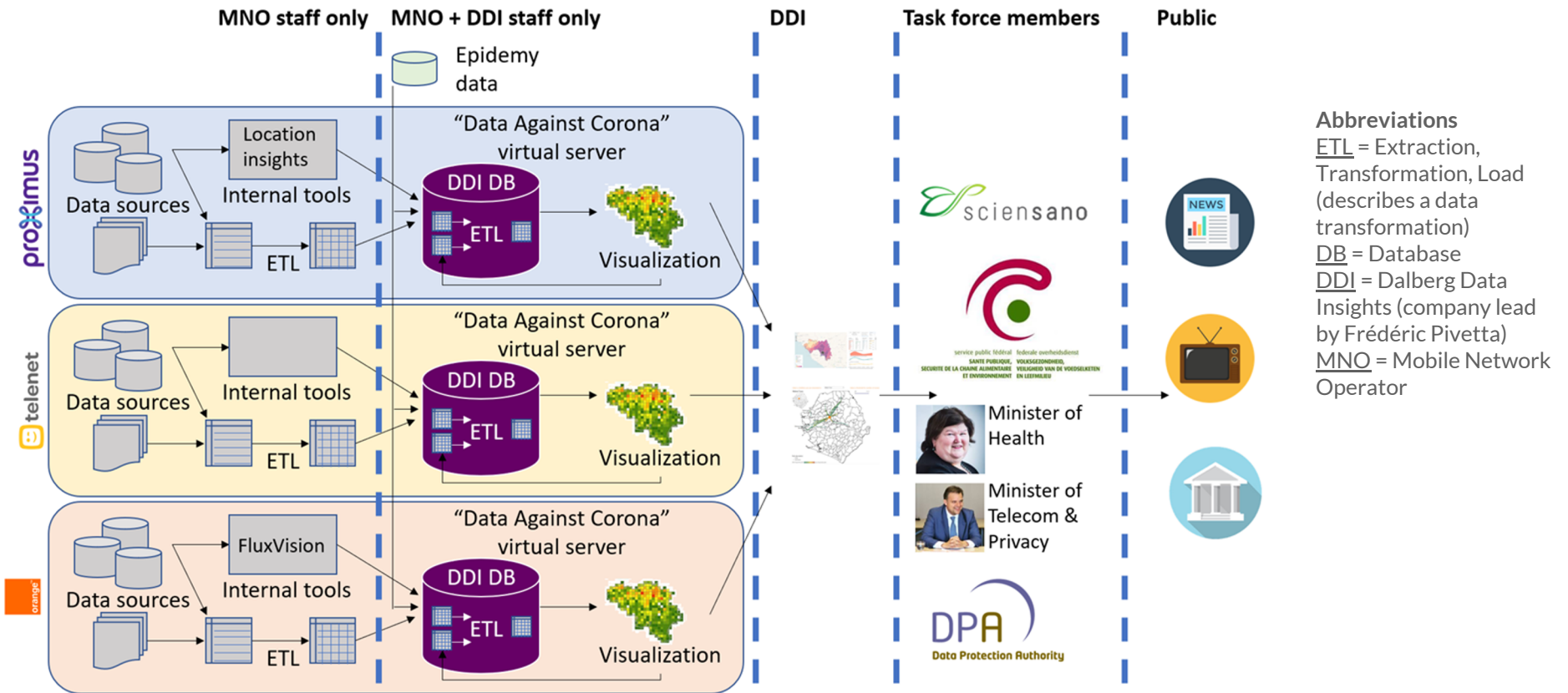


Fig.4: Incidence Index Dashboard- Disease over time - Illustrative example: Results under NDA

How do we interact with telecom operators in Belgium?

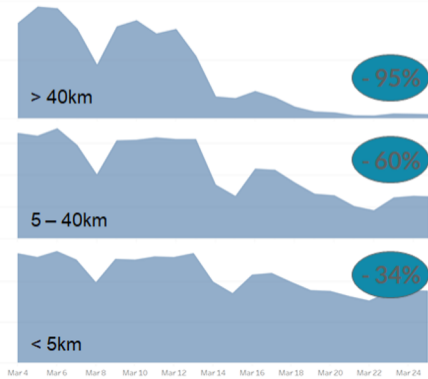


Abbreviations
ETL = Extraction, Transformation, Load (describes a data transformation)
DB = Database
DDI = Dalberg Data Insights (company lead by Frédéric Pivetta)
MNO = Mobile Network Operator

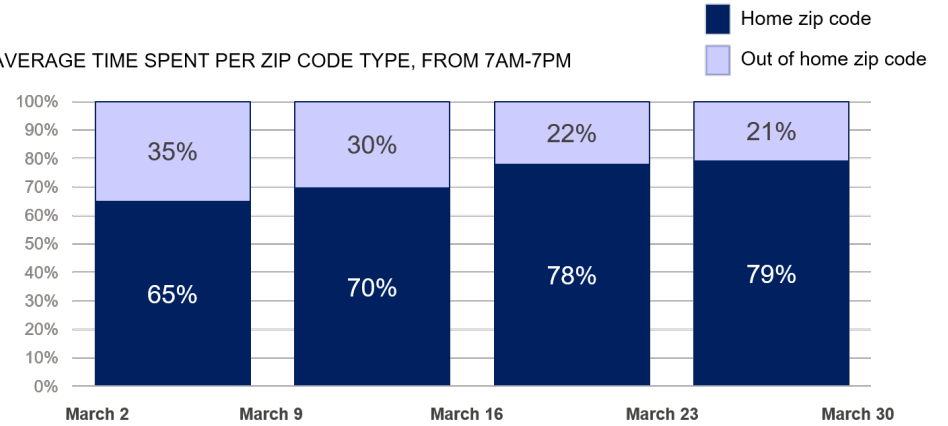
Contain Phase: Mobility Reduction (2/2)

The model analyses **different mobility variables** to understand the different dynamics over time

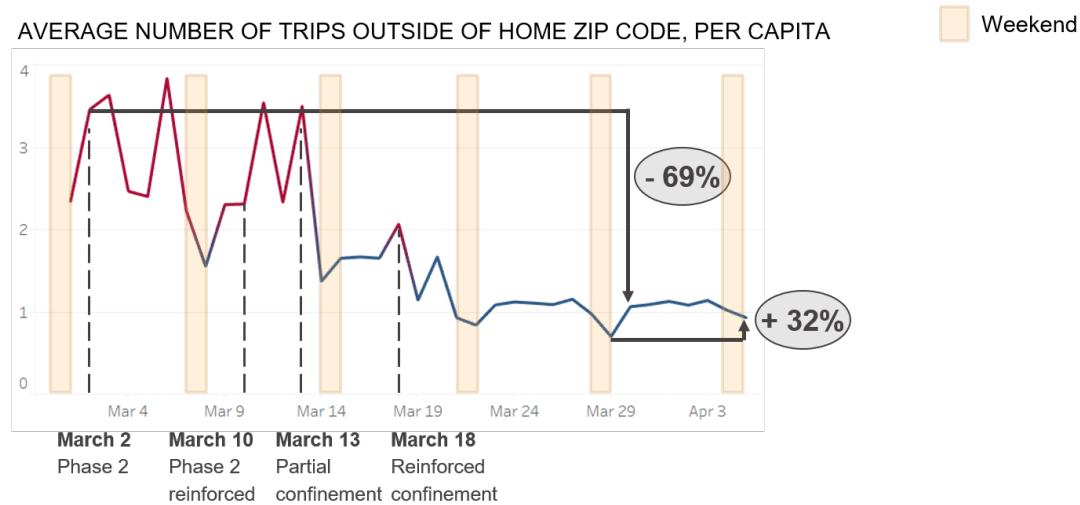
EVOLUTION OF NUMBER OF TRIPS BETWEEN MAR 4th AND MAR 25th, PER DISTANCE



AVERAGE TIME SPENT PER ZIP CODE TYPE, FROM 7AM-7PM



AVERAGE NUMBER OF TRIPS OUTSIDE OF HOME ZIP CODE, PER CAPITA



Ethical principles we follow

- We have set-up an Ethics Committee in Belgium, a group of researchers independent to the crisis response team, who are responsible for guiding the crisis response teams on the ethical principles related to data use
- We do not work without proper authorizations (from government & data protection authority)
- We do not process non-anonymized data
- We do not mix individual location data and individual epidemiological data
- We do not publish non-aggregated outputs
- We do not give data access to members outside of the task force