



# Trinidad & Tobago IFC

Financial Sector Development



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DIV Solutions  
Analytics for Business

Improve Your Organisation with Data Science

RESOURCEFUL ALLIES  
WEBINAR SERIES

## Applying Data Science to the Caribbean Financial Sector

OCT  
28  
2020

3 p.m. to 4 p.m.

Speakers



**DR. PATRICK HOSEIN**  
Founder & Chief Research  
Officer, DIV Solutions



**EDDY DEVISSE**  
Managing Director,  
DIV Solutions



**DR. ANDREW BORG**  
Chief Technology Officer,  
DIV Solutions

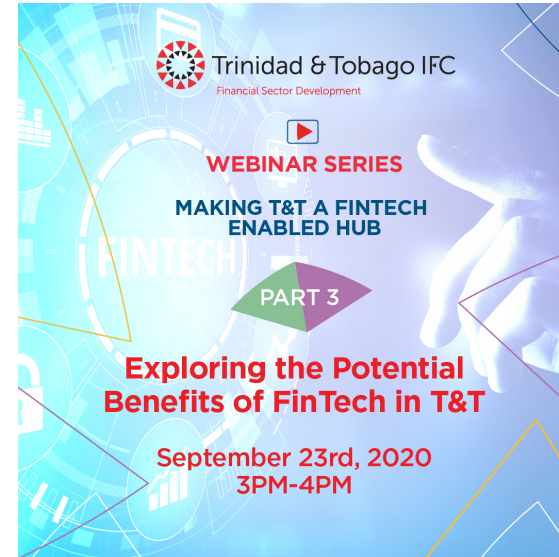


**NICOLAS JACOB**  
Data Scientist,  
DIV Solutions



**JODHAN MEDINA**  
Data Scientist,  
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# Public Engagement = Adoption

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## FinTech Integration

In keeping with its mandate, the **Trinidad & Tobago International Financial Centre (T&T IFC)** is tasked with the **development of the Financial Services sector**. As such, the T&T IFC is working towards **making T&T a FinTech-enabled Financial Services Hub**. To support this, the **T&T IFC advocates for T&T becoming a 'Cashless Society'** and, is the main driver for Financial Technology (FinTech) Integration across all sectors in T&T. While FinTech integration has proved to be more urgent due to the COVID-19 pandemic and the country's thrust towards economic recovery, we know that **there is a need for more information about FinTech and its untapped benefits**.

In this regard the T&T IFC presents a Webinar Series: **Making T&T a FinTech-enabled Financial Services Hub**.

### Part 4

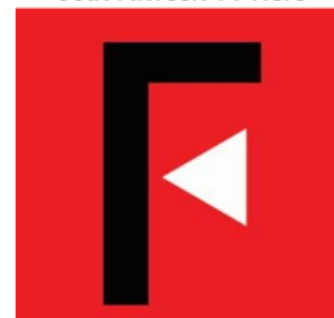
An Enabling Regulatory Ecosystem for FinTech



## Untapped Benefits Can Be Derived from FinTech Solutions



Join FinTech TT Here



Recordings  
available at  
[www.ttifc.co.tt](http://www.ttifc.co.tt)  
YouTube |  
Facebook

Over 400  
attendees

Over 600 views on  
YouTube

1000's of Social  
Media  
engagements

# T&T IFC

## Financial Sector Development

### Vision

To make Trinidad and Tobago one of the premier locations in the Caribbean and Latin America for Financial Services.

### Mission

To attract and facilitate foreign direct investment in the financial services sector that would enhance the growth and diversification of the economy by creating sustainable employment and generating foreign exchange.

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# FinTech Roadmap

## FinTech In T&T

The T&T IFC commissioned EY (in September 2018) to complete a comprehensive audit of the leading international financial services centres and their FinTech implementation.

A roadmap to making T&T a FinTech-Enabled Financial Services Hub was presented to the Ministry of Finance in May 2019.

National Launch of FinTechTT in February 2020.

A national awareness campaign on FinTech Integration and the benefits of a Cashless Society began in April 2020.

The T&T IFC officially transferred management of FinTech TT to the private sector on Wednesday 16th September 2020.

# “Create New & More Resilient Economies”



“The world that we have become accustomed to and life as we know it has changed and will quite possibly never return. The way people live, work, trade, recreate and learn and the way businesses and societies function have all experienced an upheaval of the norm in a relatively short space of time. The disruption which we are experiencing also brings with it the opportunity to create new and more resilient economies and societies that potentially have a better chance at achieving sustainable growth and development.”

Dr. Keith C. Rowley, Prime Minister, Trinidad & Tobago, 20<sup>th</sup> April 2020.

# Stimulated Economic Growth



## FinTech & A Digitalised T&T

### A Policy Perspective

Every industry - including banking and insurance - has experienced an unprecedented level of disruption due to the global COVID-19 pandemic.

To deal with this crisis the Government of the Republic of Trinidad & Tobago brought together various industry experts to create the "Roadmap to Recovery".

The Recovery committee identified three phases:

- Surviving the Crisis
- Re-igniting Economic Activity & Ensuring Social Stability
- Transforming to a New Economy & a New Society

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Today's Session is  
another building block  
in this chain towards  
making T&T a  
**FinTech-enabled  
Hub** and 'Cashless  
Society'.

OMAR SULTAN-KHAN  
CEO, T&T IFC  
Data Science in the Caribbean



Trinidad &  
Tobago IFC

Financial Sector Development

# Trinidad & Tobago International Financial Centre

## Financial Sector Development

The T&T IFC's mandate is to assist in diversifying the local economy – in part by attracting overseas companies to set up F&A business process outsourcing & shared services operations in Trinidad and Tobago.

These firms will hire our local talent, to perform work for their foreign clients, thereby creating jobs whilst earning foreign exchange for Trinidad and Tobago.

The T&T IFC has positioned itself as the bridge between the international F&A investor and the local Financial Services professional.

# Upskilling Our F&A Talent

## Partnerships for Human Capital Development



The T&T IFC signed a Memorandum of Understanding (MoU) with UWI-ROYTEC and Incus Services Ltd to deliver Data Analytics and Data Science Training to finance professionals and those professionals working in the Financial Services Sector.

Over 200 persons received training via virtual workshops in May 2020.

In July 2020, the T&T IFC signed an MoU with a local partner, DIV Solutions with the goal to explore developing a Data Science Hub in Trinidad and Tobago.



# Data Science Hub

## An Exploration

A taskforce has been created to lead the activities for the exploration and rollout of the hub.

It is comprised of representatives of T&T IFC and DIV Solutions.

Parties agreed to a 3-Phase rollout plan:

- Phase 1 - Stakeholder feedback (product/service demand validation)
- Phase 2 - Product development
- Phase 3 - Commercialization / scope expansion



# Data Science Hub

## Data Science Pilot Project

The T&T IFC and DIV Solutions have also engaged several local firms in the Financial Service sector including:

- Banking institutions
- Insurance companies
- Credit Unions and
- Investment firms

This will drive awareness of Data Science and allow firms to be considered for a free “Data Assessment”, and ultimately identify suitable companies to launch the Pilot Project.

**Complete the Stakeholder Survey at-**  
<http://www.ttifc.co.tt/areas-of-business/bpo-shared-services/data-science-analytics-hub>



# Trinidad & Tobago IFC

Financial Sector Development

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For more information on the available programmes, please reach out today!

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- M: +1 868 754-6436
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# DIV SOLUTIONS LTD.

Improve Your Organisation with Data Science

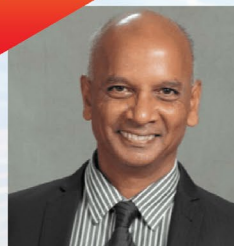
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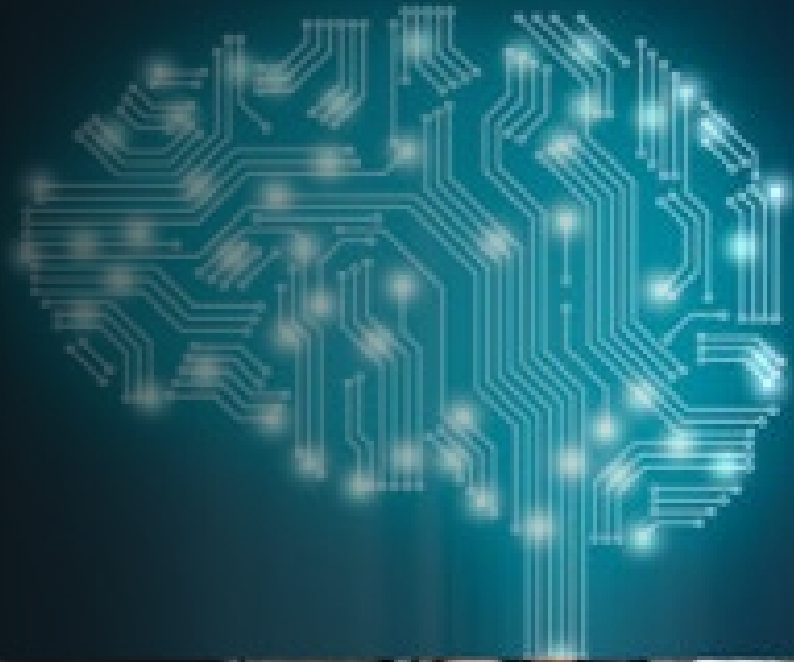


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# Applying Data Science to the Caribbean Financial Sector



State of the art science  
for better business profitability



**DIV Solutions**  
Analytics for Business



# Agenda

<b>Demystifying DS</b>	Data Science in Real Life
	Terminology
	Benefits of Data Science
<b>DS in Financial sector</b>	Examples of Data Science in Finance
<b>DS for your organization</b>	Business requirements to implement Data Science in Finance
	Data Science in your organization
	Survey results
	Questions & Answers



Google Maps

Traffic estimate &  
route options



Cashier-less stores

NETFLIX

Recommendation  
Engine



Prediction of vehicle  
breakdown



Increase ARPU w/  
targeted marketing  
cross-sell



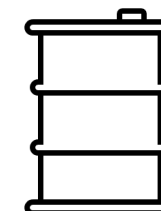
Self-service  
product  
personalization



Route efficiency  
calculations



Ecommerce  
product  
recommendations



Exploration &  
extraction

# Post COVID world

## Increased internal efficiency

- Agriculture
- Healthcare
- Manufacturing
- Oil & gas
- Distribution

## More self service & reduction of touch points

- Banking
- Retail
- eCommerce
- Government

## Personalized and Dynamic services

- Insurance
- Travel / Hospitality
- Education

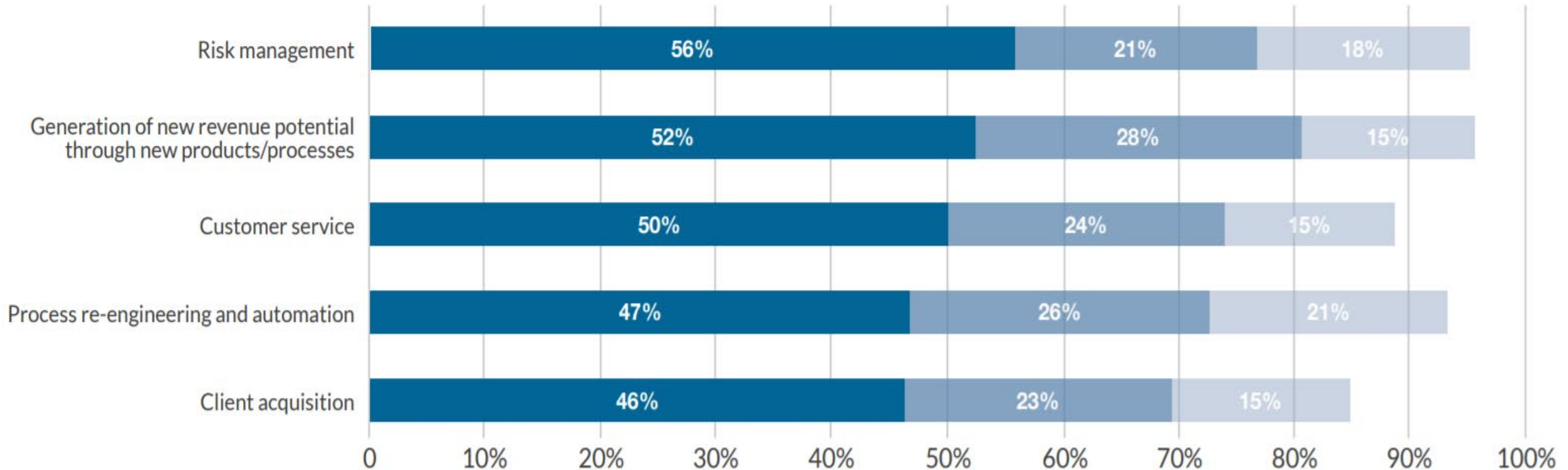
Nice to have



MUST have

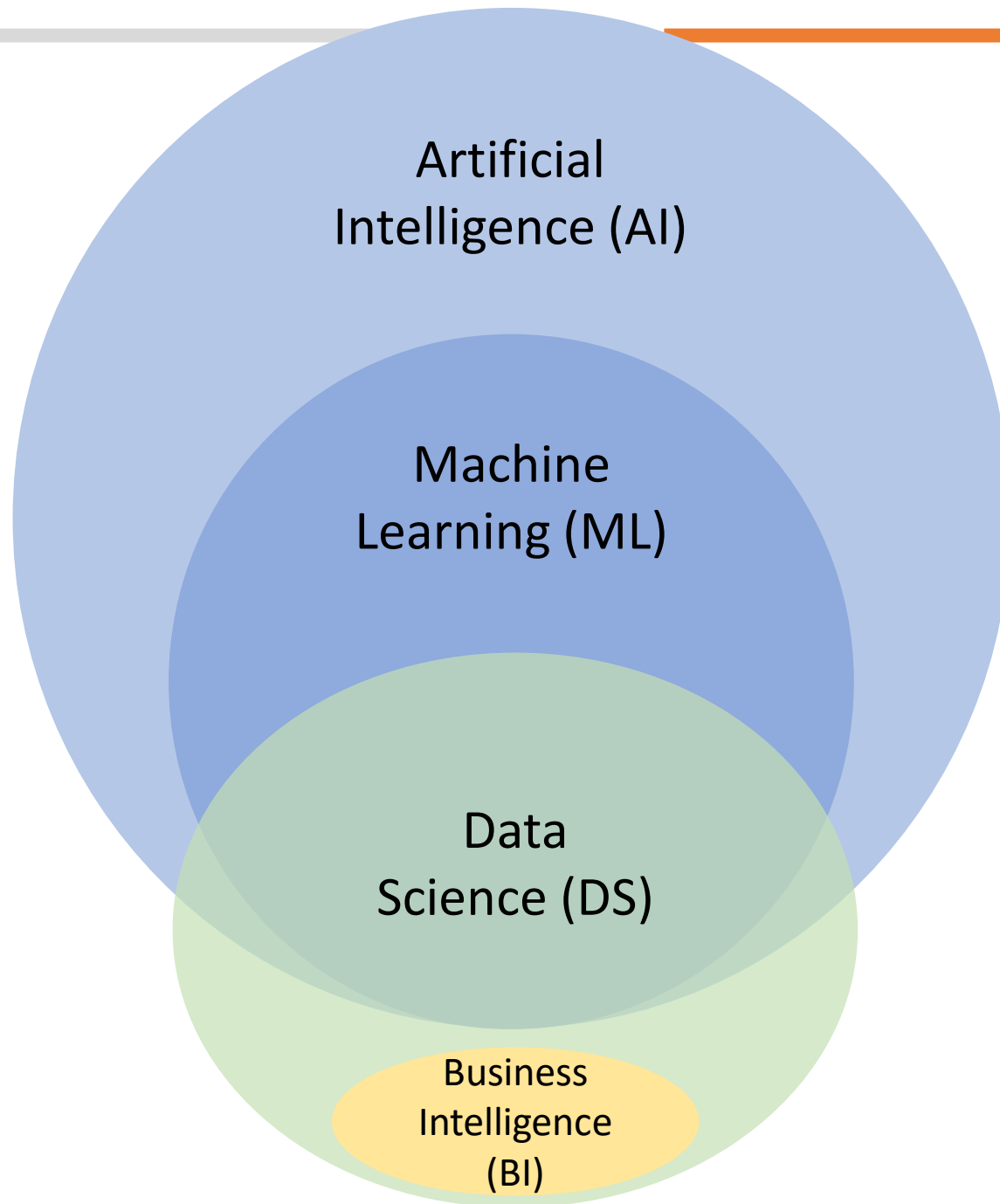
# Current state of Data Science in Finance

Data Science present in ~70% of FIs



# Terminology





Giving a machine the ability to understand, interpret & learn from data, to make “intelligent” human-like decisions.

An application of AI, where a machine can learn from historical relationships and trends in the data and apply this insight to produce reliable predictions.

A multidisciplinary field focused on deriving insight from data and development of predictive models to help organizational improvement.

A field focused on collecting, analysing and presenting business information.

# Key roles and competencies

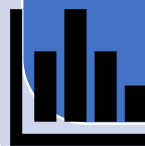
## Data Engineer

Develops, constructs, tests and maintains the complete architecture of large data sets



## Data Analyst

Analyses data to produce reports and answer queries from all levels of an organization



## Data Scientist

Uses multi-disciplinary knowledge to uncover hidden solutions and develop algorithms aimed at resolving business challenges



# Benefits of Data Science – Fraud Detection example

	Traditional Approach to Fraud Detection	Machine Learning Approach
<b>Detection method</b>	Transaction is blocked based on <b>pre-set</b> rules e.g. thresholds, patterns, user profile,...	ML models learn from patterns of behavior, and can identify patterns of fraudulent transactions <b>as they happen</b>
<b>Rule updates</b>	Rules need to be re-programmed by humans every time new rules need to be set and fraud methods evolve	The algorithm can update the rules as it learns new ones, only based on data

	Traditional Approach to Fraud Detection	ML Approach
Detection quality	Many false positives due to large number of strict rules	Less false positives, based on clusters of highly correlated users with suspicious commonalities
Detection timing	Detection happens after the fact	Detection can happen in real-time
Result	Fraudsters are always ahead	Significant reduction in false positives and increase in true positives

# Examples of Data Science in Finance

<b>Credit/Loan Assessment</b>	Objective assessments by using more data & sources, more efficiently, leading to increased previously unserved but profitable client base, decrease in risky client base.
<b>Risk Management &amp; Compliance</b>	Development of better risk models and financial forecasts for more accurate P&L projections (such as required by IFRS9)
<b>Product Sales &amp; Marketing</b>	Purchasing propensity & Recommender system help increase share of wallet and client experience, at a lower marketing/sales cost.
<b>Administrative Task Automation</b>	RPA for form data extraction, KYC, ID verification, digitization,... Faster processing with less human “touch points”.
<b>Customer Service</b>	24/7 Customized chatbot, Virtual assistant, Automated email routing for better and faster problem resolution and self service transactions.

## ✓ Executive Buy-in

- Define a Champion
- Constant communications
- Agile method

## ✓ Clear and realistic goals

- Better / New products
- Improved business decisions
- Process automation

# Business Requirements

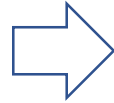
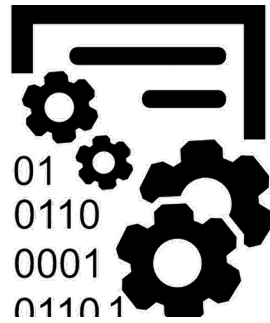
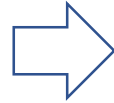
## ✓ Appropriate budget

- Long term investment
- Start simple and grow
- Focus on ROI

## Data

- Large volume
- Invest in Data Engineering
- Reduce “silos”

# Integrating data science into your business



Business Decision

Data Collection  
(1)

Data Science  
(2)

Use and  
Deployment  
(3)

*Data-Driven  
Pricing in an  
Insurance  
Company*

# Data Collection (1)

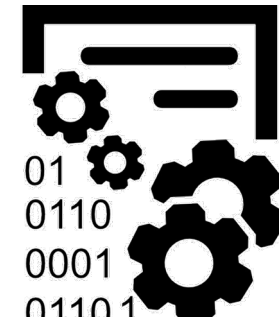
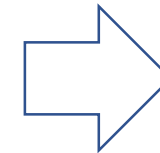
Private Data  
*Customer profile*  
*Claims history*

Public Data  
*Map data*  
*Social Media*

3<sup>rd</sup> Party Data  
*White/Blackspots*  
*Weather data*

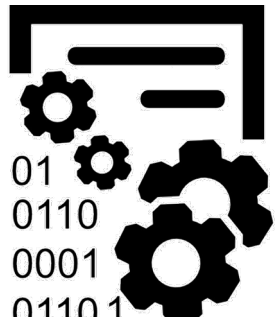
Employees  
*Market Knowledge*  
*Risk knowledge*

New data  
*Family size*



**Complete  
Dataset**

# Data Science (2)



**Complete  
Dataset**



**Data Scientist**

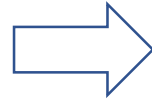
- Identify relationships within data
- Translate business concepts into math questions
- Determine best mathematical method
- Build Model/Algorithm to attempt predicting future
- Integrate to Business



**Model**  
*Customer  
risk model*

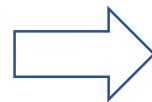
# Use and Deployment (3)

Static  
Implementation



- Algorithms used in “one off campaign”
- Cross-sell home insurance from motor portfolio

Dynamic  
implementation



Agents

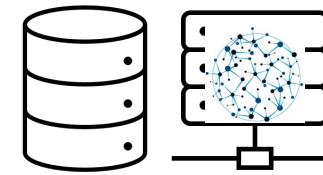


Customers

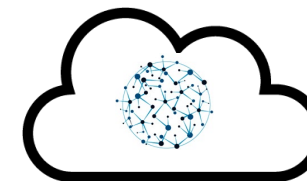
Query



Resp.



IT platform/cloud



- Algorithms run on servers/cloud
- Model is updated as data grows
- Integrates with other IT systems
- Personal pricing of an insurance policy



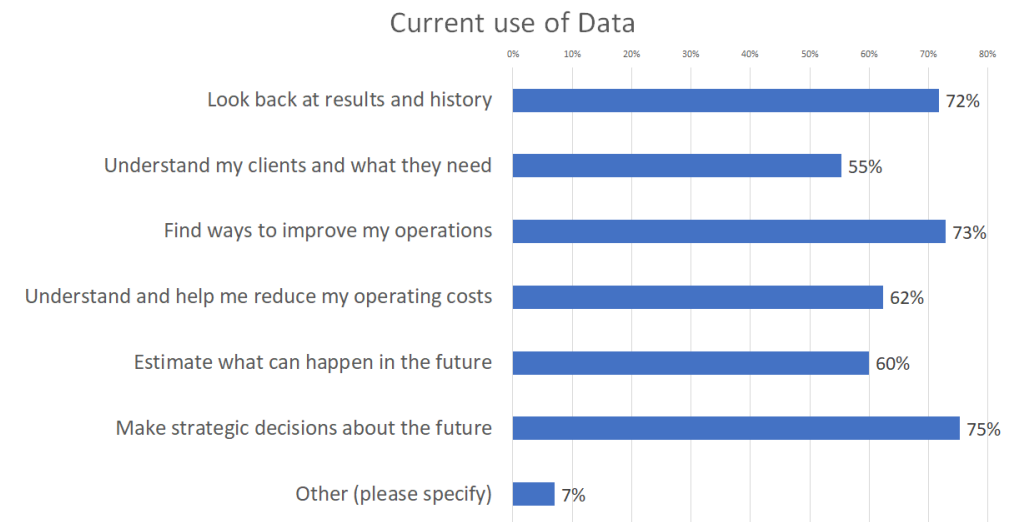
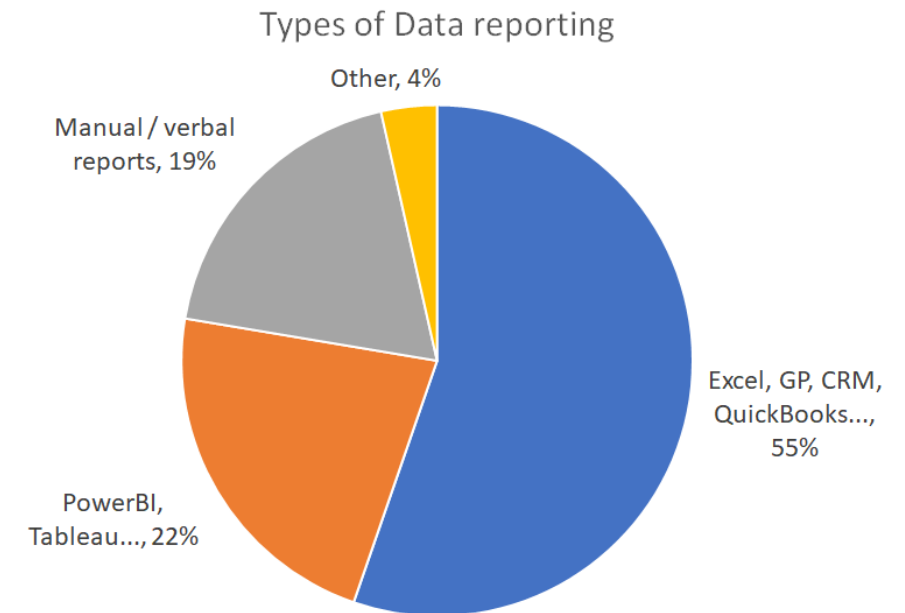
- ✓ FIs in Caribbean need to catch up to compete and survive
- ✓ “New Normal” = more Data-Driven approach to business
- ✓ Data Science is used at all levels of your organization
- ✓ Data Science is complex but taking the first step is easy
  - Highly competent resources available
  - Local = dedicated and budget friendly

# Survey – Preliminary results

Data is analysed using MS Excel & accounting tools

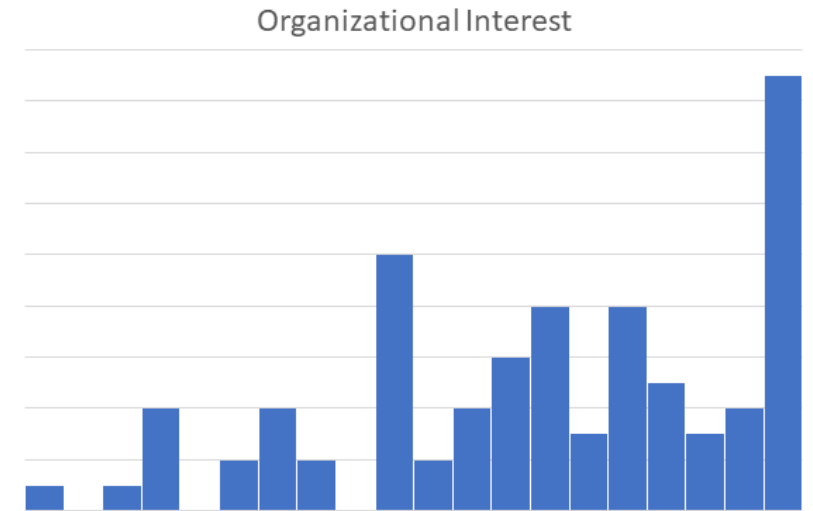
Data is predominantly used for

- Make strategic decisions
- Improve operations
- Review past results

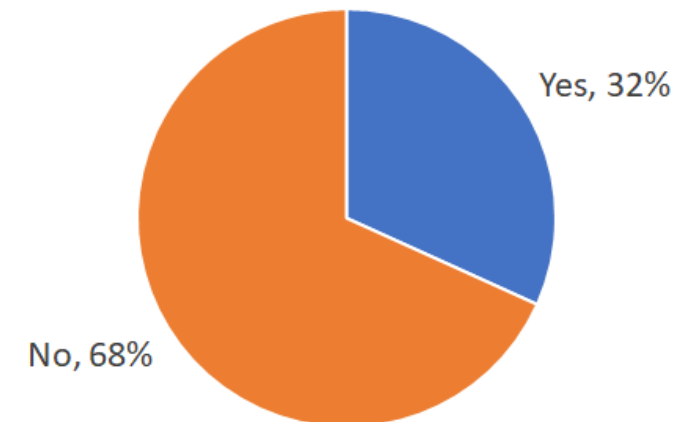


# Interest & Adoption

- Very high interest in Data Science by organizations
- But low adoption of resources

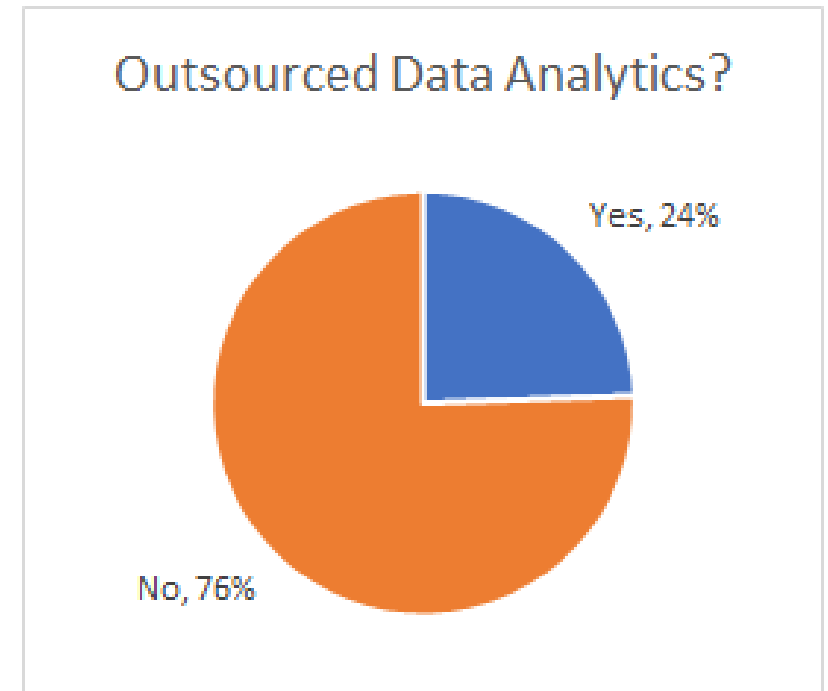
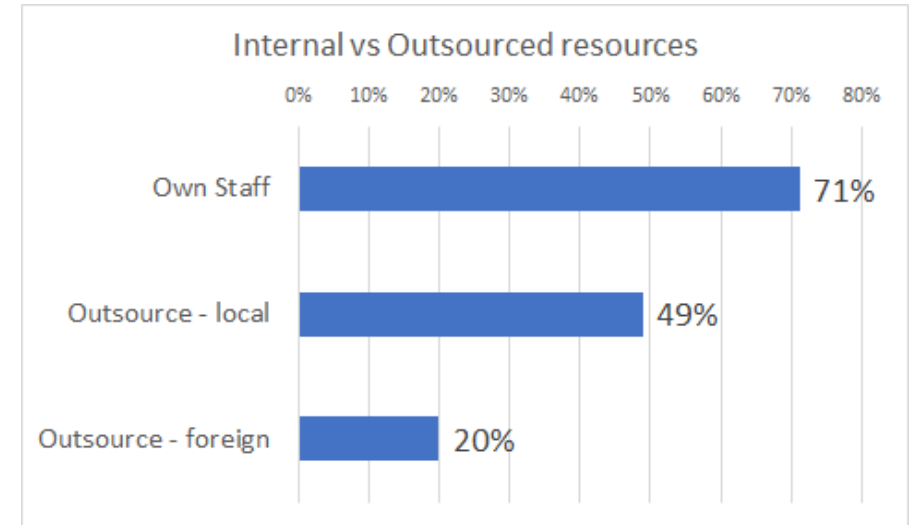


Org has Data Analytics team?



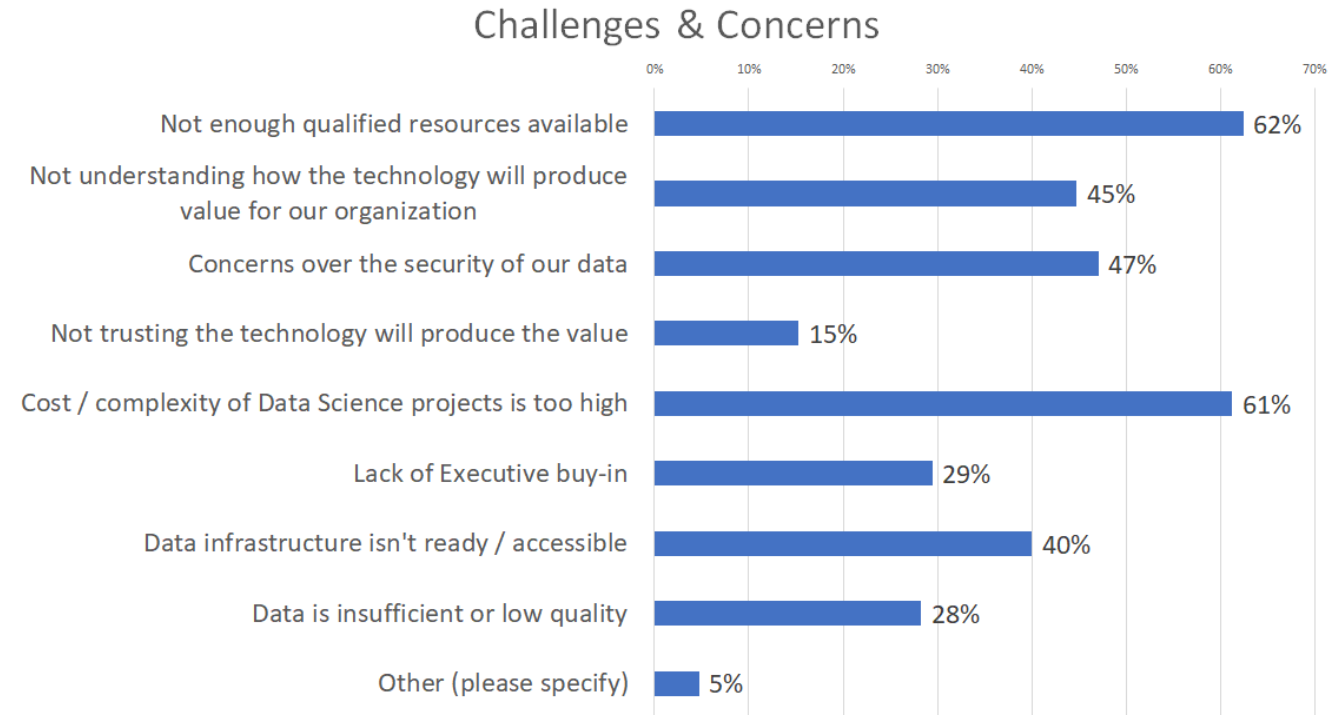
# Outsourcing

- Concerns over foreign resources
- Preference for local resources and own staff



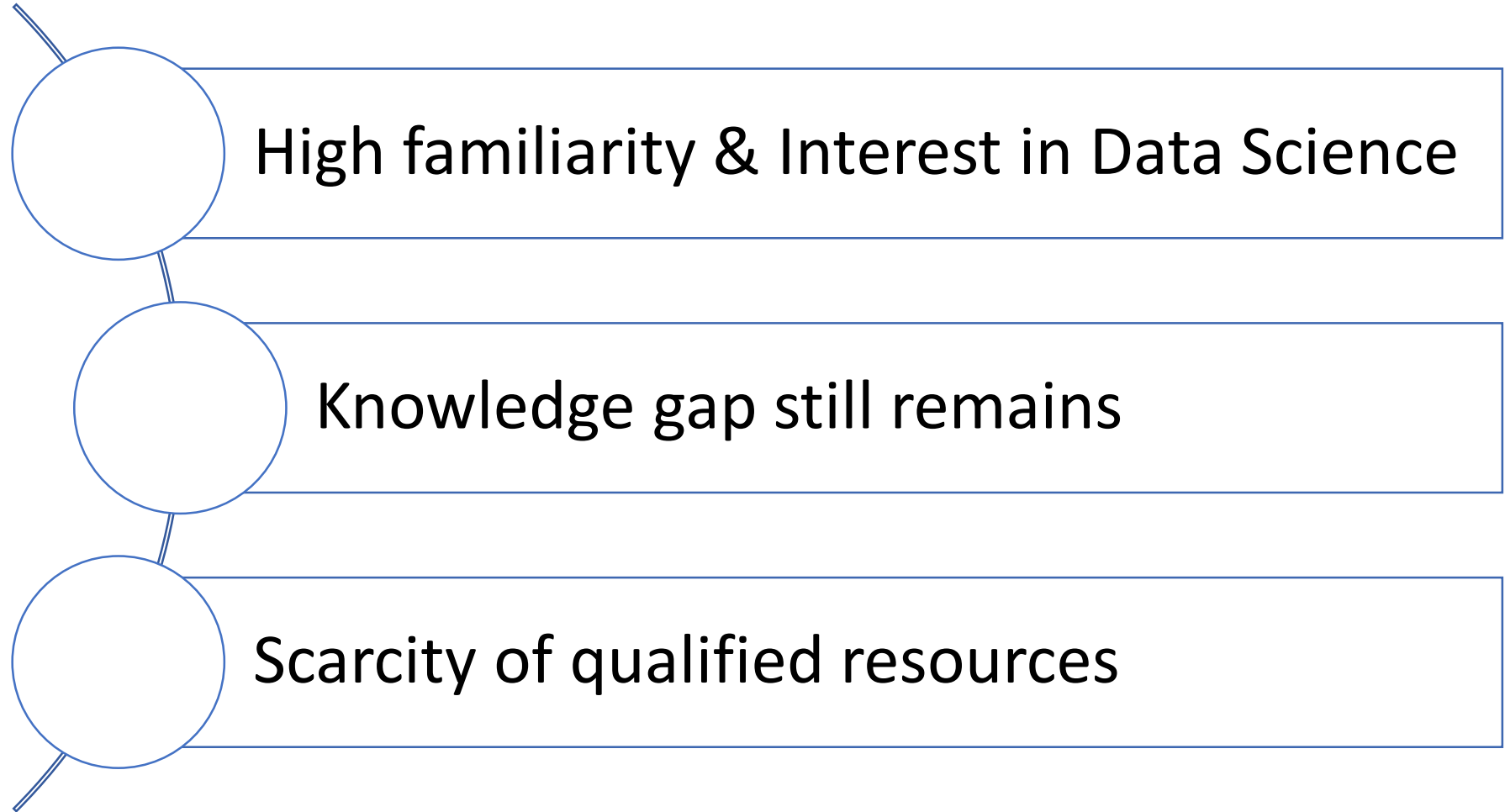
# Challenges - Concerns

- Cost & Complexity
- Availability of resources
- ROI & Data security questions



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# Survey – Summary



Thank you



**DIV Solutions**  
Analytics for Business

- Free Business Consultation
- Custom Data Science Solution
- Advisory Services – Data Strategy
- Human Resourcing

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Questions?



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