



# ITS Technology & Innovation Unit/Lab Overview

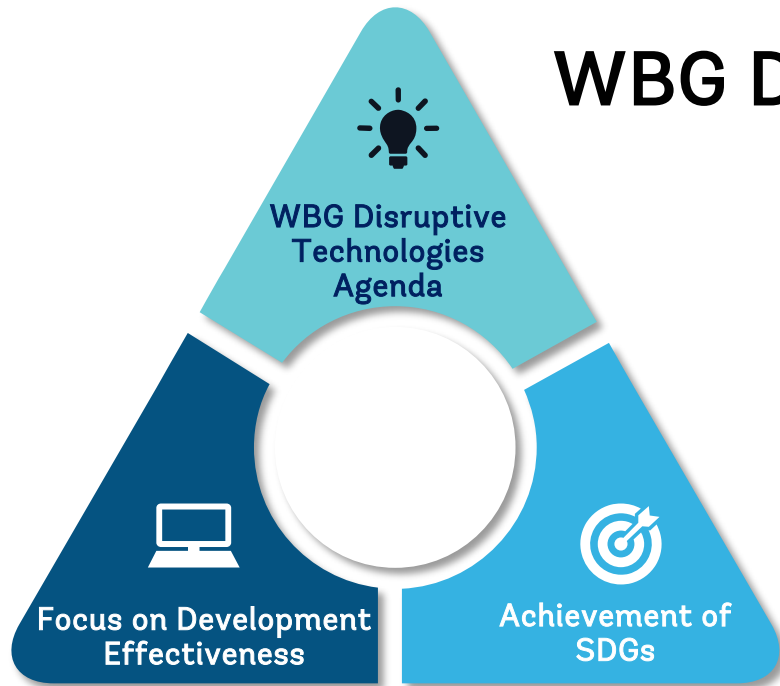
# Outline

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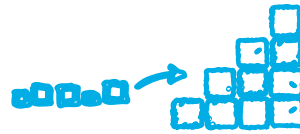
- Setting the context: WBG DTs Agenda and ITS's Contribution
- ITS Technology & Innovation Unit/Lab's (ITSTI) Mandate
- ITSTI's Contribution: WBG Disruptive Technologies Agenda
- Example of our project -Lets See What We Do!
- Results based Financing for Health- GHNP
- ITSTI's Contribution: Operationalization of Emerging Technologies
- ITSTI's Areas of Exploration
- Sharing TTL's Experience
- Projects Related To Smart Cities
- ITSTI Projects
- Fundamentals of Disruptive Technology Learning Program



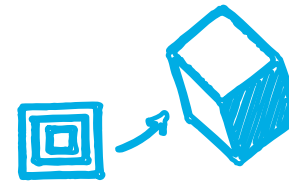
# WBG Disruptive Technologies (DTs) Agenda



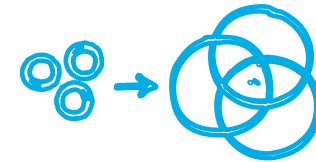
**Build:** Develop the foundational building blocks for sustainable, technology-led economies



**Boost:** Expand the capacity of people and institutions to thrive in a resilient society in the face of disruption



**Broker:** Harness disruptive technology, data, and expertise to solve development challenges and manage risks



## WBG Disruptive Technologies Agenda

To support its vision and stay competitive in the market, the WBG is pushing a unified Disruptive Technologies agenda.

## Focus on Technology Effectiveness

Now more than ever, technology can address and solve development challenges and problems more effectively.

## Achievement of SDGs

Look at emerging technologies to accelerate progress towards Sustainable Development Goals' achievement while managing risks.

Link to [Medium Article](#)



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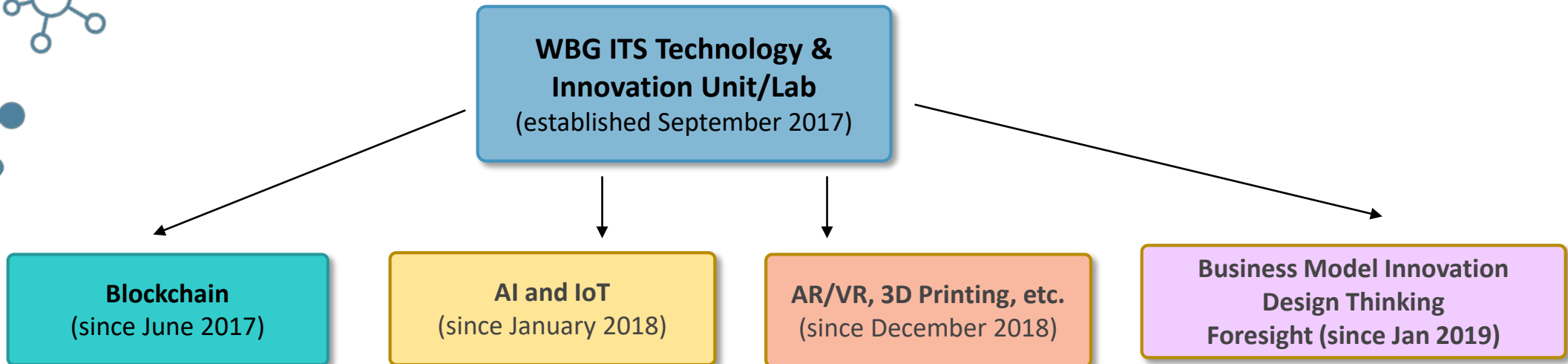


# ITS Technology & Innovation Unit/Lab's Mandate



Learning platform. Exploration space.  
Technology advice around Emerging Technologies.

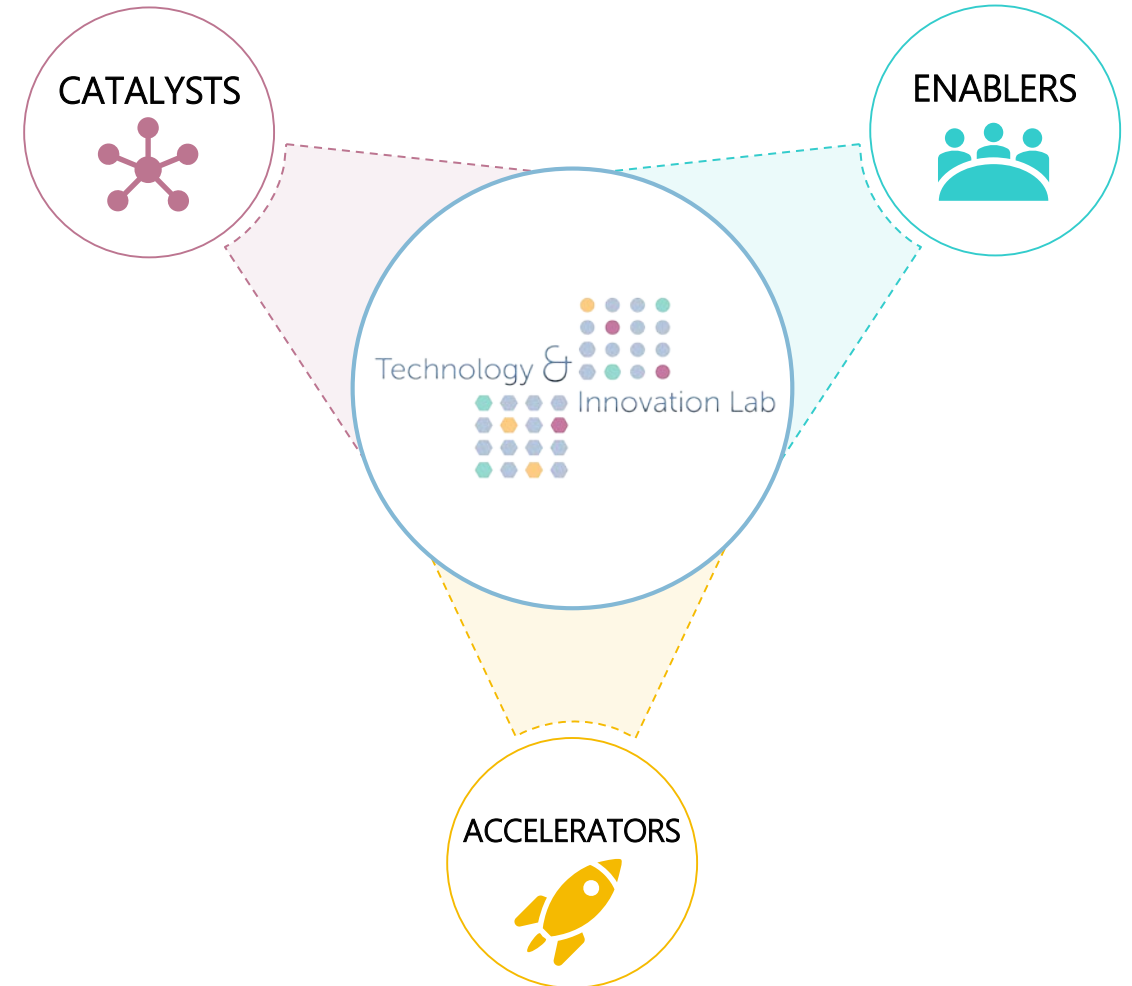
We **EXPLORE, TEST, UNDERSTAND** and **CREATE INTERNAL KNOW-HOW** about new technology capabilities that will enable the WBG to be **FUTURE READY** and **competitive in the digital age**.



# ITSTI's Contribution: WBG Disruptive Technologies Agenda

We engage and collaborate with our ITS community and our WBG clients on exploring, understanding, and experimenting with emerging technologies.

- We conduct rapid **proof of values** and **prototyping** to test new capabilities and expedite learning and understanding of the applicability of emerging technologies.
- We provide **technology advice**, **hands-on experience** and **learning by doing**, and a lab environment for the WBG stakeholders to test the potential of emerging technologies.
- We serve as an **internal technology advisor** and **knowledge hub** around emerging technologies to the WBG community.



# Lets See What We Do!



# Results based Financing for Health- GHNP

## BACKGROUND

Results-Based Financing (RBF) has been defined by the World Bank as “any program that rewards the delivery of one or more outputs or outcomes by one or more incentives, financial or otherwise, after the results have been verified. The objective of this prototype is to demonstrate that blockchain can effectively bring **traceability, transparency, and near real-time data** to results-based financing programs, **improve on delivery and tracking efficiency, reduce RBF program complexity, and improve sustainability.**

## THE CHALLENGE :

The verification process for results-based financing of health services can **be time-consuming and costly** ( sometimes consuming as much as **25% of project costs**). We are exploring how blockchain can be used to track whether a service was provided, providing a **seamless, integrated record for patients, service providers and results-based financing program administrators.**

## EXPECTED BUSINESS OUTCOME :

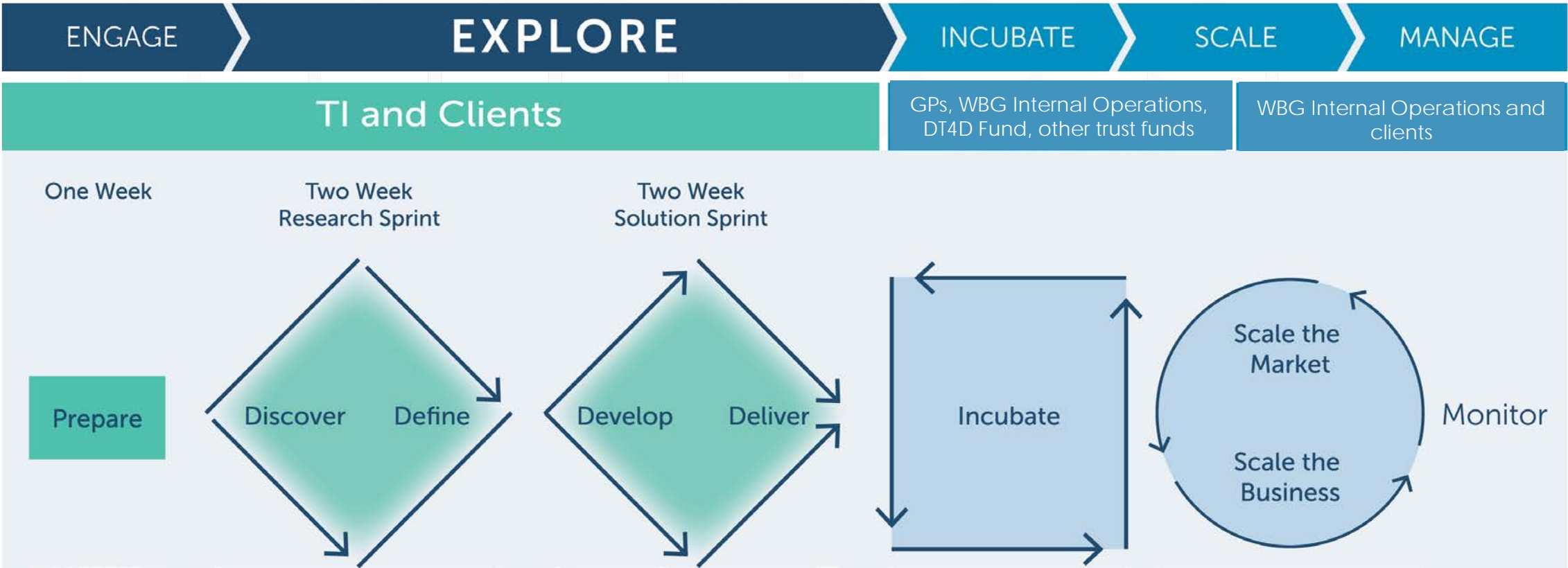
**A Proof of Concept (lab prototype) that will be piloted/ integrated into on-ground projects in Cote D'Ivoire, Lesotho & Zambia includes-**

- Architecture of the end-to-end systems required to achieve the solution(s).
- Recommendations for additional complementary technologies to support data verification and authenticity through technologies such as Biometric scanners, IoT to support data verification and authenticity.
- Screenshots of UI / UX for various actors in the value chain.
- Integration with OpenMRS health systems that are already operational in many developing countries
- Lab prototype or simulation of the entire solution





# ITSTI's Contribution: Operationalization of Emerging Technologies





# Sharing TTL's Experience



# ITSTI's Areas of Exploration

## Sectors

- Education
- Health
- Climate
- Agriculture
- Energy & Mining
- Land
- Insurance
- Financial Inclusion

## Themes

- Supply Chain Innovation
- Financial Inclusion
- Tokenization 4 Development
- Results Based Financing
- Identity 4 Development
- Business Model Innovation
- Digital Transformation
- Operational Efficiency

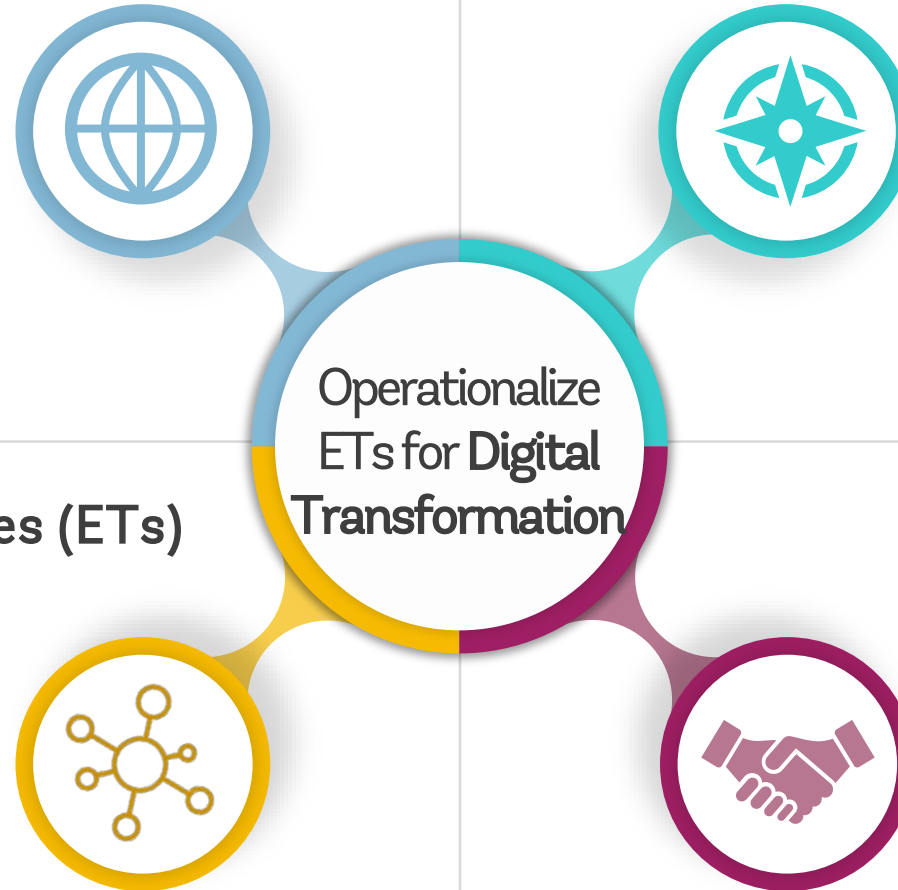
## Emerging Technologies (ETs)

- ▲ Blockchain
- ▲ Artificial Intelligence
- ▲ Internet of Things
- ▲ AR/VR
- ▲ 3D Printing

Operationalize  
ETs for Digital  
Transformation

## Our Clients

- ◆ WBG Global Practices
- ◆ Internal Operations

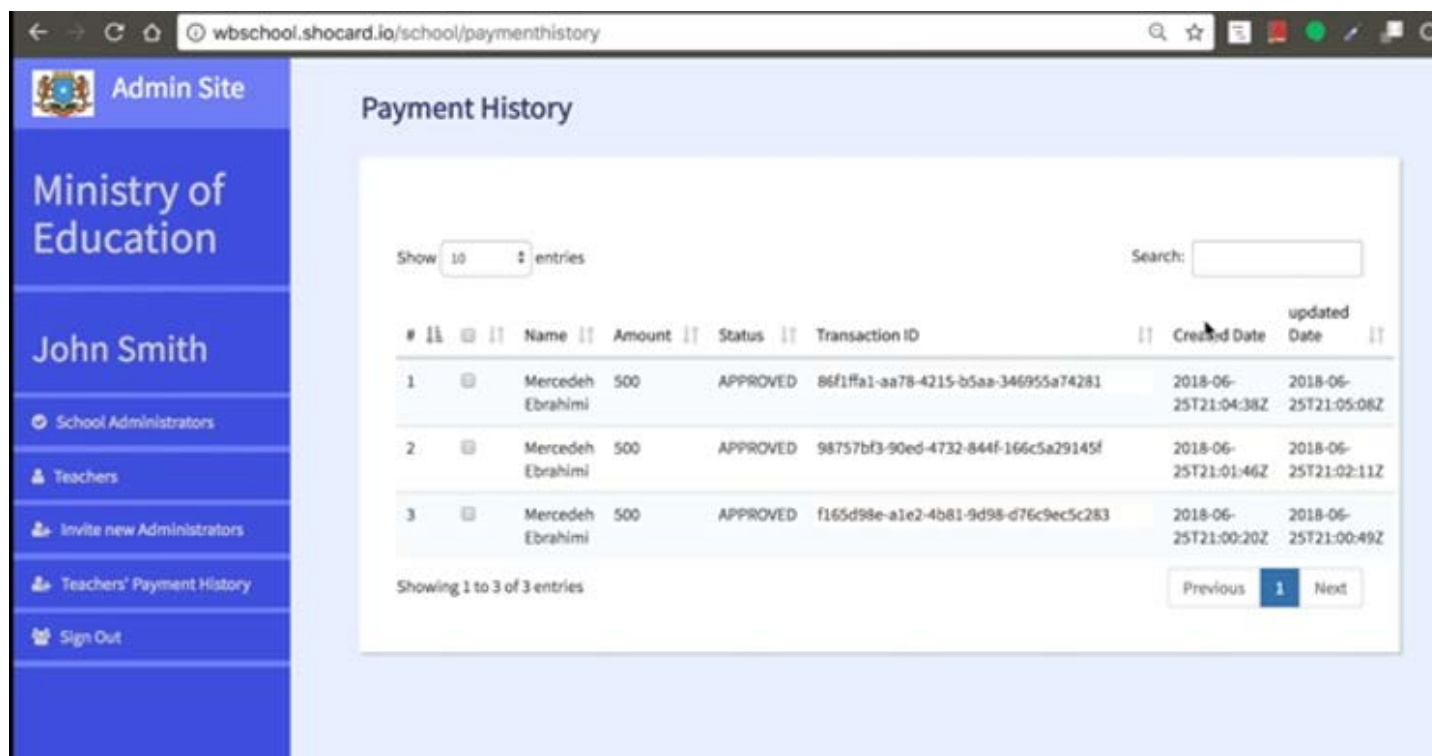


# Projects Related To Smart Cities



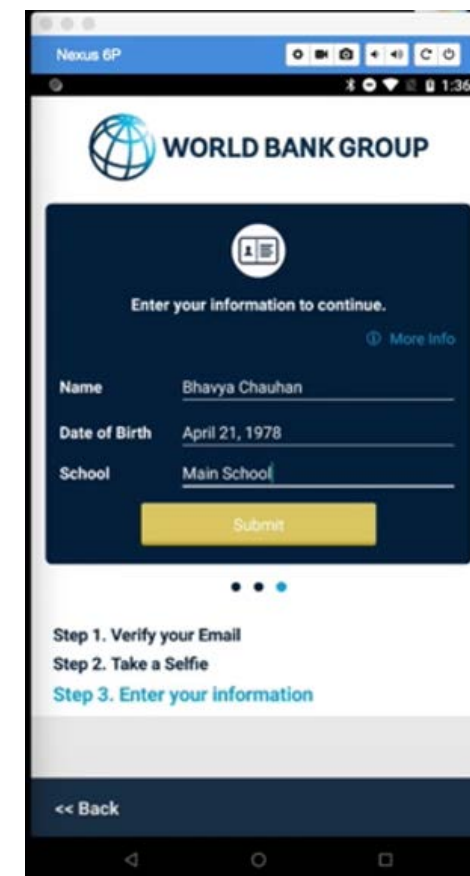
# Identity – Identity and Payments for Civil Servants

Current World Bank payments flow through a bank in Turkey, that in turn sends the money further into Somalia. The government does not receive any confirmation that the payment has reached the teacher. It is also difficult for the government to know that all of the teachers who should receive a payment are on their teacher rolls and that they aren't paying those, who shouldn't receive a salary supplement.



The screenshot shows a web application interface for an 'Admin Site'. The left sidebar contains the 'Ministry of Education' logo, the user name 'John Smith', and a list of navigation links: 'School Administrators', 'Teachers', 'Invite new Administrators', 'Teachers' Payment History', and 'Sign Out'. The main content area is titled 'Payment History' and features a table with payment records. The table has columns for '#', 'Name', 'Amount', 'Status', 'Transaction ID', 'Created Date', and 'updated Date'. There are three entries, all for 'Mercedeh Ebrahimi' with an amount of 500 and status of 'APPROVED'. The table includes pagination controls at the bottom showing 'Showing 1 to 3 of 3 entries' and 'Previous 1 Next'.

#	Name	Amount	Status	Transaction ID	Created Date	updated Date
1	Mercedeh Ebrahimi	500	APPROVED	86f1ffa1-aa78-4215-b5aa-346955a74281	2018-06-25T21:04:38Z	2018-06-25T21:05:08Z
2	Mercedeh Ebrahimi	500	APPROVED	98757bf3-90ed-4732-844f-166c5a29145f	2018-06-25T21:01:46Z	2018-06-25T21:02:11Z
3	Mercedeh Ebrahimi	500	APPROVED	f165d98e-a1e2-4b81-9d98-d76c9ec5c283	2018-06-25T21:00:20Z	2018-06-25T21:00:49Z



The screenshot shows a mobile application interface for the 'WORLD BANK GROUP'. The screen prompts the user to 'Enter your information to continue.' with fields for 'Name' (Bhavya Chauhan), 'Date of Birth' (April 21, 1978), and 'School' (Main School). A yellow 'Submit' button is at the bottom. Below the form, there are three dots indicating a sequence of steps: 'Step 1. Verify your Email', 'Step 2. Take a Selfie', and 'Step 3. Enter your information' (highlighted in blue). At the very bottom is a '<< Back' button.





# Blockchain for Land Management (Social Urban & Resilience GP)

## THE CHALLENGE:

- 70% of the world's population does not have access to affordable land administration services. Corruption, fraud, inconsistencies in land rights and ownership, fragmented, costly and labor-intensive administration are common challenges in the land administration sector.

## THE OBJECTIVE:

- Explore and test ways to ensure immutability of land title records, increase transparency across records and processes, and provide resiliency of records by using blockchain technology.

## THE BENEFIT:

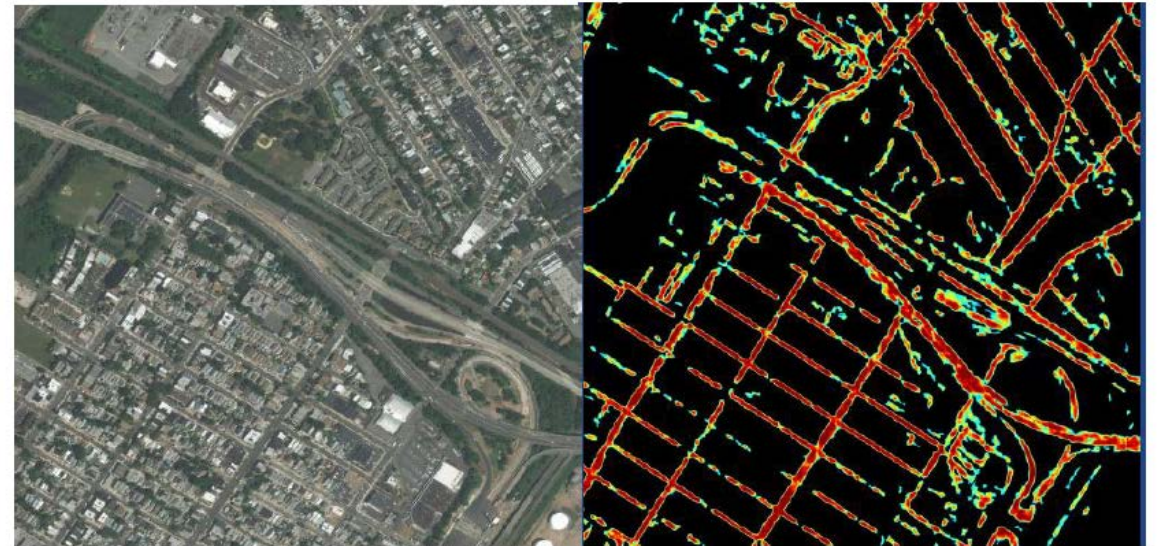
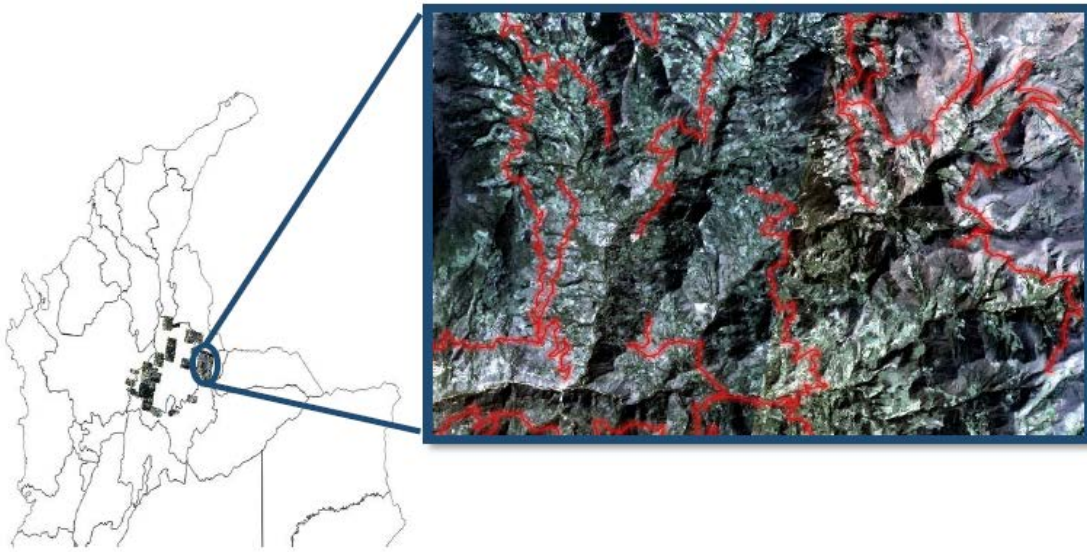
- A blockchain solution could increase transaction transparency and auditability while reducing corruption, improve trust and disintermediation, promote multi-party transactions (supporting women & other vulnerable groups), and introduce digitized asset for trade.





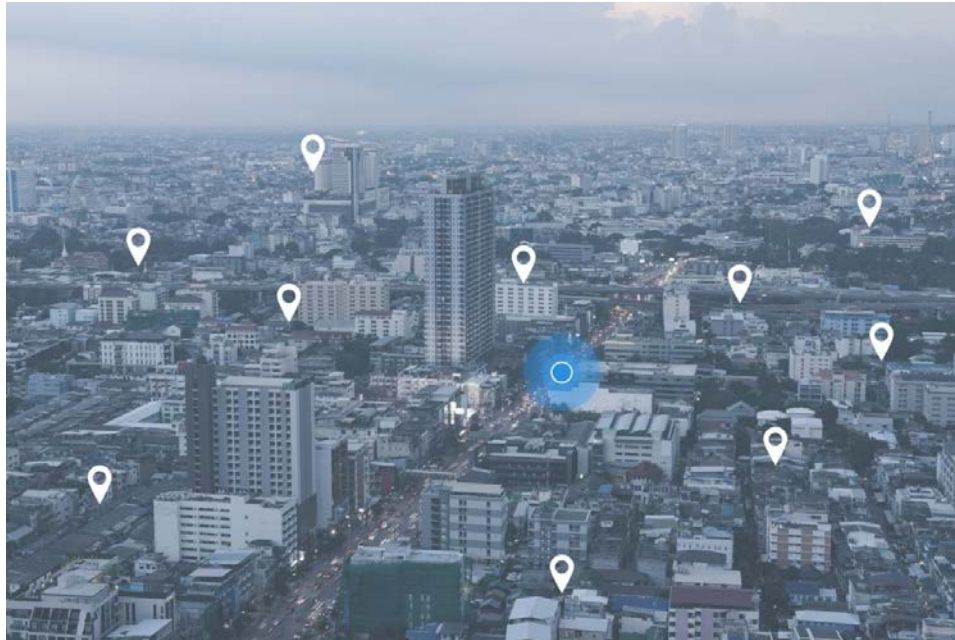
# Predicting Rural Roads in Colombia

Using Satellite images and information about tertiary network available, machine learning models can be trained to estimate the quantity of roads in municipalities where only satellite images are available, which will diminish cost of inventory compared to fieldwork, and will allow better apply established policy guidelines



# Smart Phone Location Data – Disaster Preparedness

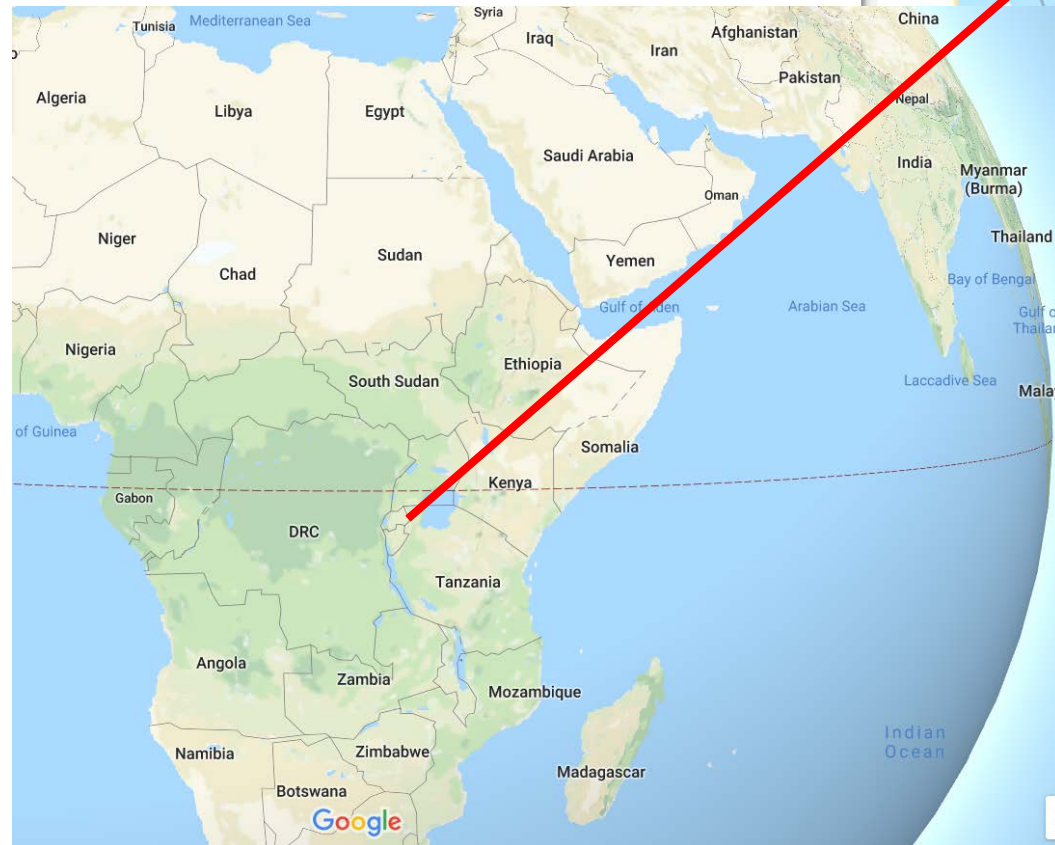
Actively and passively produced mobile phone data can strengthen all phases of disaster managements – Tracking, Aid distribution, risk analysis. Exploiting high-resolution location data to better inform urban resilience investments and policies.





# FCV(Fragility, Conflict and Violence) – Burundi

- Fragile State
- ~11 million inhabitants
- 64.6% below poverty line
- Mobile connection: less than 50% is covered- ITU
- 2G, 3G and LTE only in metro areas
- Literacy level 61. 57% (UNESCO) women 54.66% (15 years and above
- A maternal Health project
- CE is priority in the Country Partnership Framework





# Sharing TTL's Experience



# ITSTI Projects



Current  
Use Cases  
started in  
FY19

Current  
Use Cases  
started in  
FY20

Current  
Use Cases  
started in  
FY18

Completed  
Use Cases



# Fundamentals of Disruptive Technology Learning Program

One place where WBG staff can find self-paced online resources and access events calendar

- Launched on October 23, 2018: **1.5K staff trained by May 2019**
- Learning program site: <http://LearnDTech> (8.7K + page views)
- **33 learning events** run by the end of May 2019 including:
  - **8 101 learning sessions** on blockchain, AI & IoT
  - **9 Collaborate2Innovate** sessions on ITSTI use cases

## SATISFACTION RATINGS

85%

overall rate of satisfaction with the program

90%

satisfaction rate with the knowledge and skills of the course facilitators

77%

said that trainings are helpful and applicable to their work program

82%

rate of satisfaction with the course flow, i.e. level of interactivity, duration and pace

## Program website:

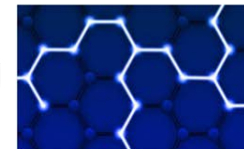


Fundamentals of Disruptive Technologies learning program is designed to provide all WBG staff with fundamental knowledge and hands-on, practical experience with technologies that have the potential to change the contours of the global economy. The program offers online and face-to-face learning sessions with Bank Group and external experts, initially focusing on the following topics: Blockchain and Distributed Ledger Technology (DLT), Artificial Intelligence (AI) and Internet of Things (IoT).

The program was launched by Information and Technology Solutions (ITS) in partnership with other groups in the WBG, including Disruptive Technology Network and DECKM.

The program aims to share with the wider WBG the learnings and knowledge acquired as a result of the ongoing exploration with disruptive technologies through ITS's Technology & Innovation Lab. It complements other related work in the WBG, and ITS is looking forward to partner with other teams to align and speed up learning and collaboration on these technologies.

### Topics



#### Blockchain

Understand exactly what a blockchain is, as well as learn about use cases that the Bank's teams are currently working on.



#### Artificial Intelligence (AI)

Learn the basics about one of the fastest growing areas of computer science – Artificial Intelligence.



#### Internet of Things (IoT)

Gain an understanding of what the IoT is and how it is transforming our world into a complex system of connected devices.

## Access Events Calendar

### Special Requests

- Request a disruptive technology session for your team
- Apply your knowledge - join a use case

### Online Communities

- Artificial Intelligence (AI) Initiative
- ITS Technology & Innovation (ITSTI)
- Blockchain Legal and Policy Community
- Blockchain Lab - Security Community
- Blockchain - Technology Community

### Partnership

- Network of Innovators
- Disruptive Technology Network
- Open Learning Campus (DECKM)
- IFC Knowledge Management & Learning

Access events calendar via <http://LearnDTech> & OLC



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# Let's Work Together



**Collaborate2Innovate**



**Learn2Innovate**



**Communicate2Innovate**

Want more information? Contact us at  
[TechnologyInnovation@worldbankgroup.org](mailto:TechnologyInnovation@worldbankgroup.org)

Visit our website <http://ITSInnovation>

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