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# MUTUAL DATA POOLS & FRAUD DETECTION

CLAUDIA FAH  
FRAUD ANALYTICS



# Are you the lucky Capetonian who won R232 million in the #Powerball draw?

WESTERN CAPE / 20 FEBRUARY 2019, 11:27AM / SIPHELELE DLUDLA





From: Information Desk <info@euroonlinelottery.com>

Subject: EU / Commonwealth Lottery Promotions

Your email address was selected to claim the sum of \$ 500,000.00 in the 2011 European lottery.

To claim your prize, please contact our agent in Lagos, Nigeria.

Contact person: Mr. Marshall Ellis e-mail: [marshallellis11@live.com](mailto:marshallellis11@live.com)

Phone: +2348036954742

Congratulations!

Vincent Kilkenny (Coordinator)

MY NAME IS MR RICHARDSON WILLIAMS,  
RICA GENERAL ACCOUNTANT  
MANAGER.WE ARE APOLOGISE FOR THE  
INCONVENIENCE THE NATIONAL  
LOTTERIES BOARD IN CONJUNCTION  
WITH NELSON MANDELA CHARITY  
FOUNDATION . SAID THAT, YOU HAVE TO  
DONATE R7050, FOR S.A CHARITY  
FOUNDATION BOARD, TO IMPROVE THE  
STANDARD OF NELSON MANDELA  
CHARITY FOUNDATION, BEFORE YOUR  
WINNING CHEQUE OF R450,000:00,WILL  
BE DELIVERED INTO HOME ADDRESS  
[XXXXXX]. CONTACT MR JOHN OWEN ON  
(021) 827 0804 PAYMENT INSTRUCTION  
. THANKS MR RICHARDSONS WILLIAMS.  
NOTE THAT THIS IS THE LAST PAYMENT.

(SA MOTORS CLAIM DEPT)YOUR  
BRAND NEW VW POLO CAR IS  
READY TO BE DISPATCH TO YOUR  
ADDRESS BUT YOU HAVE TO  
MAKE A DEPOSIT OF R2,988 FOR  
INSURANCE AND DELIVERY  
CHARGES. FOR PAYMENT  
CONTACT OUR OFFICE ON  
(021-828-1850). THANKS.

18:12 MMS

Thu, 30/07/2015

Omo Washing Powder  
Has Awarded You  
With.R200.000(Ref No  
01SA).For Claim Contact  
Mr.David On  
[0765655052](tel:0765655052).

20:36

TOYOTA COMPANY  
HAVE REWARDED YOU  
WITH A BRAND NEW  
TOYOTA YARIS CAR  
[2015](#),REF  
NO;SA25LK.FOR CLIAM  
CONTACT US VIA  
[0723389163](tel:0723389163).

21:00

Enter message

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## ECONOMIC CRIME

**77%** of SA Organisations have  
experienced some form of economic crime

Economic crime continues  
to be the most pervasive  
crime impacting SA's  
organisations

Trevor Hills, Forensic Services Leader for PwC Southern Africa

# CRIMINAL ENTERPRISE

**CREATE TOOLS**

**HARVEST INFO**

**RECRUITMENT**

**FILTER TARGETS**

**TRAINING**

**EXECUTE PAYMENTS**

**DISTRIBUTE**

**LAUNDER MONEY**

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## WHAT CRIMINALS COUNT ON

AUTHORISED PUSH  
PAYMENT  
**BENEFICIARIES**  
ARE GENERALLY  
**UNVERIFIED**

AFTER THE MONEY  
HAS **LEFT YOUR**  
**BANK**, YOU HAVE  
**NO WAY OF**  
**DEFENDING** YOUR  
CUSTOMER

**INSIDERS THREATS**  
**BYPASS CONTROLS**  
AND EMPLOYEES  
ARE JUST AS  
VULNERABLE AS  
CUSTOMERS



50 000 : 1

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**1.5 BILLION  
APP  
PAYMENTS**

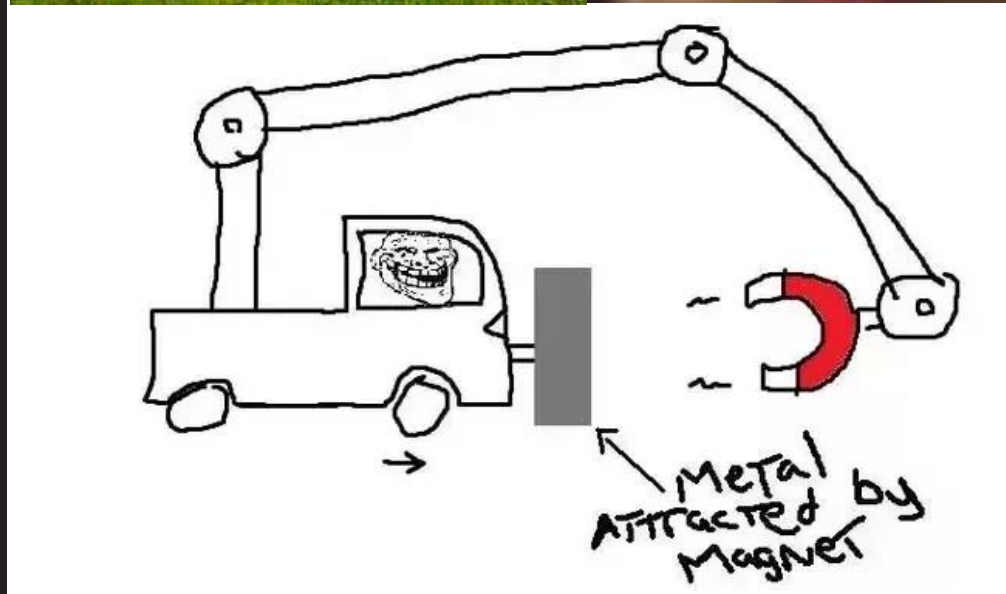
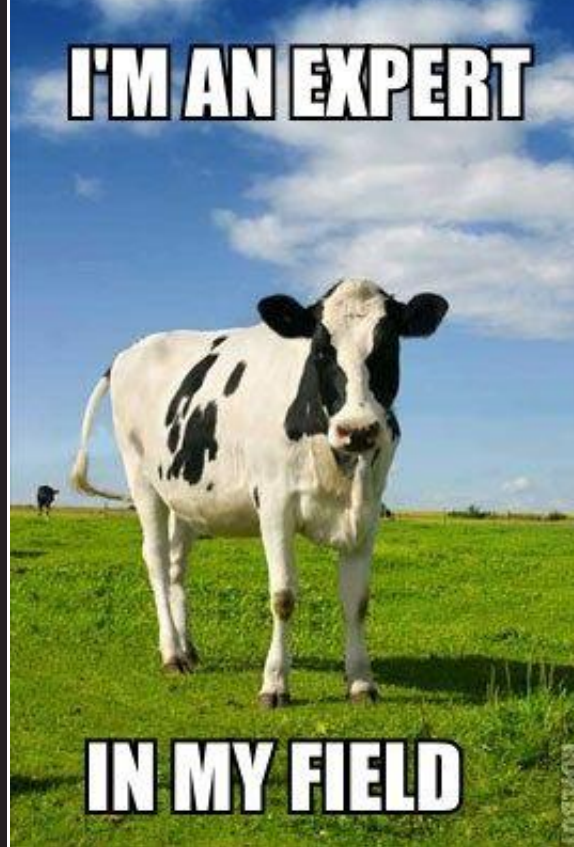
**30  
THOUSAND  
AT RISK**





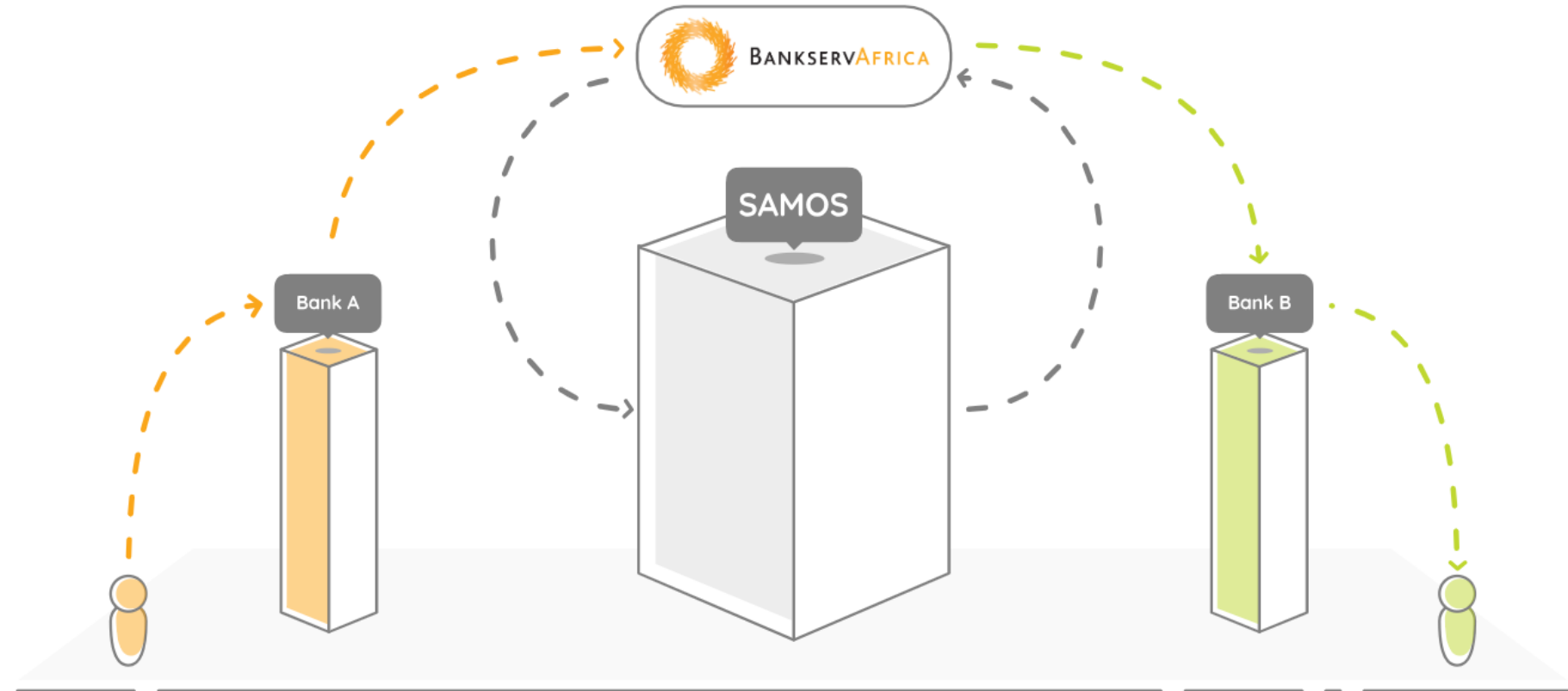
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# FINDING THE NEEDLE IN THE HAYSTACK



OVER 3  
BILLION  
PAYMENTS

R11  
TRILLION



key payment systems at maximum cost-efficiency and minimum complexity

seamless interbank switching, clearing and settlement

ensuring increased interoperability between banks

OVER 3  
BILLION  
VIEWS



YouTube

Search



#PSY #싸이 #GANGNAMSTYLE

PSY - GANGNAM STYLE(강남스타일) M/V

3,308,059,740 views



15M



2.1M



SHARE



SAVE



MUTUAL  
SUCCESS

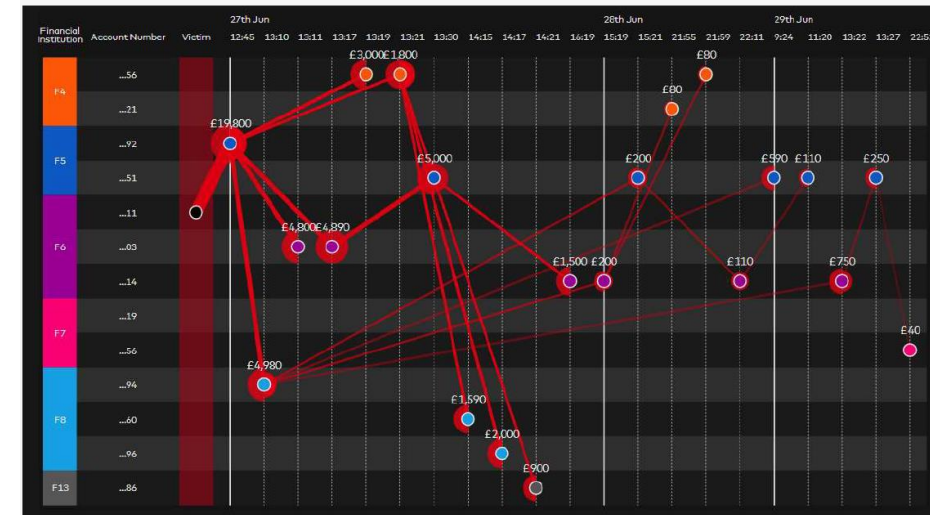


**ActionFraud**  
National Fraud & Cyber Crime Reporting Centre  
 [actionfraud.police.uk](https://actionfraud.police.uk) 

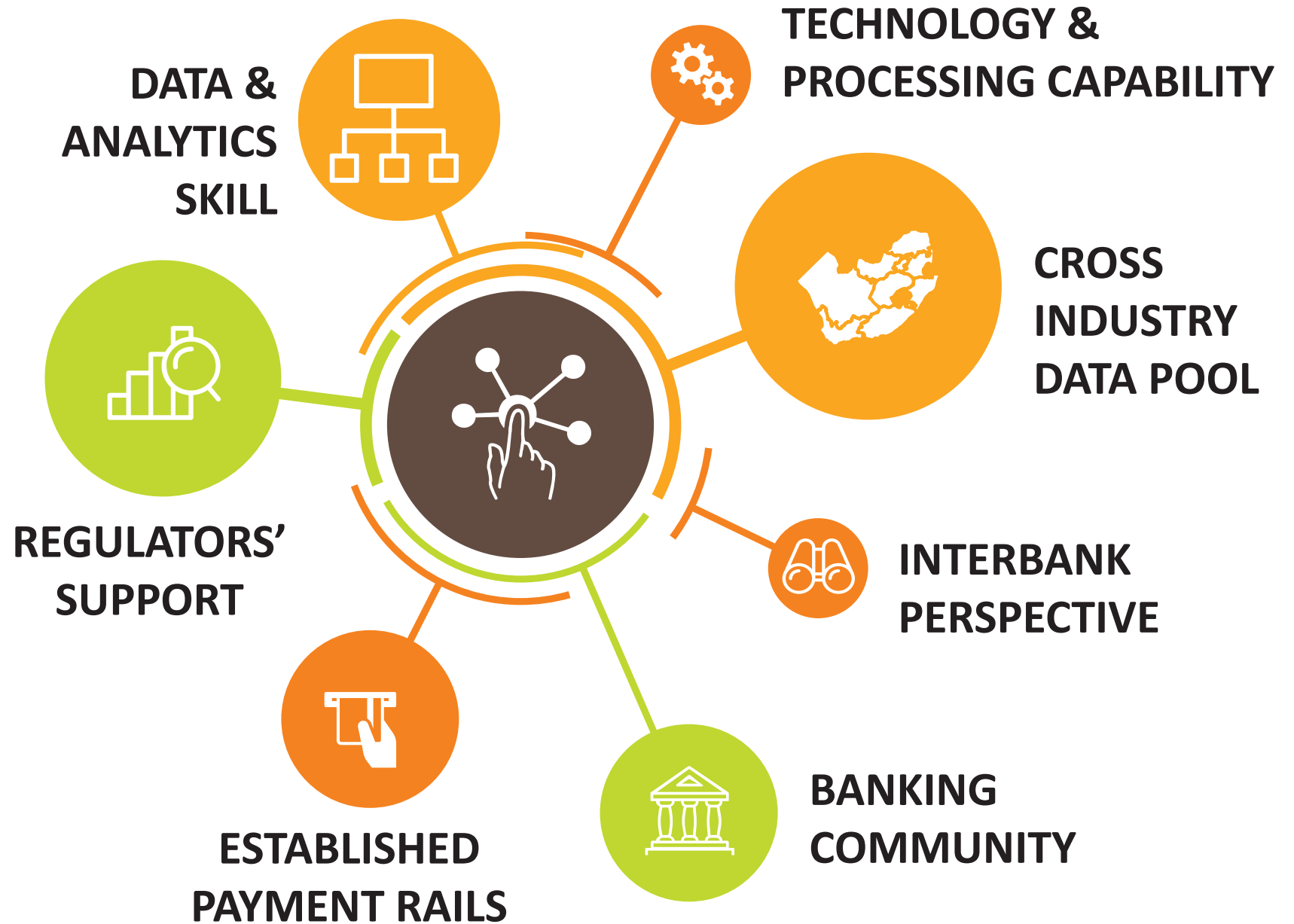
SA3RIC

**ifb** | Insurance  
Fraud  
Bureau

 **pay.uk**



# KEY STRENGTHS



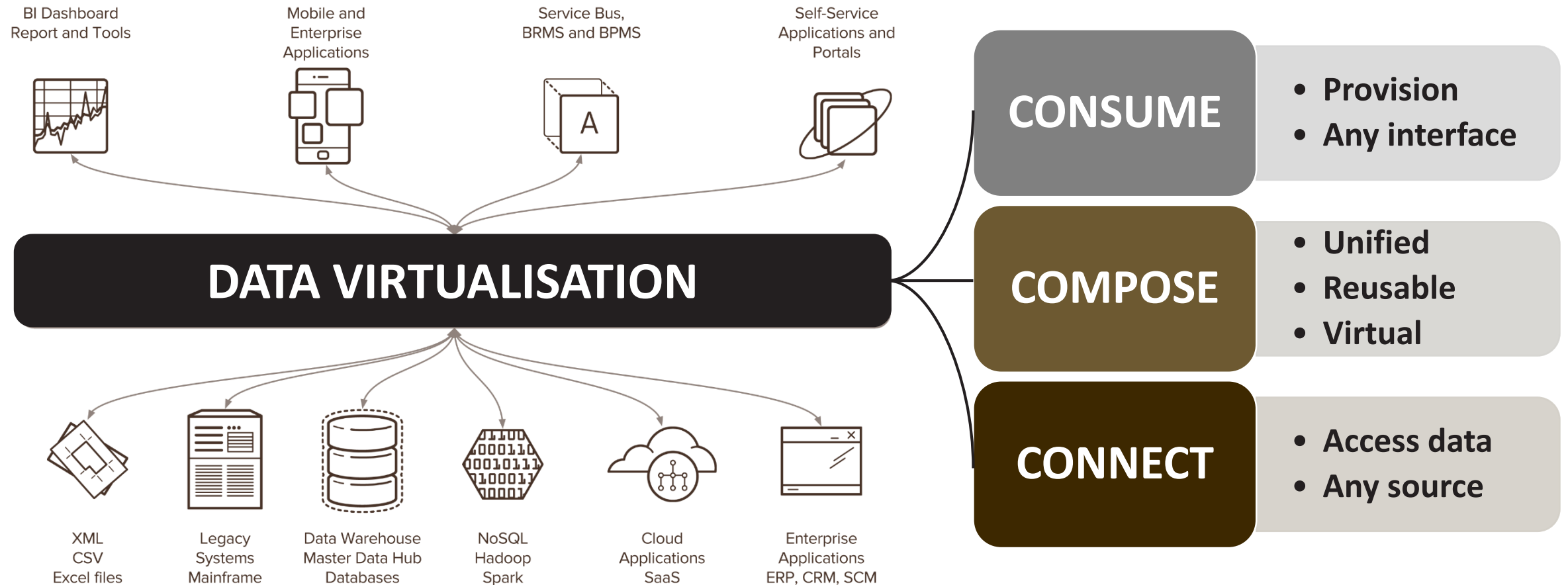


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# Critical Enablers for Analytics

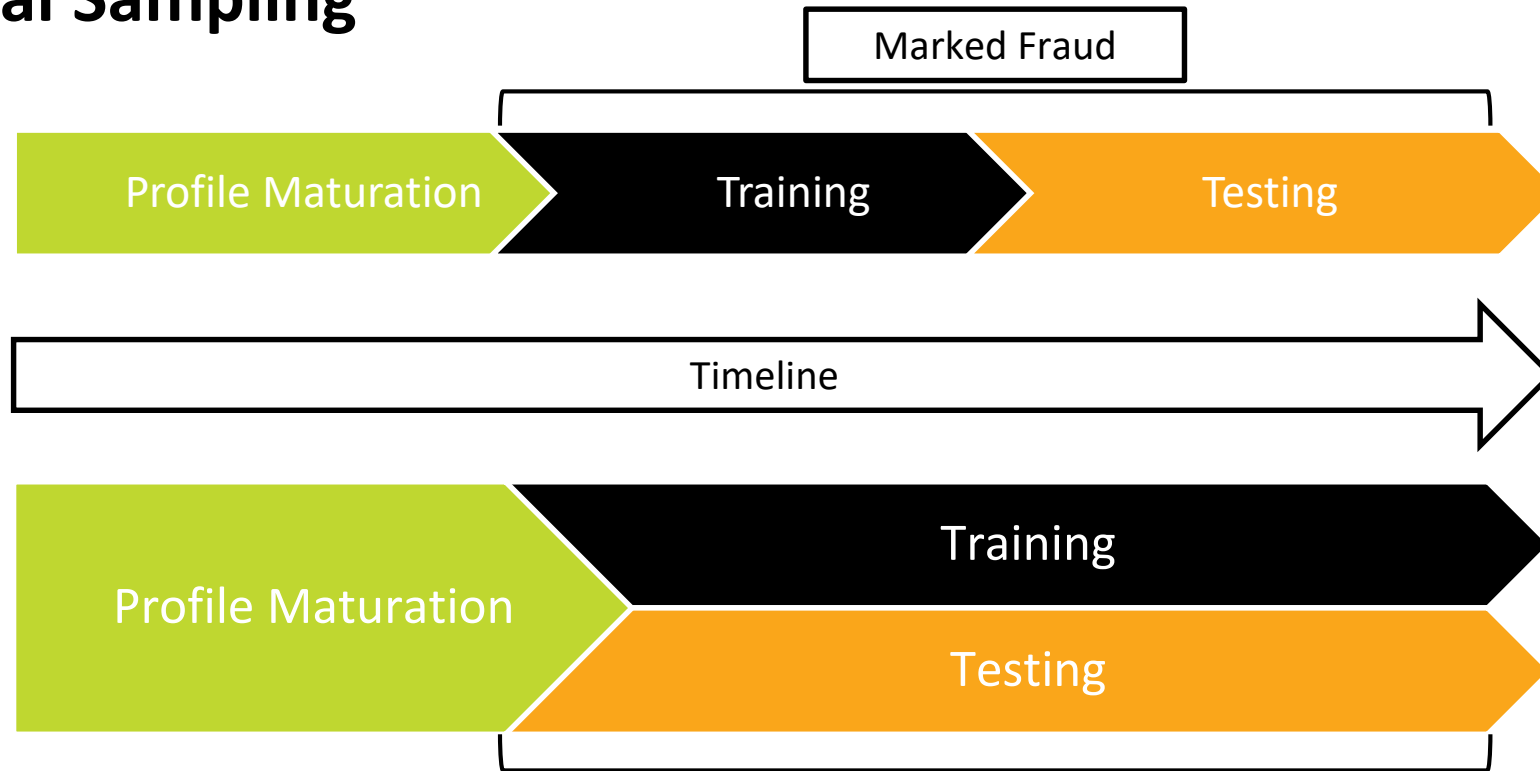


# DATA INTEGRATION



# DATA PREP – THIS TAKES TIME!

## Vertical Sampling



## Horizontal Sampling

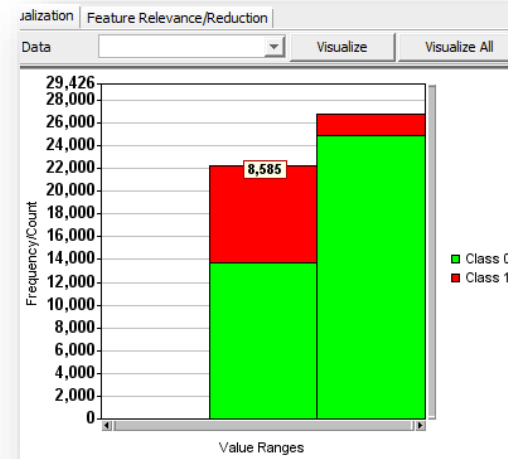
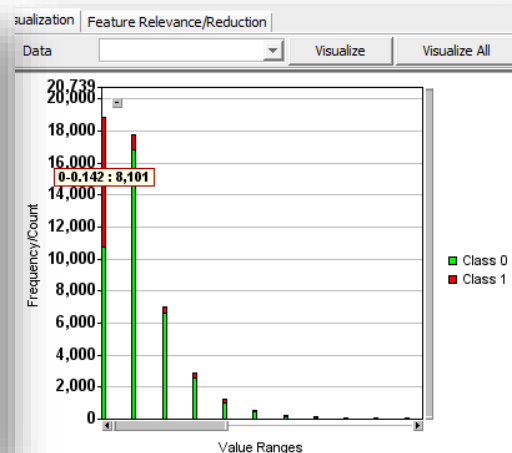
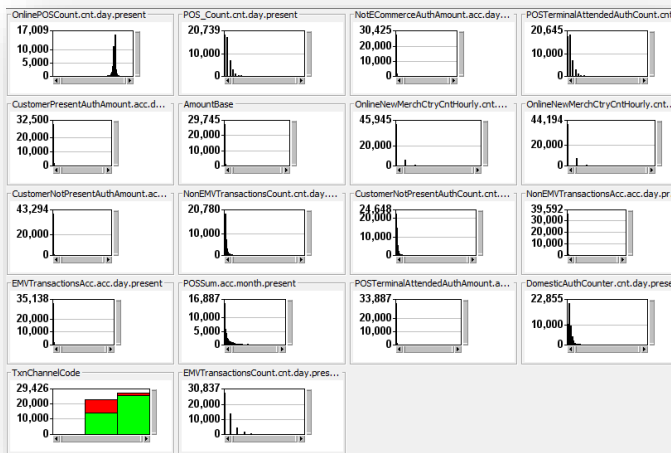
Marked Fraud

# FEATURE RELEVANCE

Determine whether data fields and behavioural profiles are useful in predicting fraud.  
Gain insight into how fraud is distributed across individual fields.

## INFORMATION GAIN SCORING CHI-SQUARED SCORING

## – ENTROPY REDUCTION – INDEPENDENCE



Select Goal For Attribute Selection: **Fraud**

Select Feature Evaluator: **InfoGainFeatureEvaluator**

Select Search Method: **RankSearch**

AttributeName	Score
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Selection Ranking Results

Select Training File:

Compute Relevance



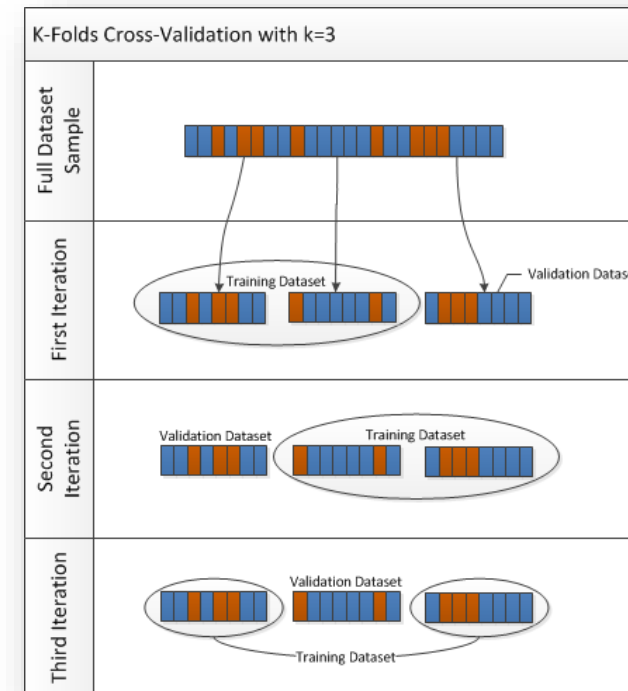
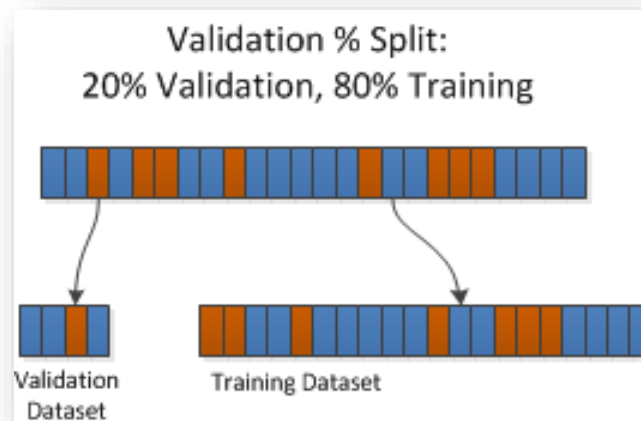
# PARAMETER OPTIMIZATION

Discover better parameter values for existing detection scenarios.

Find alternative parameter values to reduce false positives and/or increase true positive alerts.

## COST OF COMPUTATION – NUMBER OF FOLDS

Training/Validation Method	<input type="radio"/> Validation Training K-Folds	<input type="text"/>
	<input type="radio"/> Validation % Split	<input type="text"/>
	<input checked="" type="radio"/> Validation Entire Data	







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# CONTACT US

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