Space for Hope

Fighting COVID-19 with impact data
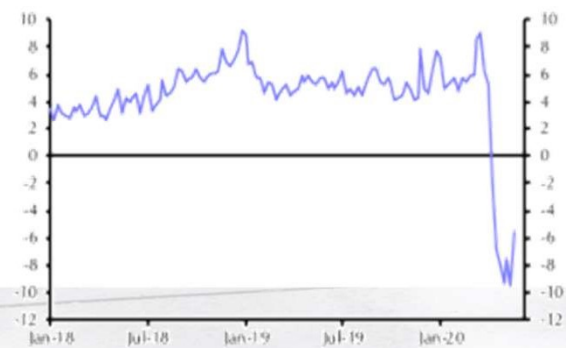
NASA Spaceapss Challenge
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31st May 2020

Context

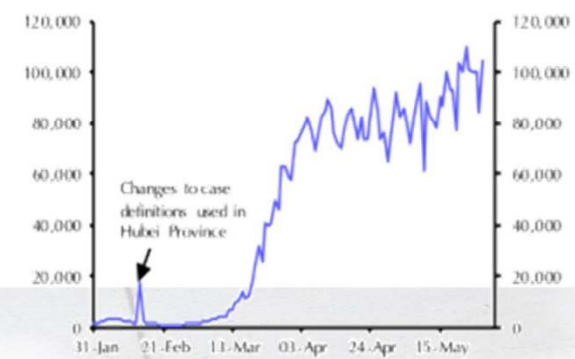## GDP FORECASTS

	Q1	Q2	Q3	Q4	2020	Pre-virus	Difference	2021
		%yy				%yy	pps	%yy
US	-1.2	-11.5	4.6	5.5	-0.6	2.0	-2.5	7.0
EZ	-3.8	-20.0	12.0	5.5	-12.0	0.7	-12.7	10.0
Germany	-2.2	-11.0	4.0	3.0	-6.0	0.2	-6.2	4.5
France	-5.8	-20.0	21.7	7.2	-10.0	0.8	-10.8	7.5
Italy	-4.7	-29.0	9.0	7.5	-18.0	0.2	-18.2	19.0
Spain	-5.2	-28.5	24.5	7.5	-18.0	1.5	-16.5	10.0
Japan	-0.9	-12.0	7.2	2.9	-7.0	-0.2	-6.8	5.0
UK	-2.0	-28.0	18.0	4.5	-12.0	1.0	-13.0	10.0
Canada	-2.7	-14.0	6.7	3.7	-8.4	1.7	-10.1	5.7
Australia	-1.0	-12.0	7.0	3.0	-5.5	2.0	-7.5	7.0
Brazil	-0.5	-10.0	3.0	2.5	-3.5	1.5	-2.0	2.5
Mexico	-1.6	-12.5	5.0	4.0	-8.0	0.3	-8.3	5.0
Russia	-0.1	-13.8	6.5	5.0	-6.0	1.9	-7.9	4.5
Turkey	-3.0	-16.5	9.0	6.5	-8.5	4.3	-12.0	8.0
China (CAP)	0.5	13.5	2.9	3.5	5.0	5.0	0.0	15.0
India	4.0	4.5	11.0	3.0	4.0	4.7	-0.7	5.0
Korea	0.6	6.0	5.6	1.7	-2.0	2.0	-5.5	6.0
World	0.7	-7.0	7.0	3.8	0.0	2.9	-8.0	6.7

US SAME-STORE RETAIL SALES (% Y/Y)

GLOBAL NEW DAILY INFECTIONS

Changes to case definitions used in Hubei Province

Key Figures

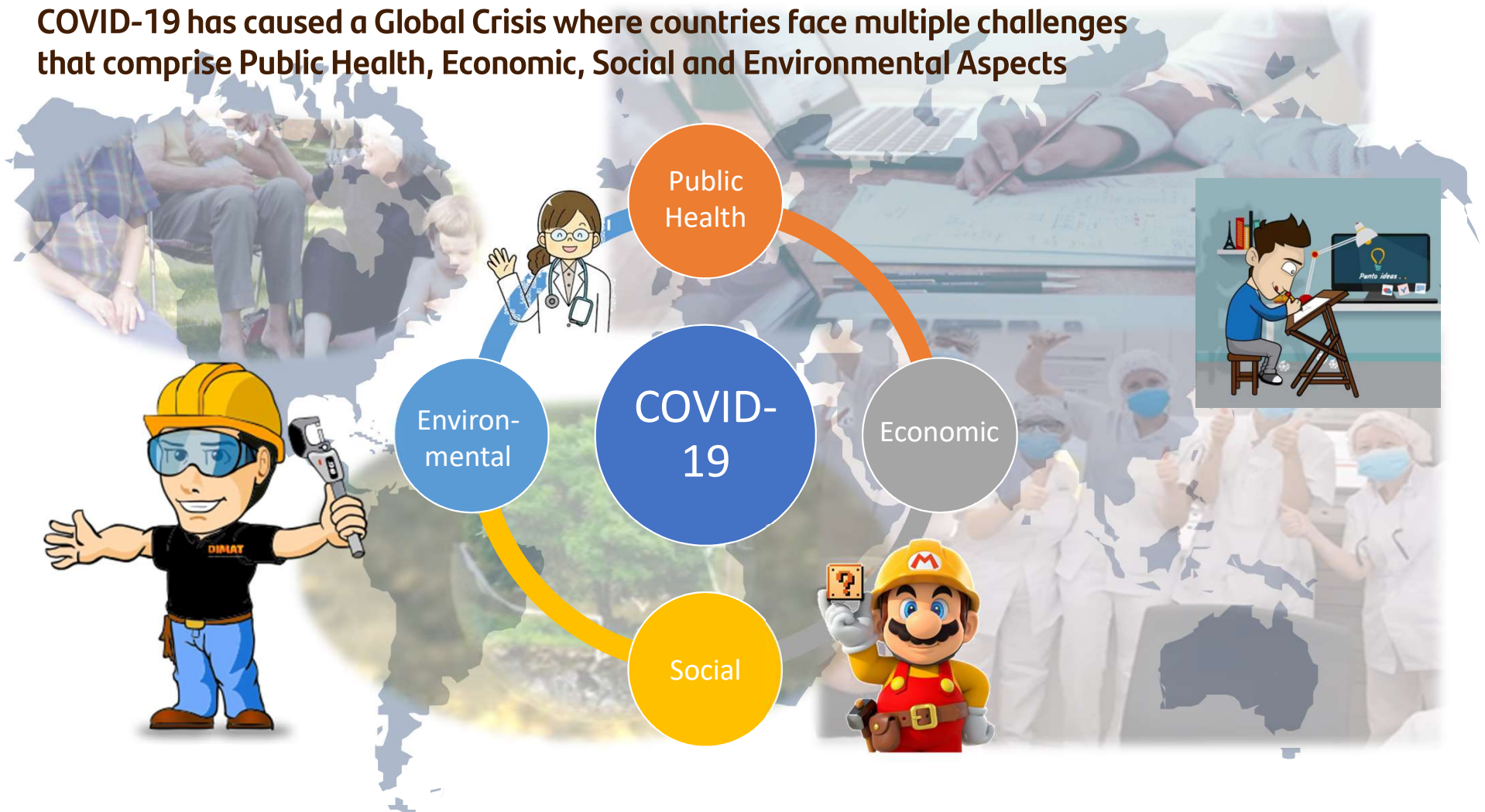**5,776,934** **Total Cases**

360,089 **Total Deaths**
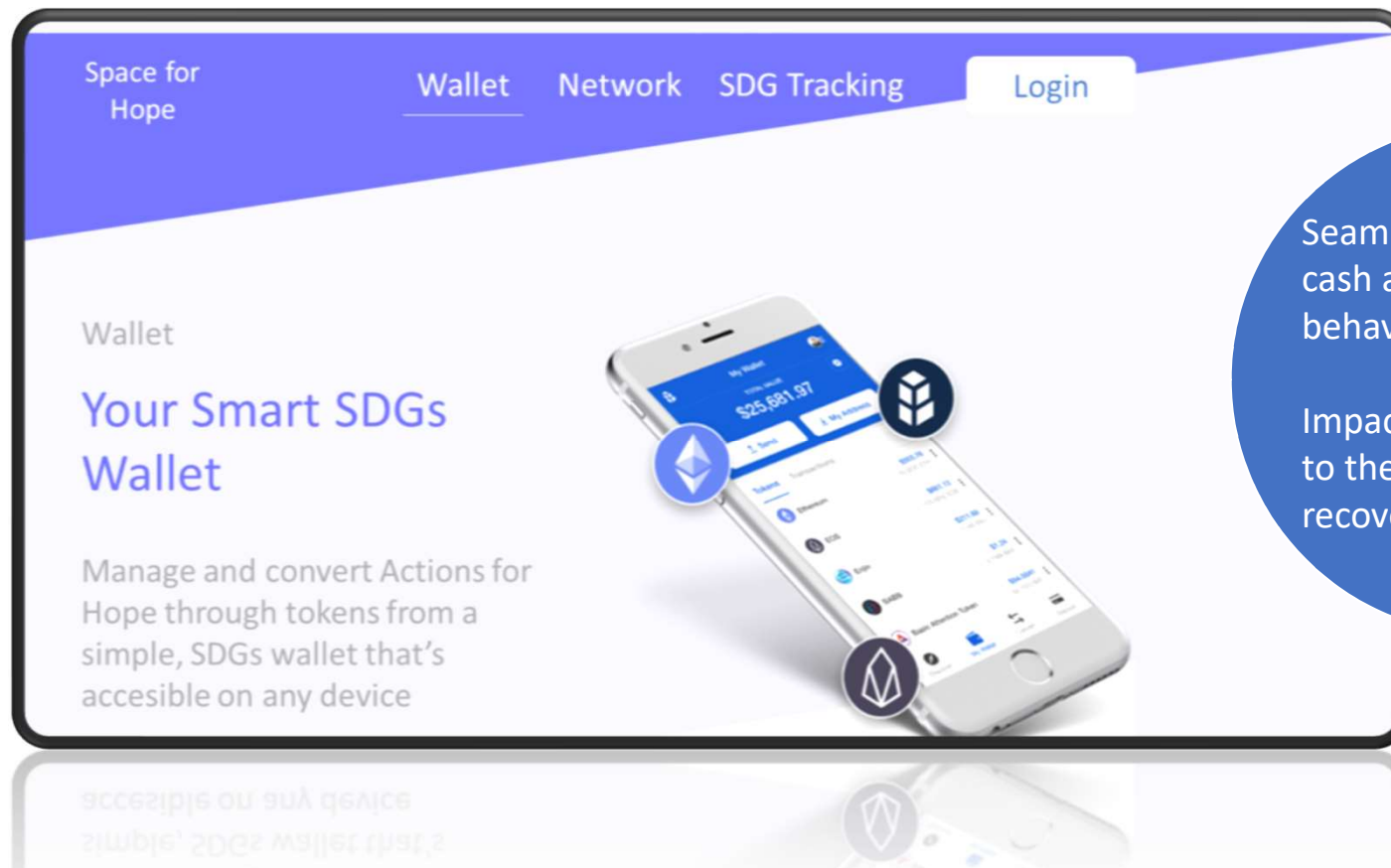
119,182 **Newly Infected**

The Problem

COVID-19 has caused a Global Crisis where countries face multiple challenges that comprise Public Health, Economic, Social and Environmental Aspects

Public Health

COVID-19

Economic

Environ-mental

Social

The Solution

Say Hello! to Space for Hope. Our goal is to accelerate post-COVID 19 recovery through Social Impact Economy

Seamless conversión of cash and sustainable behavior to Benefits.

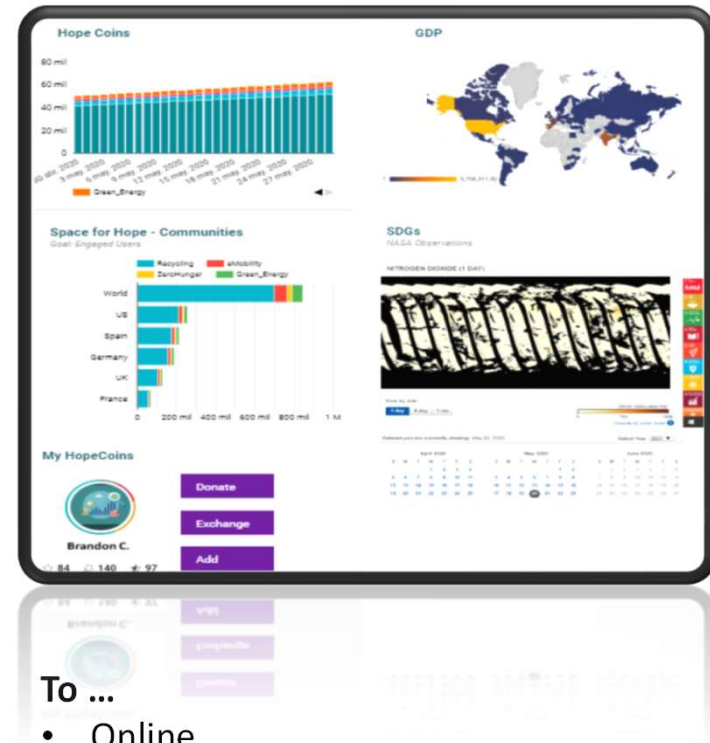Impact data is **essential** to the COVID-19 recovery path

Evolution vs. Revolution

From …
- Multiple Volunteer non-rewarded initiatives
- Scientific papers
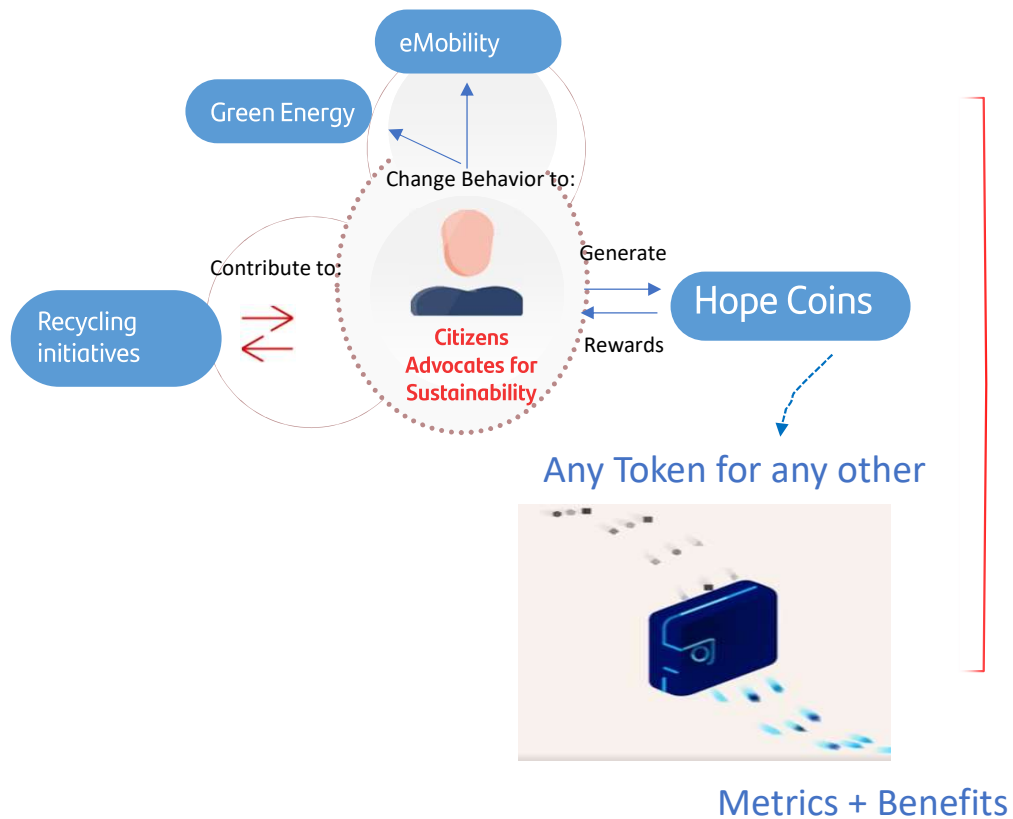- Reduced scope ('000 people and local implementation)

To …
- Online
- Global reach: 4 billion People Connected
- Recognized efforts effectively driven where really needed
- Extract the value of Data to be part of the Solution for this Pandemia

The Solution

How It Works?

eMobility

Green Energy

Change Behavior to:

Contribute to:

Generate

Rewards

Citizens
Advocates for
Sustainability

Recycling
initiatives

Hope Coins

Any Token for any other

Metrics + Benefits

Global Dashboard => General public, local managers and Public
agencies, civil society organizations, and local communities

COVID-19
Impact

Total Hope
Coin Impact

Economic
Impact

SDG Impact

Hope Coins

GDP

Space for Hope - Communities
Goal: Engaged Users

Recycling   eMobility
ZeroHunger   Green_Energy

World
US
Spain
Germany
UK
France

SDGs

My HopeCoins

Donate

Exchange

Add

Brandon C.

Cash/ Share Hope Coins to
help others and challenge
your mates

Our Methodology

Modelling Uncertainty Quantification (COVID-19)

S(t), number of individuals on t
Q(t), number of people in lockdown
L(t), latent individuals on t
I(t), infectious individuals on t
H(t), people at hospital on t
U(t), critical or serious cases on t
HU(t) critical patients that turns non-critical but remain in hospital on t
R(t), recovered individuals on t
F(t), cummulative deaths on t
β, δ, τ, γ1, γ2, γ3, α1, α2, α3, η, d1 y d2 are model parameters that determine transition of individuals between infectious states

$$S(t+1) = S(t) - \beta_t S(t) \frac{I(t)}{n_T},$$
$$I(t+1) = I(t) + \beta_t S(t) \frac{I(t)}{n_T} - \gamma I(t),$$
$$R(t+1) = R(t) + \gamma I(t),$$

Loyalty Program Liabilities (LP) and Point Values (Hope Coins)

- We consider a Time-frame of T + 1 periods, indexed by t ∈ $\{1, …, T+1\}$; a period corresponds to a fiscal period with T→ ∞
- Citizens aquire tokens by purchasing in cash or reediming actions towards sustainability (bike miles, recycling plastic caps, …)
- An equivalency between tokens q_t and monetary value p_t is established: $\theta t = pt/qt$ (θt =0,196€)
- Tokens are awarded at a fixed rate (λ)

new tokens

$$w_{t+1} = w_t + \lambda\, p_t\, s_t - q_t\, r_t.$$

Balance$_{t+1}$ Current Balance Redemption of tokens on the account

SDGs Indicators

1. Mortality rate attributed to household and ambient air pollution
2. Proportion of population with access to electricity
3. Direct disaster economic loss in relation to the global GDP

Data Sources

Our frameworks connects People, Data and Social Impact

+4
BILLION
people

UNITED NATIONS &
GOVERNNANCE
BODIES

Space for Hope

total_cases
5.776.934

new_cases
119.182

total_deaths
360,1 mil

Hope Coins   GDP

- Measure impact
- Reactivate the Economy
- Financial Inclusion
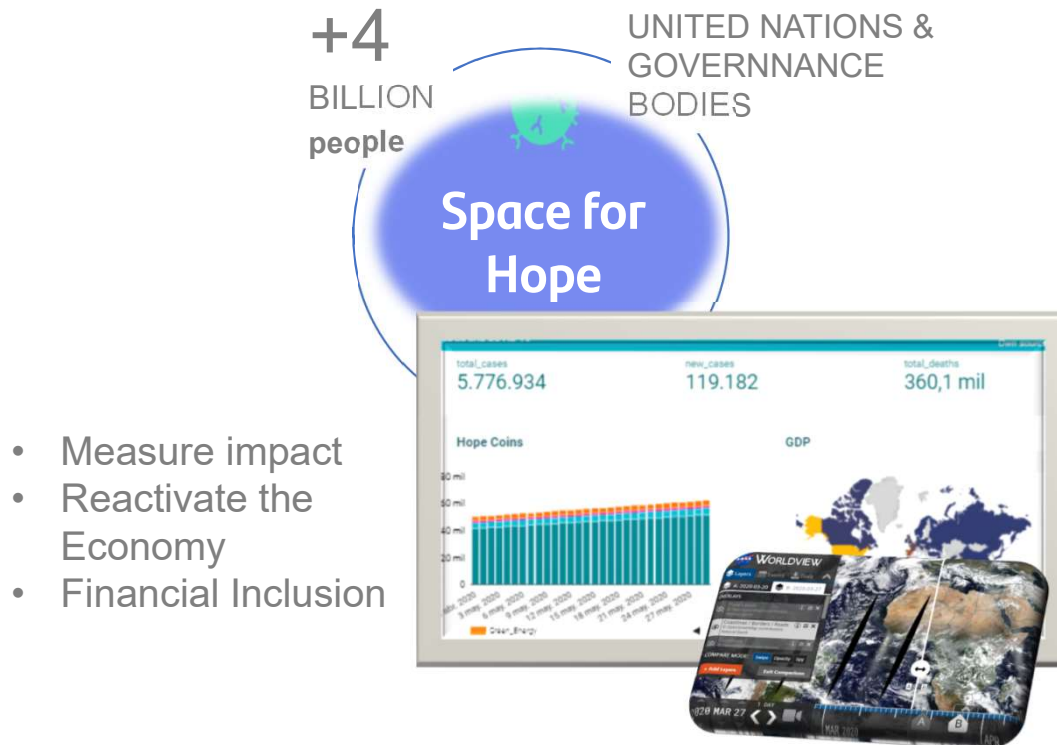
Top Priorities

1. **Further validation** of the model & testing it with existing datasets

2. Identify further **collaboration/engage** with partners and Public Agencies

3. Establish **community** of "advocates for **Sustainability"**

What can our idea do for people, the World and beyond?

Contribute to decelerate the infection curve and mortality rates of COVID-19

Find alternatives to Meet the SDG Targets

Reap Productivity and build a Social Impact New Economy

Next Steps:

- Funding
- Pilot Launch (F&F)
- Roll-out strategy in selected countries

50k€   Project Team: 4-6

Estimated ROI

4 BILLION

people with access to social impact indicators

2,5%

acceleration of the economic recovery