



Trinidad &  
Tobago IFC

Financial Sector Development

# TTIFC VIRTUAL PUBLIC SECTOR STAKEHOLDER ENGAGEMENT FORUM

The Digitalisation of Payments  
Now, Next & Beyond



WELCOME

**Trinidad and Tobago Vision of becoming a 'Cashless Society' and a 'FinTech-enabled Financial Services hub'**

### TTIFCMCL Strategic Objectives

Facilitate and advance of  
Financial Inclusion

'Cashless' and  
future-ready  
financial services  
technologies

An enabling ecosystem for  
FinTech integration & cashless  
transformation (Fin Tech Hub)

National and International communications & public education campaigns

# Focus of the TTIFC's Strategic Plan

Trinidad and Tobago Vision of becoming a 'Cashless Society' and a 'FinTech-enabled Financial Services hub'

## TTIFCMCL Strategic Themes

Theme 1

Promoting and advancing financial inclusion

Theme 2

Accelerating digitalization of payments across the GoRTT

Theme 3

Facilitating investment opportunities from international fintech's with a focus on developing local capabilities for export potential

## TTIFCMCL Strategic Objectives

Facilitate and advance financial inclusion where needed in key segments of society

Promoting the development and adoption of 'cashless' and future-ready financial services technologies, applications and systems in the public and private sectors

Collaborate and advise on the development of the required enabling ecosystem to foster FinTech integration, cashless transformation, and future-ready financial services development

Execute targeted, integrated, national and international communications/outreach/education campaigns, that would increase awareness, knowledge, understanding, adoption of future-ready financial services

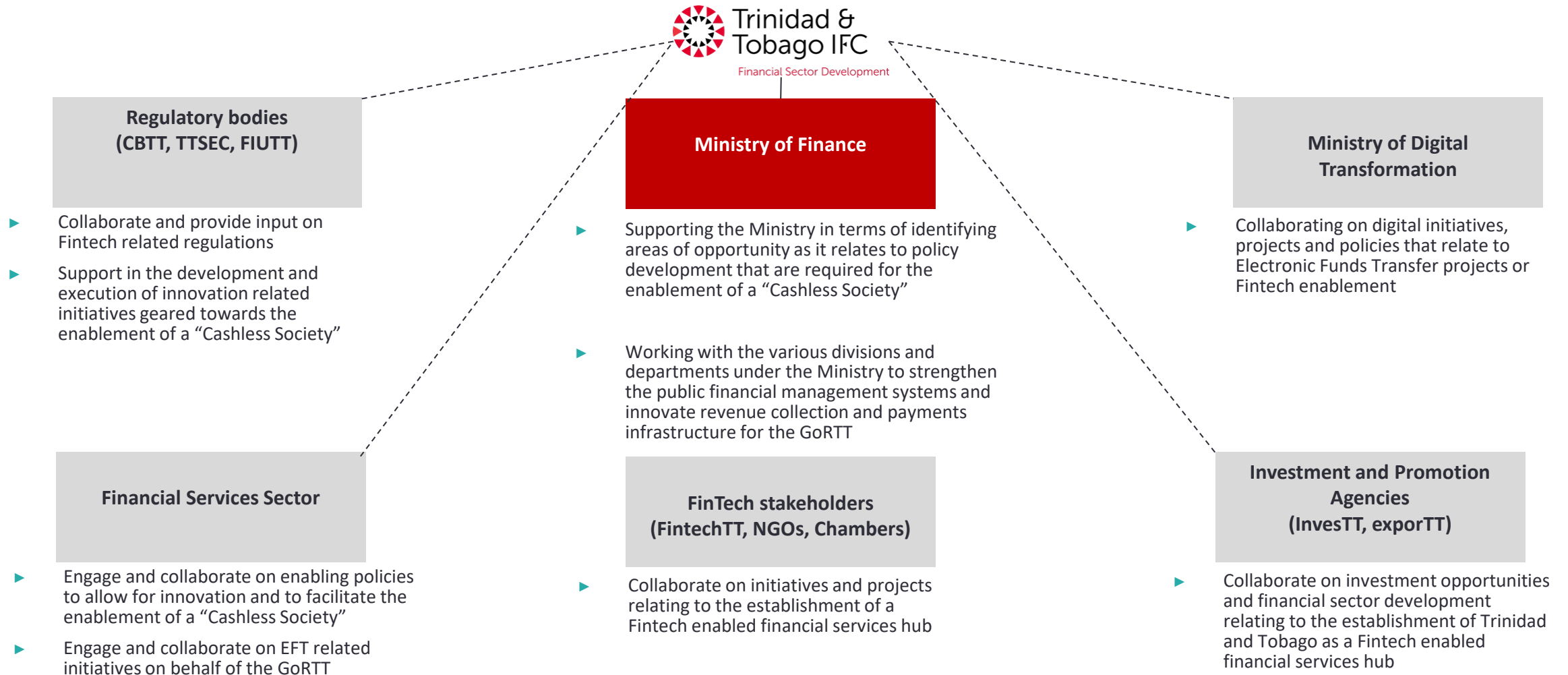
## TTIFCMCL Critical Activities

- Lead the development and implementation of a national financial inclusion roadmap. Currently working with the **CBTT** and **CAF** in defining an approach to survey the country to understand the current state.
- Established a working group with the Treasury division, **CBTT**, **TTCSIRT**, and related parties to enable multiple **EFT** channels and capabilities such as; **ACH** and **eVoucher**.
- Collaborating with organisations such as **MasterCard**, **Microsoft's founder's hub**, **AMCHAM**, **IDB**, **FintechTT** and **InvesTT** to develop an approach and programme to enable a Fintech Hub.



# TTIFC's Engagement Framework

Moving forward, all stakeholders outlined in the engagement framework below need to have clear open lines of communication to proactively support the delivery of the TTIFC based on their respective roles to facilitate the achievement of a "Cashless society"



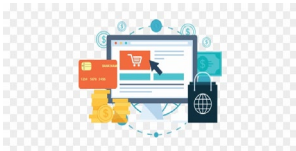
# E-Payments | Payment Architecture

## Transactional Flow

Citizen or diaspora



Online MDA  
24/7 Real-time



eCommerce Website



eCommerce mobile app

API  
Real-time flexible connectivity



## eCommerce Payment Gateway - FAC



**24x7 Real-time**

**Settlement timing: 1-2 days**

RTGS, Direct Debit, ACH  
Debit cards, Cheque

Credit cards

**PAYMENT OPTIONS**

e-Wallets

**Cash**

eMoney

QR Codes  
(Cash voucher)

**Commercial Banks**

**FAC, Banks**

**EndCash**

**Collection Network**

**EndCash (Republic Bank)**

**Paywise  
SurePay  
IGT  
Bill Express  
Via**

MDA Bank Account

Treasury Account

Central Bank of Trinidad and Tobago

### GoRTT EFT related entities



Government of the Republic of Trinidad and Tobago  
MINISTRY OF FINANCE  
TREASURY DIVISION

**The Ministry of Digital Transformation**

**Trinidad & Tobago IFC**  
Financial Sector Development

**CENTRAL BANK OF TRINIDAD & TOBAGO**

Trinidad And Tobago  
Cyber Security  
Incident Response Team

## The TTIFC “Fintech SMR” Team



**Mr. Chandradath Maharaj**  
**Vice President, Financial Markets Development**



**Dr. Michelle Salandy**  
**Manager, Financial Management Services**



**Mr. Carlos Newton**  
**Manager, Financial Systems Service Delivery**





Trinidad &  
Tobago IFC

Financial Sector Development

# Promoting And Advancing Financial Inclusion

Dr. Michelle Salandy - Manager,  
Financial Management Services





# Promoting And Advancing Financial Inclusion

Dr. Michelle Salandy  
Manager, Financial Management Services

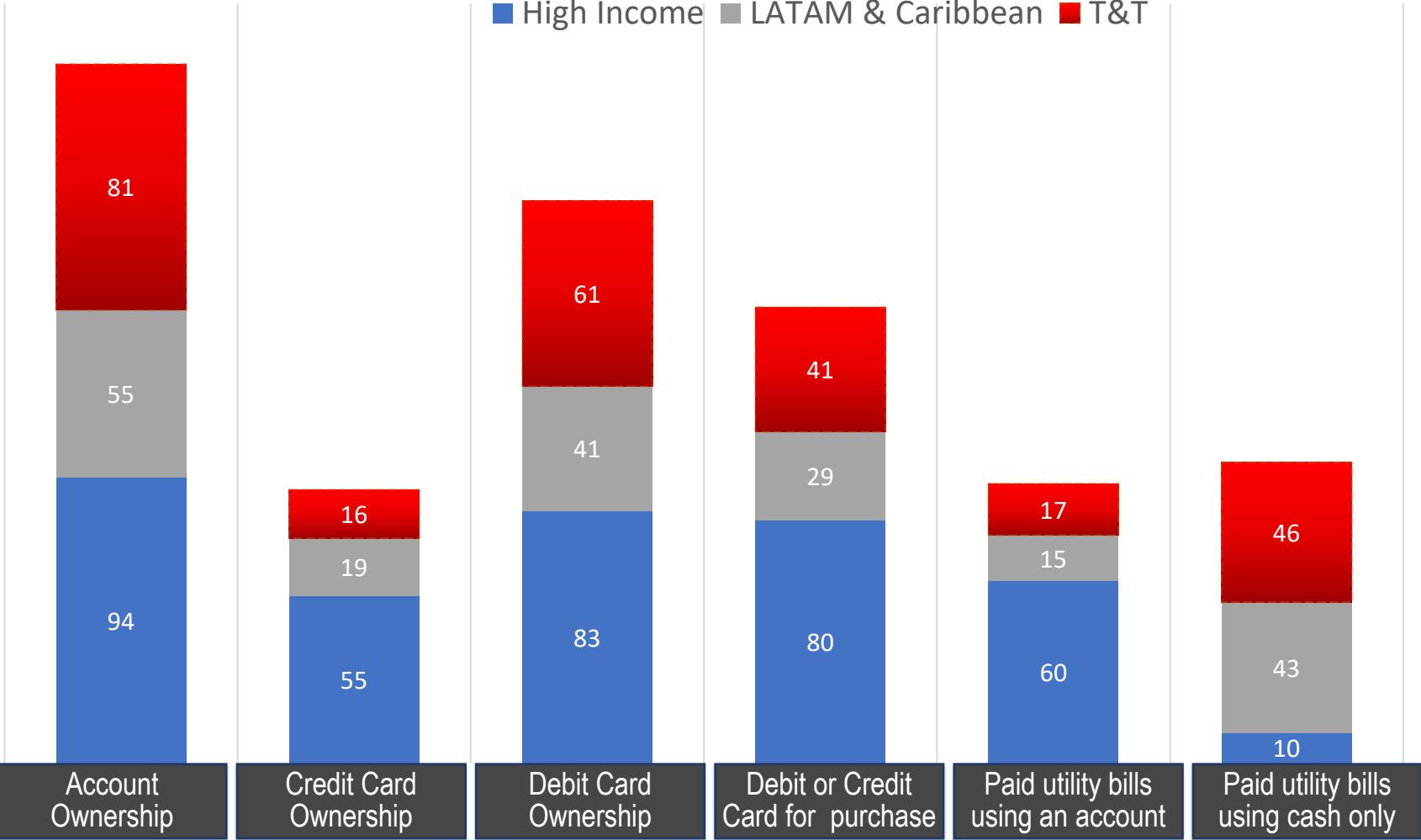
# Financial Inclusion

Financial inclusion refers to individuals and businesses that have access to useful, sustainable, and affordable financial products and services that meet their transaction, payment, saving, credit, and insurance needs (World Bank).

It is not an objective in an of itself:



# Financial Inclusion Landscape as of 2017



- Approximately, twice as many individuals in high-income used debit and credit cards as a payment option.
- Approximately, four times more individuals in high-income economies paid their utility bills using an account.
- Approximately, five times more individuals in T&T paid their utility bills using cash only.



# The Way Forward



1. Financial Inclusion Survey will be utilised to collate valid, reliable, and up to date statistics to fill existing data gaps. Country-level data is key to the performance of diagnostic assessments to inform the design of a National Financial Inclusion Strategy. Data allows us to better understand consumer behaviour, consumer demands, and consumer barriers and obstacles to allow for accurate assessments.
2. National Financial Inclusion Strategies will outline country-specific initiatives designed to remove barriers necessary to help strengthen the countries' overall financial systems and expand financial inclusion. These practical set of actions would underpin international best practice and set national financial inclusion goals and targets which are useful for monitoring and evaluation.
3. Roadmap will guide the sequencing, timeline, and processes, for the implementation of the National Financial Inclusion Strategies alongside stakeholders at the national or subnational level.

# FinTech-Enabled Financial Services Hub

Mr. Chandradath Maharaj  
Vice President Financial Markets Development

# The Vision

## ‘Cashless Society’ and a ‘FinTech-enabled Financial Services hub’

Promoting the development and adoption of ‘cashless’ and future-ready financial services technologies, applications and systems in the public and private sectors

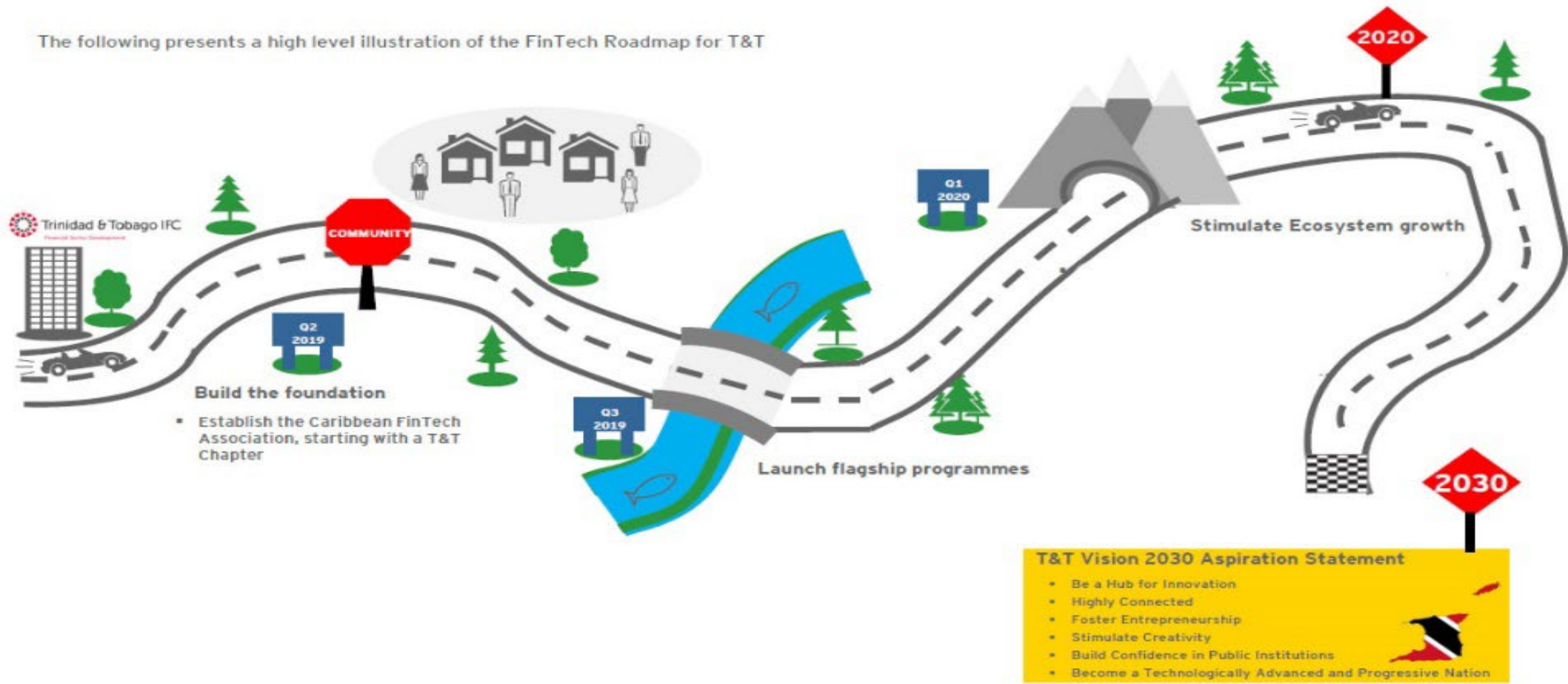
Collaborate and advise on the development of the required enabling ecosystem to foster FinTech integration, cashless transformation, and future-ready financial services development



# Creating A FinTech-Enabled Ecosystem

## FinTech Roadmap

The following presents a high level illustration of the FinTech Roadmap for T&T



# FinTech or Financial Technology

FinTech Innovation				
Payments, Clearing and settlement services		Credit, deposit and capital-raising services	Investment management services	Insurance
Retail	Wholesale	Crowdfunding	High-frequency trading	Link to mobile devices
Mobile Wallets	Business to Business point of sale	Lending marketplaces	Copy trading	Big data
Peer-to-peer transfers	FX wholesale	Mobile banks	E-trading	Improved risk pricing
Digital currencies	Digital exchange platforms	Credit scoring	Robo-advice	New contracts

Source: Adapted from Thakor 2019

# The Road So Far

FinTechTT

Comments - EMI Order, NBNFI, Payments Policy, e-Signature

National Recovery

Joint FinTech Steering Committee & Innovation Hub

Stakeholder Engagement

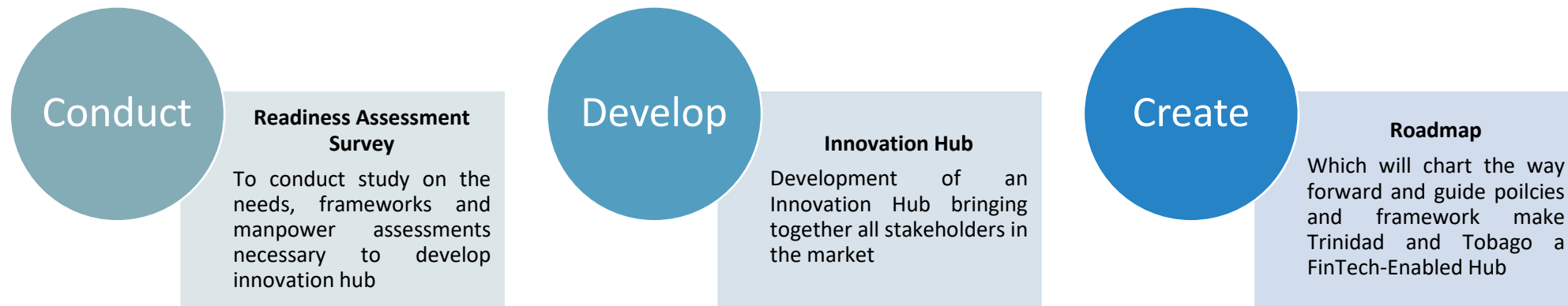
Investment Promotion

Government digitalisation



# Key Initiatives

## The TTIFC's approach to making Trinidad and Tobago a FinTech Enabled Hub



# FinTech-Enabled Financial Services Hub

Mr. Carlos Newton  
Manager Financial Systems Services Delivery

# Digitalisation of payments across the Government of Trinidad and Tobago

Digitalization of government payments involves the shifting from paper-based payments—that is, payrolls, benefits, pensions, social programs, fines, fees, taxes, and other payments—to some form of electronic or digital payment (World Bank 2020).

At the Trinidad and Tobago International Financial Centre (T&T IFC) through the Ministry of Finance we would seek to accelerating the digitalisation payments across all government agencies. This is one of the T&T IFC key mandate pillars, that aid in:

Improving the way governments make and receive payments



Better government efficiency

Improved public welfare



Support and improve economic activity





## Digitalisation of payments across the Government of Trinidad and Tobago

Through this governments can promote financial inclusion by influencing how recipients receive their payments—such as requiring that payments be made into an account.

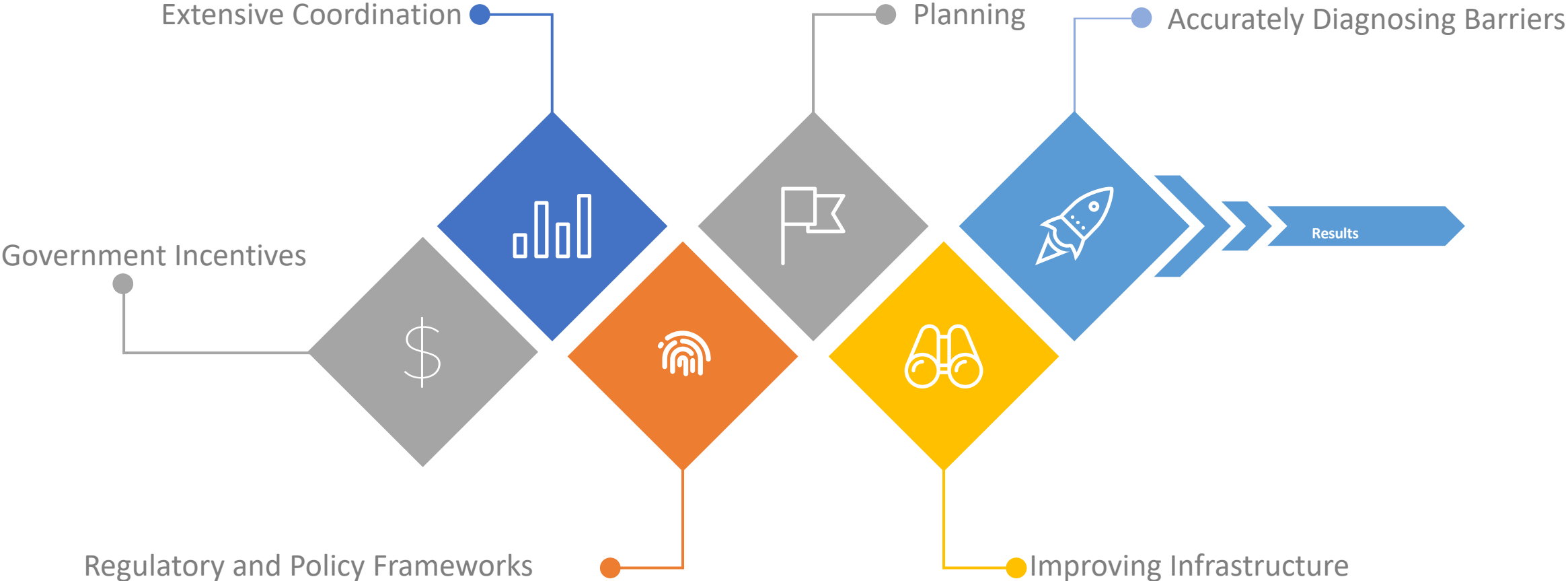
Many countries across the globe have embarked on the digitilisation of payments as it contributes to the achievement of five key global development goals;

1. Driving financial inclusion and economic empowerment, particularly among women and youths;
2. Improving social protection and humanitarian response systems;
3. Enabling more efficient and productive health, agriculture, energy and other sectors;
4. Improving governance, including increased transparency, reduced corruption and;
5. Increasing economic growth and market-level development.



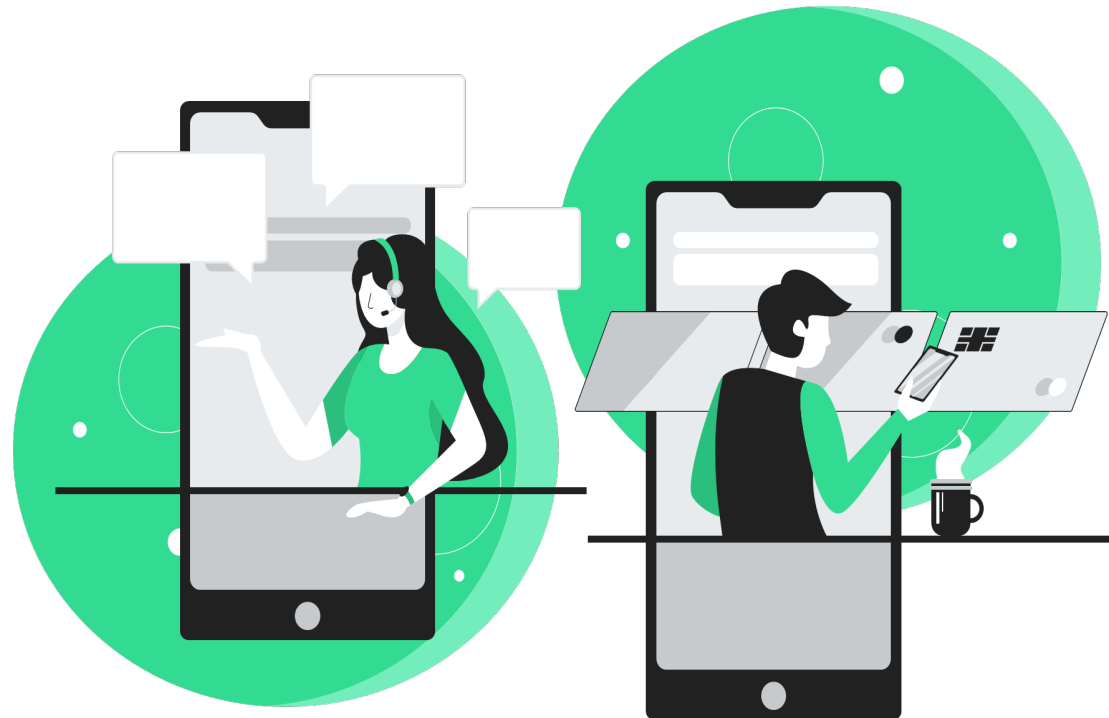
# Digitalisation of payments across the Government of Trinidad and Tobago

The T&T IFC's approach to accelerating the digitalisation of payments across the government requires a strategic approach that involves:



## Digitalisation of payments across the Government of Trinidad and Tobago

In the first instance we would be developing an Electronic Funds Transfer Framework and Policy to streamline the enablement of EFT payment methods for use by MDAs. These previous set of practical actions would be underpinned by international best practice and set the stage for the digitalisation of payments across the Government of Trinidad and Tobago.



Thank you

# Stakeholder Discussion



- **Wayne Nakhid - Deputy National Chief Digital Officer, Ministry of Digital Transformation**
- **Richard Downie – President, Bankers’ Association OF Trinidad & Tobago (BATT)**
- **Angus Smith – Manager, Trinidad and Tobago Cyber Security Incident Response Team (TTCsIRT)**
- **Maria Daniel - President, FinTechTT**





Government of the Republic of Trinidad and Tobago  
Ministry of Digital Transformation



# **TTIFC's Stakeholder Event Digitilisation of Payments: Now, Next, Beyond**

## **Overview of the Ministry of Digital Transformation**

November 17, 2021

# Background

- Established: July 12th, 2021
- Minister: Senator the Honourable Hassel Bacchus

- Vision 2030 Plan synthesized statement:

*“Trinidad and Tobago will be an inter-connected, technologically advanced society with modern information and communication systems driving innovation, growth and social progress.”*

- ICT Blueprint 2018-2022 (adapted):

*“Our vision of Empowered People is where citizens have pervasive access to ICT; are connected to broadband infrastructure which provides a variety of services that are affordable, of high quality, safe, and secure; and are deriving high value from the use of ICT, benefiting themselves and society.”*

# Mandate

”

***“A new way to address the end-to-end consumption and delivery of goods and services to customers using appropriate digital technology.”***

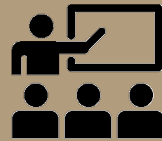
Senator the Honourable  
Hassel Bacchus

“

# Core Values

## CAPACITY DEVELOPMENT

We want to have the right skills, abilities and competences within government and society at large to facilitate meaningful contributions.



## HOPE

We want to instil hope that this is the start of something sustainable that will benefit every citizen and will revolutionise the way we do business.



## RESPONSIVENESS

We want to be flexible and agile enough to adapt as circumstances change so that we can meet the evolving and specific needs of citizens.



## TRUST

We want to demonstrate that our digital infrastructure is secure, robust and will withstand cyber attacks and independent scrutiny. We want our technology to be known for its reliability and availability.



## CREDIBILITY

We want to emulate what we preach and lead by action.



## PARTICIPATION

We want people to always be in the know and we want people to engage and have dialogue with us to help shape and prioritise all that we do.



## TRANSPARENCY

We are accountable to the citizens so they must see all that we are doing and what it means for them and ensure adherence to the principles of governance and integrity.



# Guiding Principles – Macro Level

Underlying Philosophy: Crafted in Trinidad and Tobago, Built on Open Source, Shared Nationally



## ICT FOR ALL

- Accessibility (Devices & Connectivity)
- E-Payments
- Digital Literacy
- Digital Inclusion
- Digital Participation
- Affordability



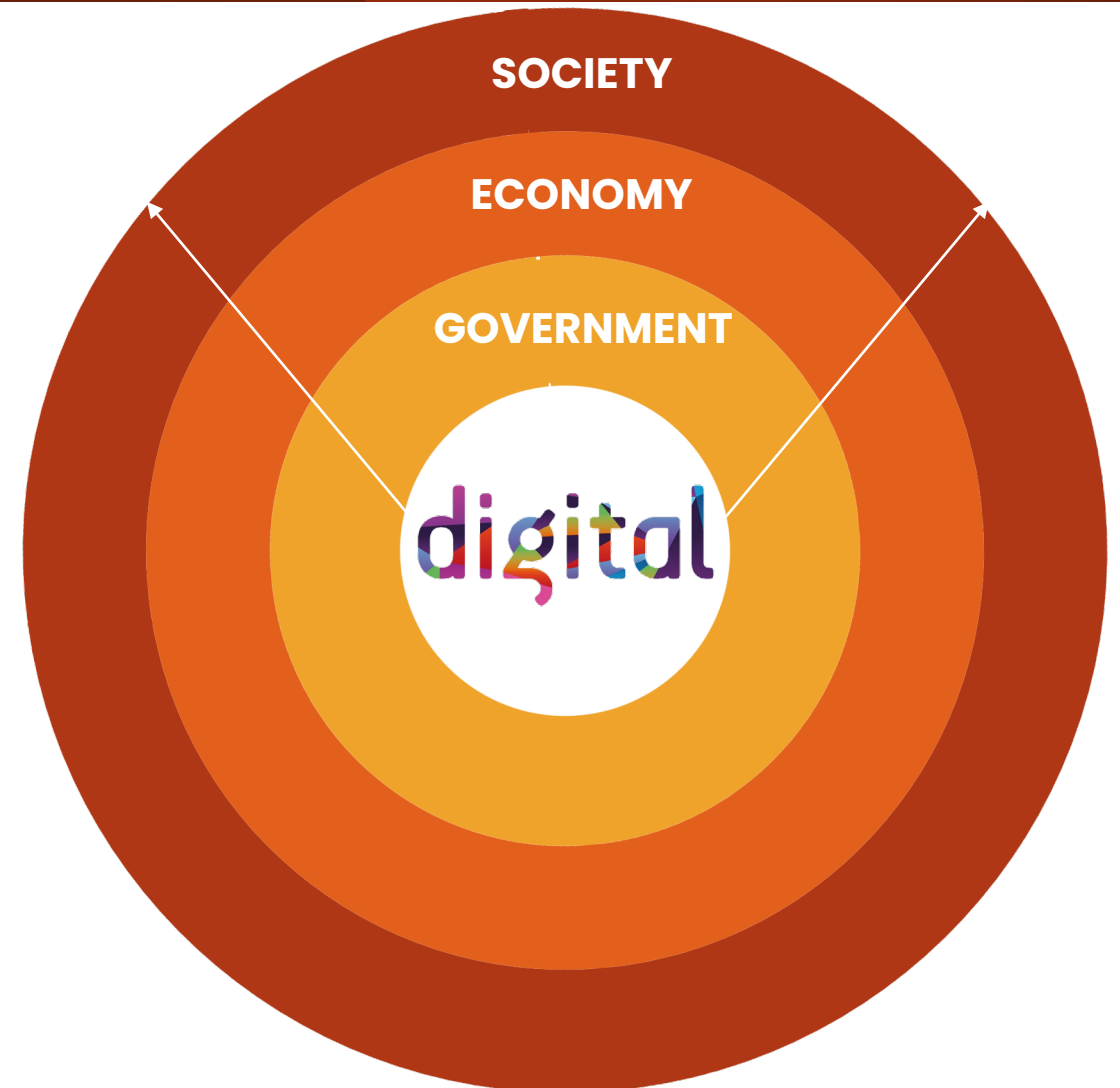
## Economic development and diversification

- Digitalised MSMEs
- Digital Ecosystem
- Cloud
- Internet of Things
- ICT Sector Development
- Enabling Legislation
- Innovative Fintech
- Local Software Development (Green Technology)



## Better government services and more efficient government

- E-Government Portals
- Services On-line
- Rationalised Delivery Channels
- National eID
- GovPay\*
- Integrated Government





# Potential projects

- New e-identification solution
- New government portal
- Developer's Hub
- Expanding use of Free TTWiFi
- Expanded use of Community Access Centres
- Innovative payment mechanisms for the unbanked piloted in agriculture
- Online local cocoa store
- Traceability for fine flavour local cocoa
- Online crafts store of local artisans
- IOT for flood prediction and management
- Drone technology for agriculture
- E-literacy
- Building people, business and land/property data sharing hubs
- Improved social benefit distribution using new e-id
- Vaccine passports
- Mobile applications
  - At home health management
  - Security for users of public transportation
- Improved on-line learning using digital textbooks
- Strengthening cybersecurity and enhancing personal data protection
- Co-development of e-services
- Building of an open-source repository

Thank you

# BANKERS ASSOCIATION OF TRINIDAD & TOBAGO(BATT)

TTIFC Public Sector Stakeholder Engagement Session

## Digitalisation of payments: Now, Next, Beyond



**BANKERS**  
ASSOCIATION  
OF TRINIDAD AND TOBAGO





## *Introduction*

The Bankers Association of Trinidad & Tobago (BATT) is the leading association for the banking sector, which includes the eight commercial banks, namely RBC Royal Bank Limited, Republic Bank Limited, Scotia Trinidad and Tobago Limited, ANSA Bank Limited, JMMB Bank Trinidad and Tobago Limited, First Citizens Bank Limited, Citibank (Trinidad & Tobago) and CIBC First Caribbean



## **The Role of BATT**

The BATT, which was established in 1997 has been taking an active role in addressing key issues from a common platform and providing expert advice on matters related to the financial sector, public education and imparting knowledge on key issues related to the economic development of the country.

### **Mission Statement**

To play a core role in the growth and stability of the financial sector, through advocacy and representation; and to facilitate the provision of the most competitive banking products and services to our customers, with integrity and transparency.



## Strategic Focus

- **Representation & Reputation:** To promote a better banking industry for the benefit of Trinidad & Tobago
- **Lobbying & Advocacy:** Functioning in an advisory role to our stakeholders on the financial services sector based on best practices and proven results
- **Education & Corporate Social Responsibility:** Working with our stakeholders to create sustainable projects/solutions to issues plaguing our society and playing our part in the enrichment of life for all.



# BATT's Digital Space

## Impact of the Covid19 pandemic on Banks I

- Accelerated change
- Rethink e-commerce given an environment where people are physically limited in how they move around.
- Go digital or not go at all for some businesses
- Advance the digitization agenda



## Technological gains

- Banks as an essential service remained fully functional in the midst of the covid19 pandemic. The sector was able to re-engineer its services, while playing a great role in alleviating the impacts of the pandemic on our customers and staff while taking the opportunity to improve delivery channels utilizing new and improved digital technology to bolster digital payment platforms and service delivery mechanisms.



- **Examples**

- *On-boarded process with respect to opening accounts and access traditional banking products*

- Customers are now able to apply for a loan or credit card online and upload all required documents. Only when the customer requires to sign the contract, they are asked to visit the bank, but initial process is done online. If the banks require any further information or clarity, they will call the customer.

- *Internet banking*- to register for or set-up online or mobile banking, this process is now available online. Most banks have established an end-to-end digital process, which makes it much easier and hassle free and no need to visit the banks.



- ***Ecommerce-*** Almost all banks have implemented and improve local e-commerce solutions. Businesses and entrepreneurs can now receive and accept online payments. Most banks have a relationship with international payments systems.
- ***Latest fraud technology.*** With the advancement of our digital platforms, the banks have to ensure we keep a step ahead of the fraudster, so we have instituted the latest fraud technology system.
- ***Interbank and ACH transactions*** have been made easier. Customers can now transfer funds digitally to another bank without having to leave their homes. There has been an increase in internet banking. BATT's plan is to host more workshops and initiatives to educate our customers on digital banking.
- ***ECCS-Electronic Cheque Truncation-*** the banks are currently working on the back end to implement the required systems. This is soon to be launched.
- ***You can end with your vision for BATT-*** To continue to advance digital banking,



## President's vision and strategic initiatives

- **Advance the digitization agenda**
  - Public education is an imperative
  - Support marginalized groups so they are not excluded or left behind in a digitized banking system
- **Support digitization as a national priority issue**
  - The creation of the Ministry of Digital Transformation, the Tech Investment Fund and a Tech Promotions and Development Company are indicative of a national commitment to prioritise innovation and digitalization.



## Modernization of the payments system,.

- This system implementation would introduce the framework for faster electronic payment solutions such as Image to ATM, Remote Cheque deposit and Full Cheque Truncation to be achieved.
  - Already we have spearheaded discussions with the Central Bank of Trinidad and Tobago and the Ministry of Finance and there is active work taking place to address this. At present, we are examining three umbrella categories:

Thank you

Angus Smith  
Manager, Trinidad and Tobago Cyber Security  
Incident Response Team (TTCsIRT)





Trinidad And Tobago  
Cyber Security  
Incident Response Team

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# SECURITY ASSESSMENT PROCESS FOR GOVERNMENT E-PAYMENT SYSTEMS

# CYBER SECURITY ASSESSMENTS FOR PAYMENT APPLICATIONS

Trinidad & Tobago -  
Cyber Security Incident Response Team (TT-CSIRT)

- Based in the Ministry of National Security
- Developed out of the National Cyber Security Strategy
- Created in 2015, Operational -2017
- Conducting cyber security assessments since 2018
- Approx. 15 assessments conducted.



# CYBER SECURITY ASSESSMENTS FOR PAYMENT APPLICATIONS

A cyber security based assessment on the payment application and it's related infrastructure.

- Aims and Objective
  - Protection of Citizens information
  - Protection of Government Funds
  - Identification and mitigation of application vulnerabilities
  - Reduction of Downtime due to exploitation of vulnerabilities by
    - Malicious Threat Actors, System errors and Insider Threats.
  - Promotion of standardized application development.
  - Assist in the implementation of security controls for the application and related infrastructure.
- Guiding Policy
  - Electronic Funds Transfer Instructions for Online Payments – Ministry of Finance – Treasury Division

# ENGAGEMENT PROCESS

- System Briefing
  - Informal virtual meeting to introduce TT-CSIRT to your project and determine scope of assessment.
    - TT-CSIRT
    - Third Party Vendor – in consultation with client
- Formal Engagement Letter
  - Sent to the Permanent Secretary of the Ministry of National Security and Manager TT-CSIRT
  - Acknowledgement letter from TT-CSIRT which outlines the process to be followed.
- Information Collection
  - A list of required documentation will be provided by TT-CSIRT to the MDA

# ENGAGEMENT PROCESS

- Preproduction Technical Assessment
  - A vulnerability report will be provided to the MDA highlighting issue/s which will need to be addressed before the system is publicly launched.
  - Reassessments will be conducted as necessary to ensure all highlighted issues have been resolved prior to public launch.
- Post Production Technical Assessment
  - A post production assessment will be conducted after application is launched to verify application status.
  - A vulnerability report will be provided to the MDA within three months of the system being launched to the public
- Follow-up assessments will be conducted on a interval basis thereafter.



# REQUIRED DOCUMENTATION

- Enterprise Architecture
  - Network Diagram
  - Firewall Rules/Configuration
- Application Architecture
  - Data Flow Diagram
  - Flow Chart
  - Test Accounts
  - User Permissions Matrix
- Database
  - UML Class Diagram
  - User Permissions Matrix
- Information Security and Data Protection
  - Identity and Access Management Policy
  - Data Encryption Policy
  - Data Backup and Recovery Policy
  - Incident Response Plan
  - Proof of Logging and Audit Trails
- Vendor Documentation (Where Applicable)
  - Industry Standard Compliance certifications
  - Security Attestation
- Other Documentation
  - Security assessment reports

# INTERNATIONAL STANDARDS FOR ASSESSMENTS

Software Security		Infrastructure Security	Payment Data Security
OWASP Application Security Verification Standard (ASVS)	OWASP Ten 10	Center for Internet Security (CIS) Controls v8	Payment Card Industry Data Security Standard (PCI-DSS)







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@TTCSIRT

[angus.smith@ttcsirt.gov.tt](mailto:angus.smith@ttcsirt.gov.tt)

STAY CONNECTED!

Trinidad and Tobago Cyber Security Incident Response Team (TT-CSIRT)

Maria Daniel  
President, FinTechTT

## Vision

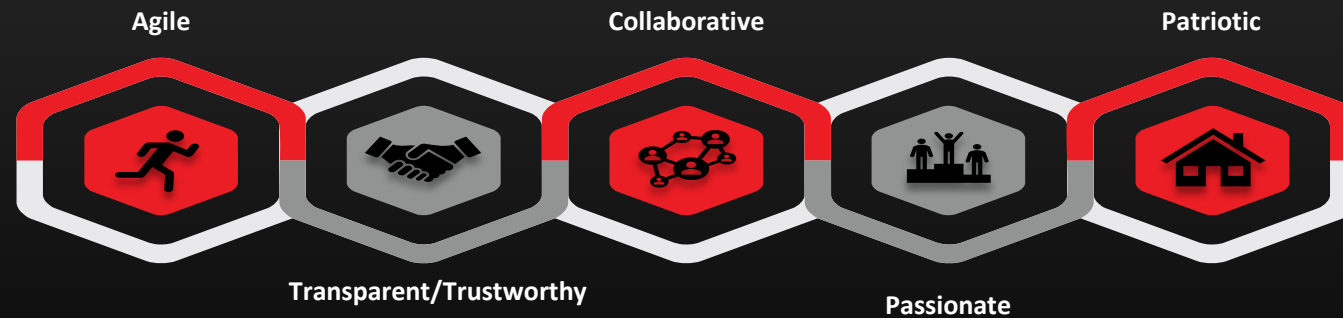
A globally competitive domestic ecosystem that will establish Trinidad & Tobago as the leading FinTech-enabled society in Latin America and the Caribbean.

## Mission

FinTechTT will facilitate an interconnected, cash-less society made possible by flourishing FinTech companies, embraced by the GORTT, and the business/financial services sector, demanded and endorsed by the general public.

## Our Values

The FinTech Association of Trinidad and Tobago is founded on the following values:



**Connect with us**

✉ [info@fintechtt.com](mailto:info@fintechtt.com)

🌐 [www.fintechtt.com](http://www.fintechtt.com)

📱 [f](#) [in](#) [t](#) @thefintechtt

Q&A

Thank You