

From Data to Insight : Sharing Experiences Generating Insight From Data Analytics and Visual Storytelling

SENIN, 13 JULI 2020 | 16.00 - 18.00 WIB



**Antonius
Gunadi**

Chief Audit Executive
PT Bank CIMB Niaga Tbk

MODERATOR :



**Martin
Rahadi, CIA**

Volunteer IIA Indonesia
Managing Partner
Internal Audit Consulting

Audit Analytics CIMB Niaga

13th Jul 2020

FOR IIA INDONESIA
MEMBER CIRCULATION

CIMB Niaga at a Glance

2nd largest private bank
in Indonesia

Largest Foreign Owned
Bank in Indonesia

97.9% owned by
CIMB Group

AAA Pefindo
Rating

Universal Banking
Proposition
Wholesale

(Corporate and SME), Consumer,
and Investment Banking

A Wide Range of Networks and Channels

492 branches; 100+ cities; 4,000+ ATMs, CDMs and SSTs

Three Digital Channels at your service

Menyempurnakan
Pengalaman Internet Banking Anda

#SemakinMudah

Virtual Card Number
Bayar Tagihan
Redeem Poin Xtra
Transfer
Apply & Invest

My Assets
My Cash Flow
My Goals

OCTO Clicks
BY CIMB NIAGA

LEBIH BARU

Akses di www.octoclicks.co.id

STEP-IN TO THE WORLD OF OCTO!

CREATE YOUR ACCOUNT.

BizChannel@CIMB

Bisa dilakukan di mana saja dan kapan saja

#dirumahaja gak akan jadi masalah

Kejar Mimpi

- Transfer ke sesama CIMB Niaga maupun Bank lain baik Domestik maupun Internasional (Rupiah & Valas)
- Pembayaran Tagihan & Pajak
- Pembayaran Gaji / Payroll
- Pembukaan Deposito Berjangka
- LC & BG Issuance



CIMB Niaga Coverage

SUMATERA

63 Branches + 4 Kas Mobil

- DI Aceh : 2
- Sumatera Utara : 26 + 1 KM
- Sumatera Barat : 5
- Riau : 7 + 1 KM
- Kepulauan Riau : 10 + 1 KM
- Jambi : 3
- Sumatera Selatan : 5 + 1 KM
- Bangka Belitung : 1
- Lampung : 4
- Bengkulu : N/A

KALIMANTAN

18 Branches + 1 Kas Mobil

- Kalimantan Barat : 3
- Kalimantan Timur : 9+1 KM
- Kalimantan Tengah : 1
- Kalimantan Selatan : 4
- Kalimantan Utara : 1

SULAWESI

12 Branches + 1 Kas Mobil

- Sulawesi Utara : 3
- Sulawesi Selatan : 8+1 KM
- Sulawesi Tenggara : 1
- Sulawesi Tengah : N/A
- Sulawesi Barat : N/A
- Gorontalo : N/A

MALUKU & PAPUA

7 Branches

- Maluku : 1
- Papua : 6
- Maluku Utara : N/A
- Papua Barat : N/A

DKI JAKARTA

126 Branches + 8 Kas Mobil

- Jakarta Barat : 29+ 1 KM
- Jakarta Timur : 11 + 2 KM
- Jakarta Pusat : 25 + 2 KM
- Jakarta Selatan : 42 + 1 KM
- Jakarta Utara : 19 + 1 KM

JAVA

224 Branches + 11 Kas Mobil

- Banten : 25 + 2 KM
- Jawa Barat : 66 + 3 KM
- Jawa Tengah : 52 + 1 KM
- DI Yogya : 11 + 1 KM
- Jawa Timur : 70 + 4 KM

BALI & NUSRA

15 Branches + 2 Kas Mobil

- Bali : 12 + 1 KM
- NTB : 2 + 1 KM
- NTT : 1

INDONESIA

492 Branches Bankwide

Including :

- 27 Digital Lounges
- 27 Kas Mobil
- 27 Syariah Branches

Data Analytics Profile



Abdul Azip

Head of Data Science

Skills:

- SQL
- Python
- ACL
- Tableau



Aisijah Kuswardani

Head of Data Engineering

Skills:

- SQL
- Python
- ACL, IDEA, Tableau
- Certified Ethical Hacker (**CEH**)

Hartono Agus

Head of IT Audit

Skills:

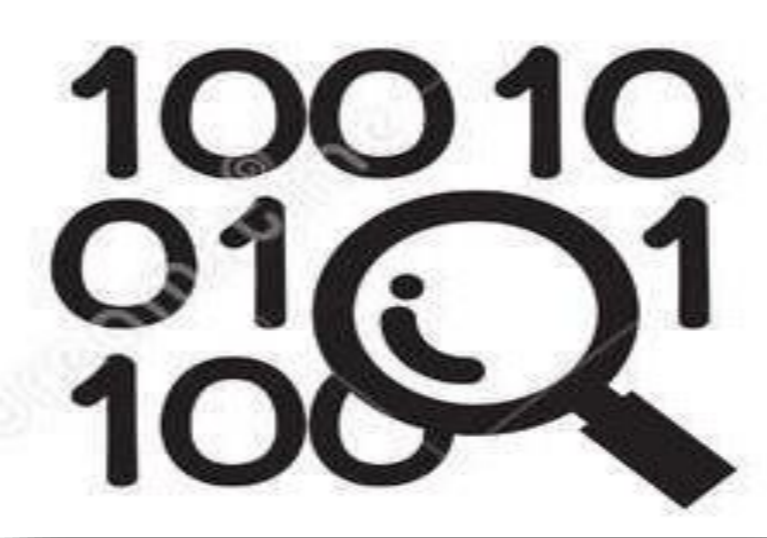
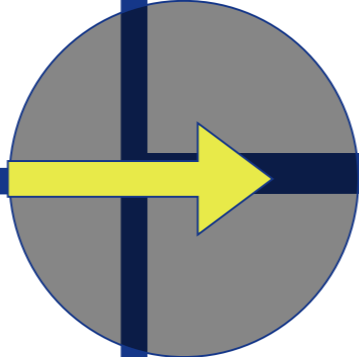
- Certified Internal Auditor (**CIA**),
- Certified Information Systems Auditor (**CISA**)
- Certified Information Systems Security Professional (**CISSP**)
- Certified in Risk & Information Systems Control (**CRISC**)
- Certified in Risk Management Assurance (**CRMA**)
- Certified Ethical Hacker (**CEH**)



Branch Audit :

From Document Checking to Data Analytics

Current branch audit has its limitations :



Analyze big data for branches transaction with certain parameters to identify alerts and known fraud behavioral patterns

1. It can analyze 100% of the branches network simultaneously.
2. The analytics parameters can be customized to focus on particular conditions, for examples: Relationship Manager/ Branch Manager who has not been rotated for a period of time, Time Deposit break to different customers, high frequency of transactions for customers over 55 years old age.
3. Quicker follow up. It can be generated on monthly basis with one month time gap from 1P (M+1).
4. Alerts are also shared to Risk Control

Auditing in The Digital Age with Data

Evolving our audit approach: How can we face the challenge of addressing the rapid expansion in the amount and range of data that today's organizations produce

Traditional Approach

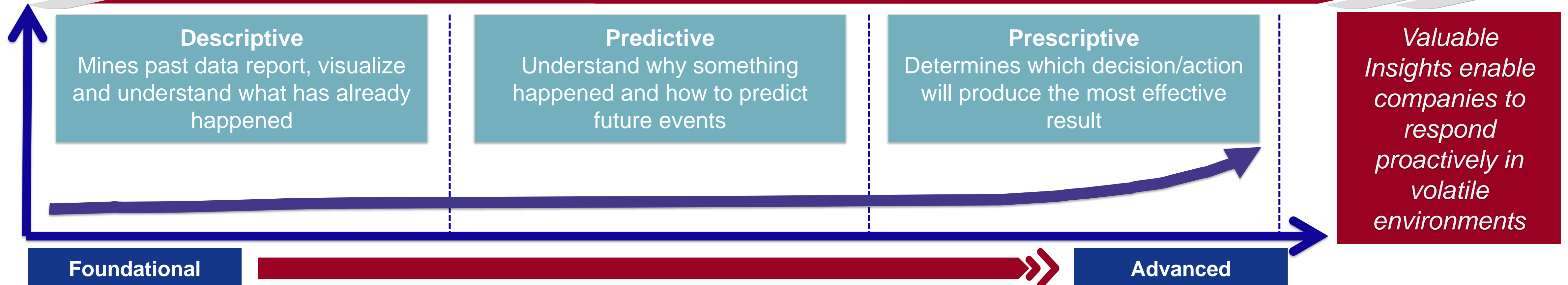
- ◆ Sample testing
- ◆ Manual substantive testing (e.g. Document Checking)
- ◆ Professional judgement and assumptions

Digital Shift

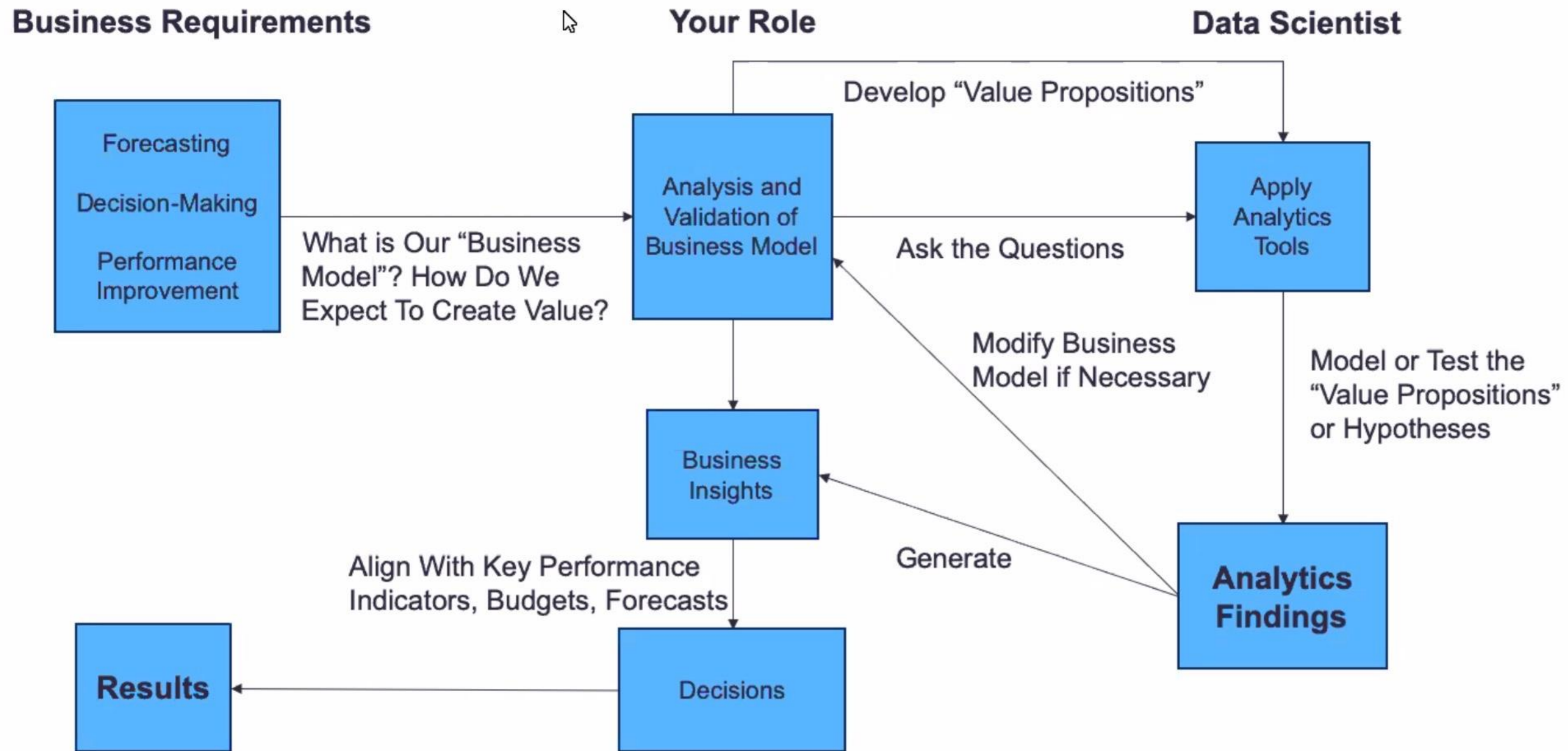
- ◆ Improved assurance based on review of **full population**
- ◆ Deepening understanding of **end-to-end process**
- ◆ Identify **anomalies** and **trends**



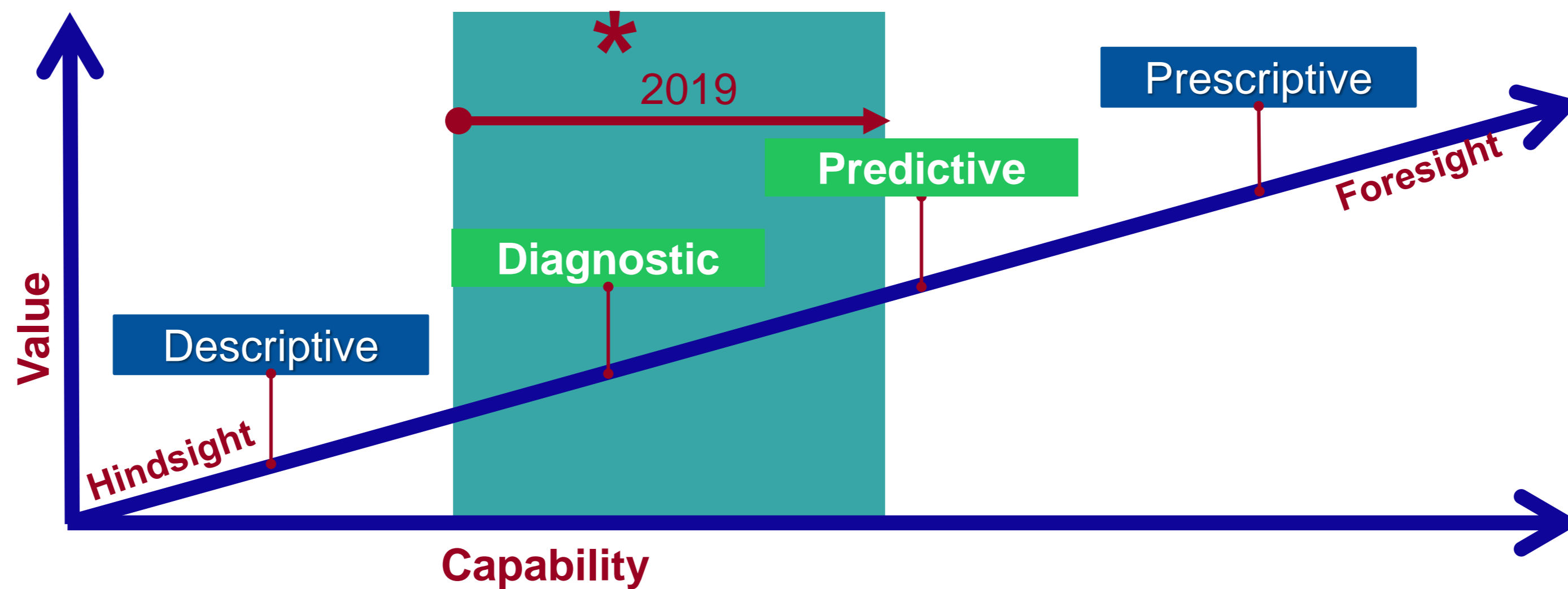
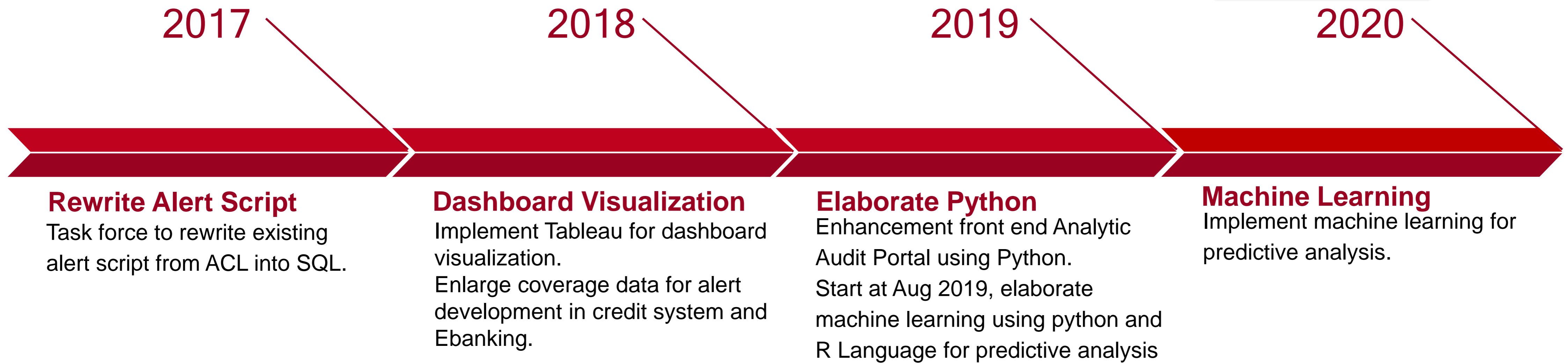
Fully embedding analytics in IA is a journey that we are just beginning.....



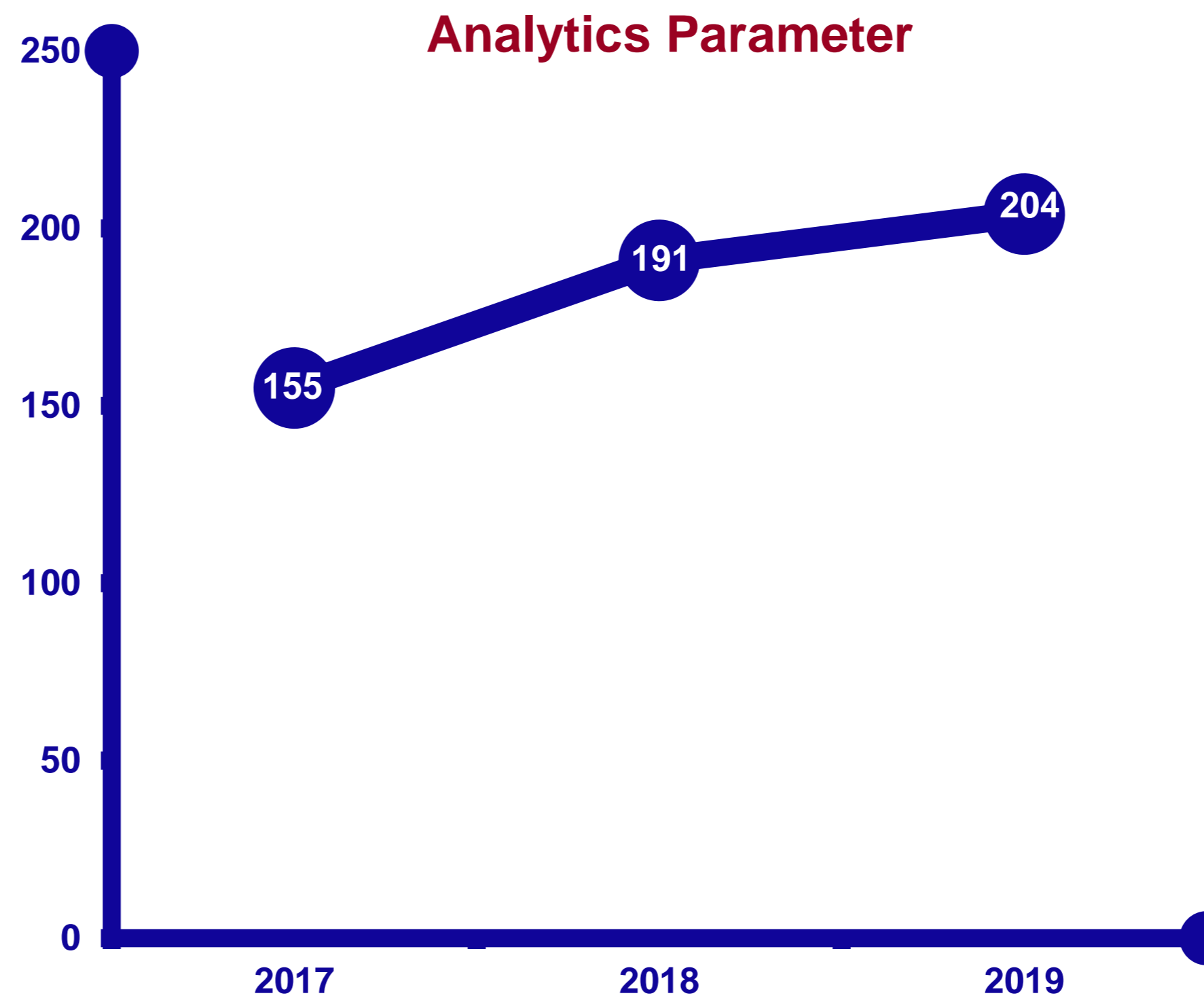
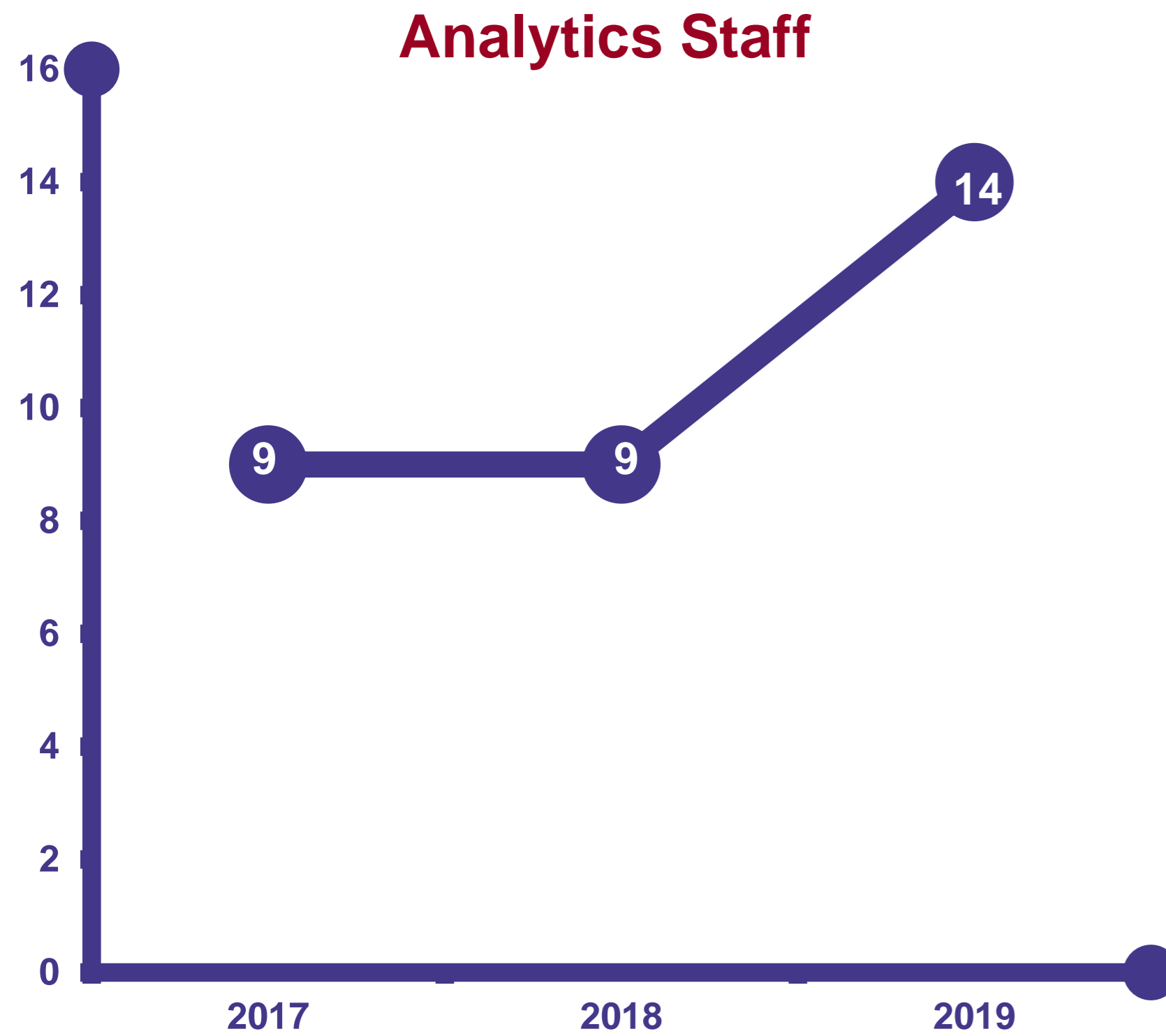
Business Analytics Schematics



CIMB Niaga Analytics Audit Journey



CIMB Niaga Analytics Audit



Training

- Audit
- Report Writing
- Communication & Personal Branding
- SQL
- Tableau
- Python
- R Language

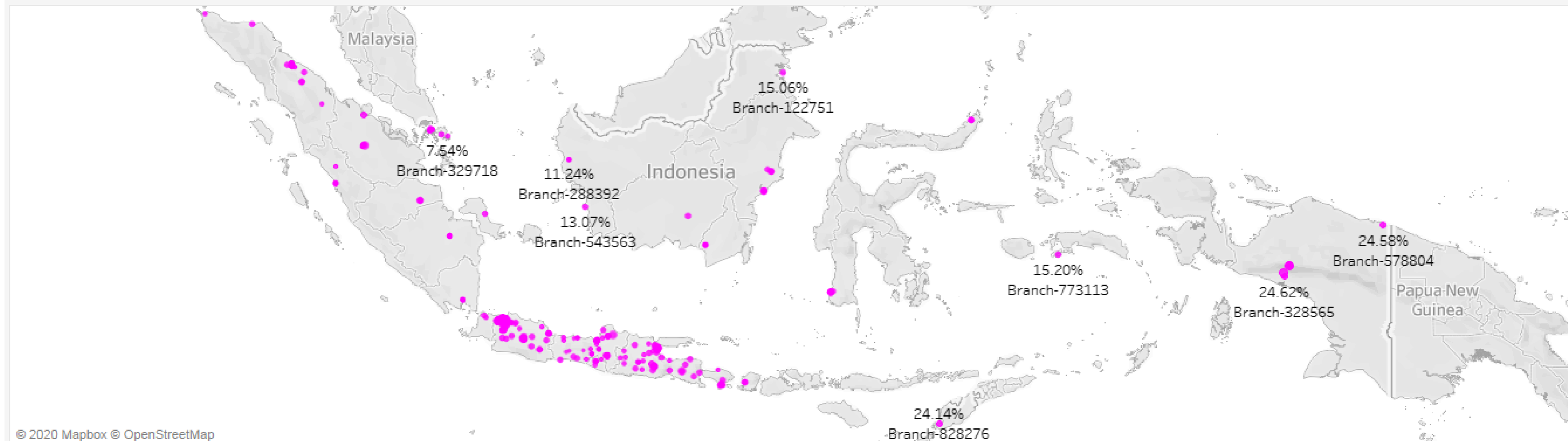
Job	2017	2018	2019
Data Engineer	2	2	4
Data Science	6	6	9

Analytics Audit Dashboard

Branch Assessment Top 10 Parameter (Dummy)

As of Dec 2019

	Alert Branch	Populate Bankwide	Ratio Bankwide
Digit tanggal lahir pada KTP tidak sesuai	86,023	2,498,398	3.44%
Ibu Rumah Tangga BO Tidak Diisi	12,283	2,498,398	0.49%
Nasabah Memiliki Nomor HP Sama	31,742	2,498,398	1.27%
Nasabah Memiliki Nomor Identitas dan Tanggal Lahir Sama (Status Aktif)	33,172	2,498,398	1.33%
NPWP Blank	43,502	2,498,398	1.74%
Pelajar BO Tidak Diisi	30,211	2,498,398	1.21%
Pembukaan Rekening Service Charge Code Waive	38,012	1,455,507	2.61%
Perorangan WNI Identitas Non-KTP / SIM / AL / PP / KK / SL / KA	19,236	2,498,398	0.77%
Tempat Lahir < 5 Digit	31,481	2,498,398	1.26%
Usia < 17 Tahun Jenis ID KTP / SIM	11,353	2,498,398	0.45%

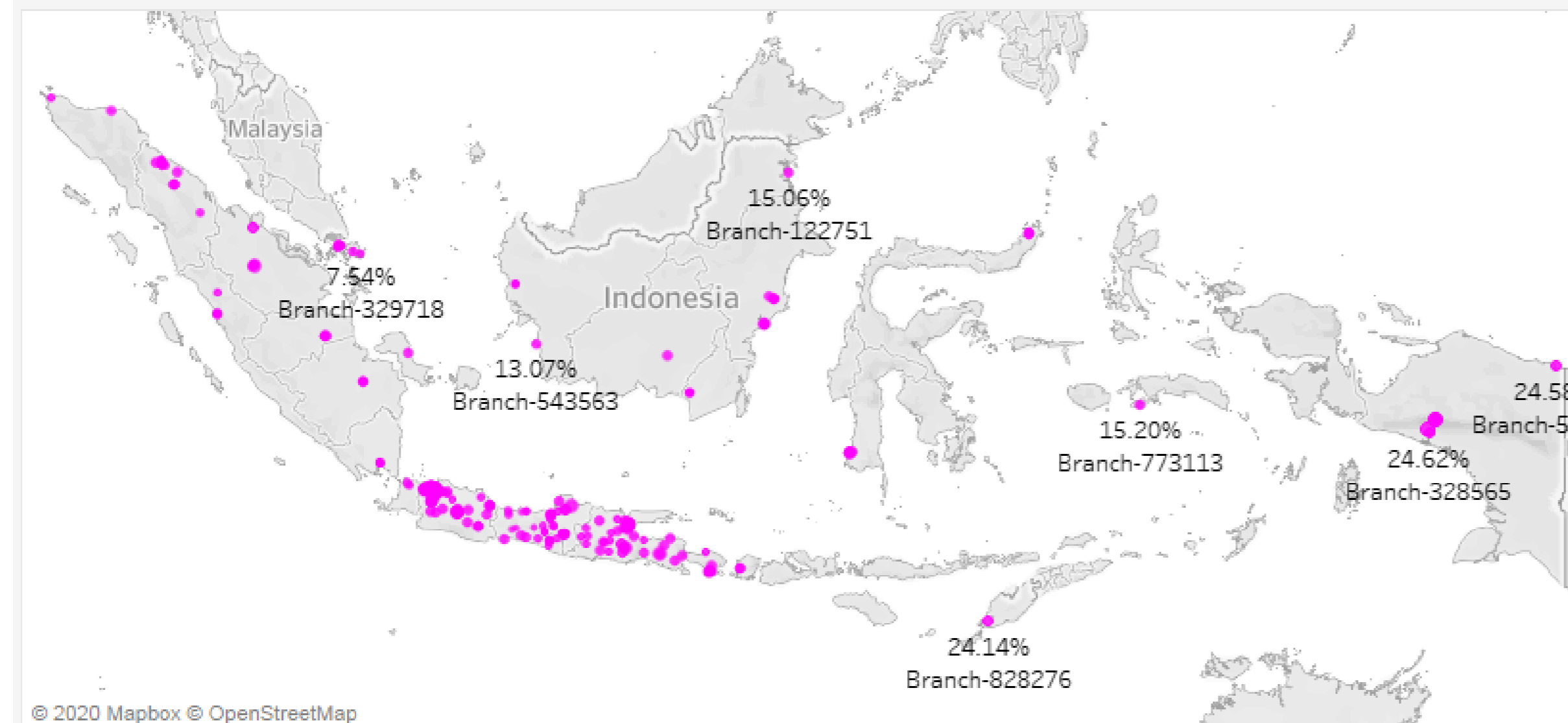


Analytics Audit Dashboard

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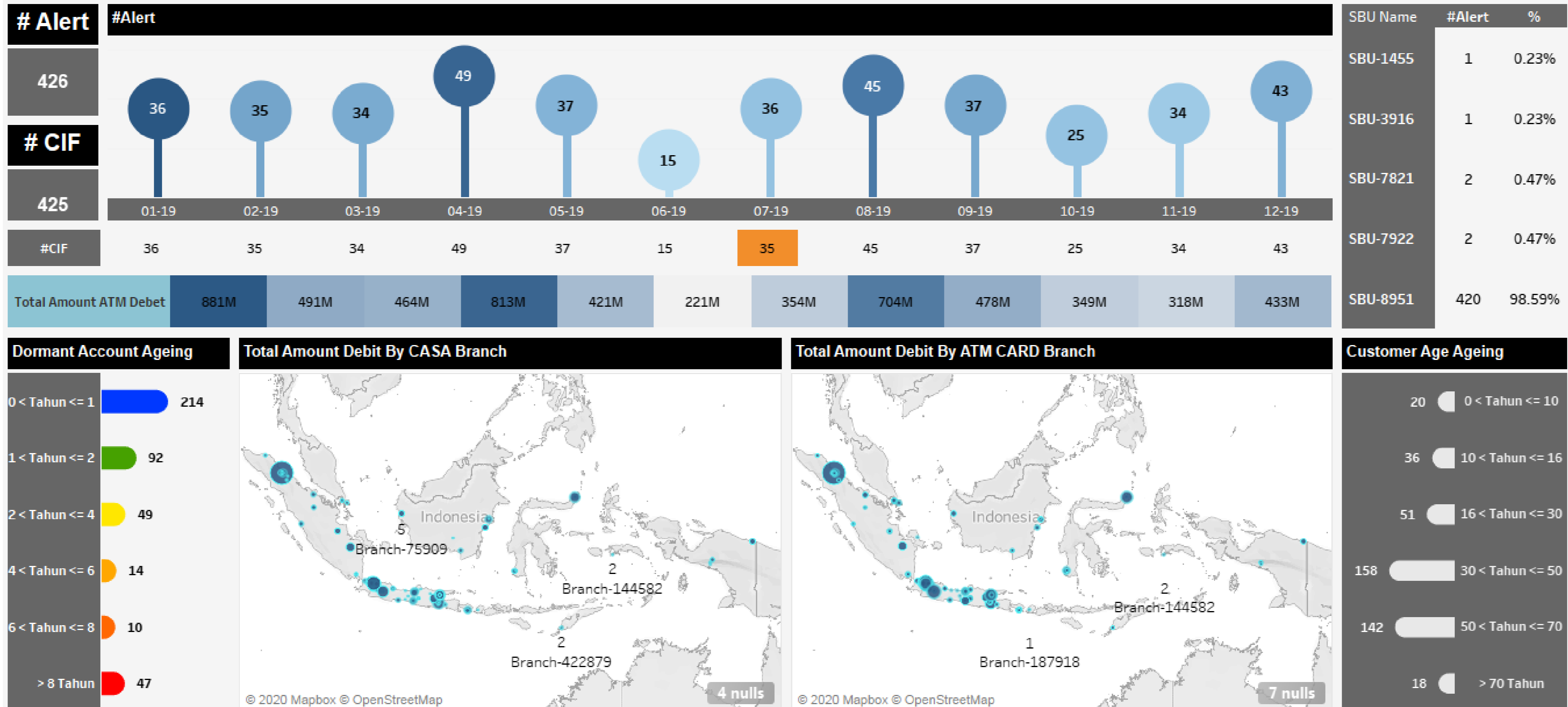


Branch Name	Ratio Alert By Branch	Alert Branch
Branch-776550	86.60%	116
Branch-206130	78.16%	805
Branch-973750	54.12%	88
Branch-833954	43.64%	114
Branch-913748	40.19%	125
Branch-441989	38.24%	9
Branch-549003	38.16%	1,387
Branch-859544	36.80%	872
Branch-60995	35.37%	896
Branch-635105	32.91%	138
Branch-719211	32.38%	1,014
Branch-691790	30.91%	45
Branch-638488	30.73%	44
Branch-257524	29.95%	21
Branch-733080	28.07%	500
Branch-395346	27.65%	168
Branch-849575	27.53%	1,212
Branch-651299	26.23%	83
Branch-273102	25.91%	104
Branch-645149	25.83%	3,203
Branch-410039	25.58%	113
Branch-388643	25.31%	4,268
Branch-163132	25.30%	49
Branch-335455	25.02%	160
Branch-796985	25.00%	0
Branch-343696	24.87%	32
Branch-328565	24.62%	576
Branch-544397	24.62%	86

Analytics Audit Dashboard

Pendaftaran ATM Rekening Dormant Saldo Berkurang \geq IDR 10 Juta (Dummy)

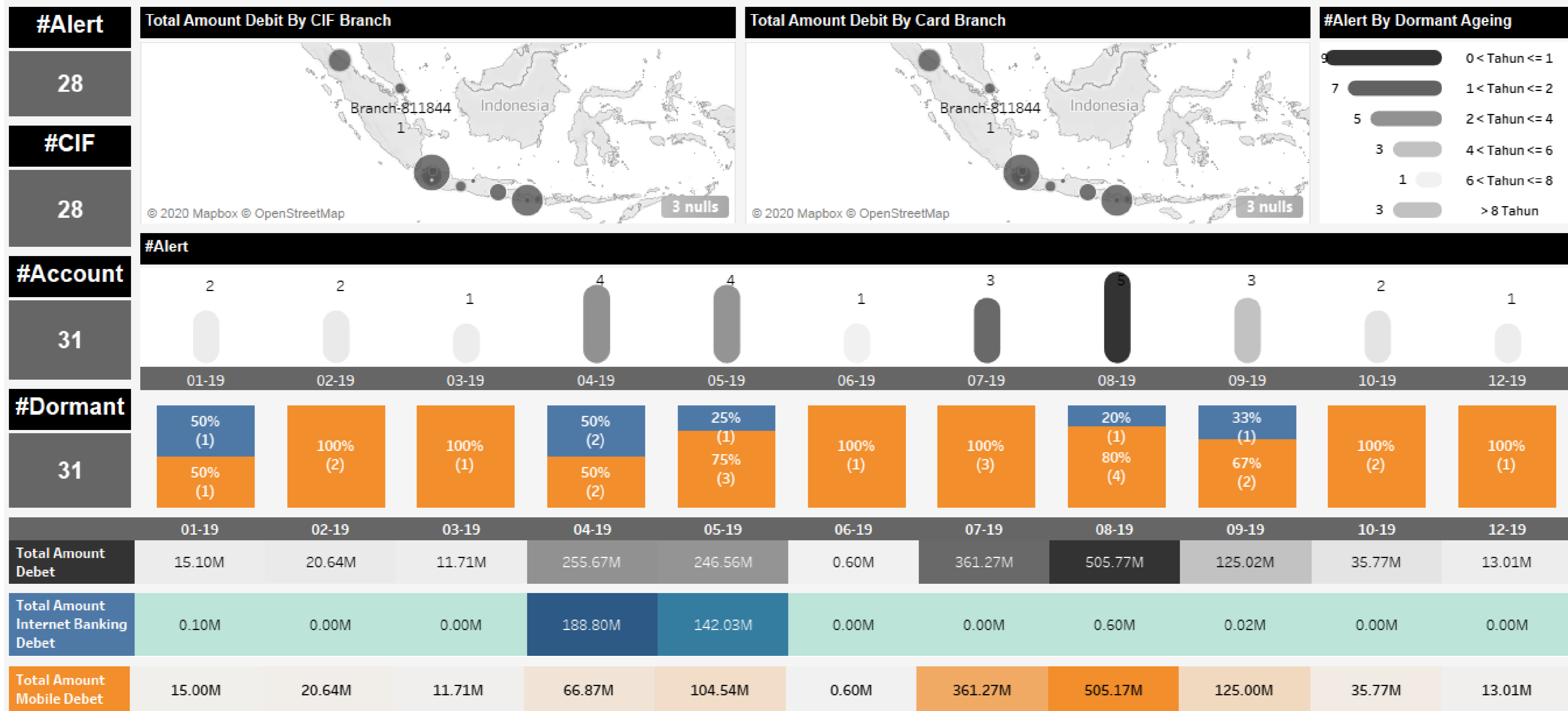
January 31, 2019-December 31, 2019



Analytics Audit Dashboard

Pendaftaran Internet Banking/Mobile Rekening Dormant Saldo Berkurang >= 10 Juta IDR (Dummy)

January 31, 2019-December 31, 2019

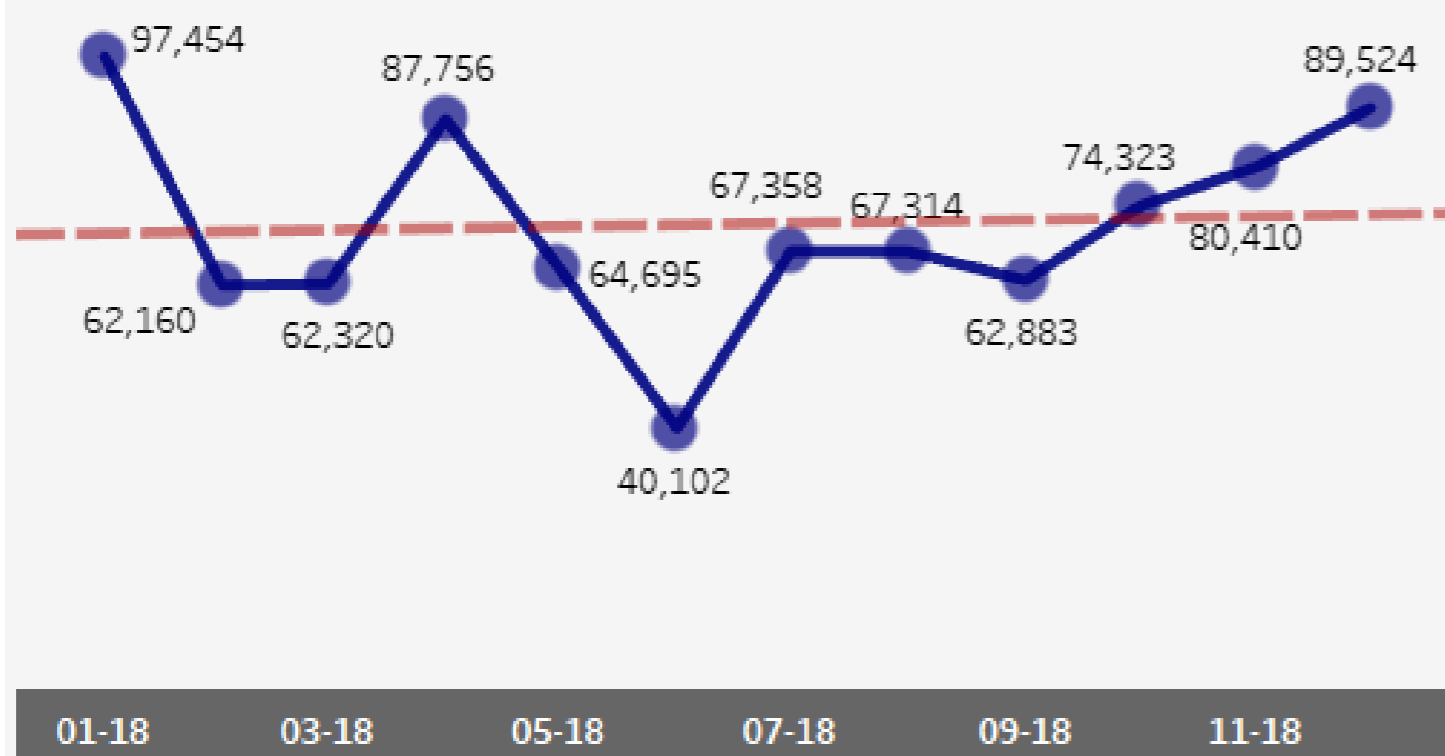


Analytics Audit Dashboard

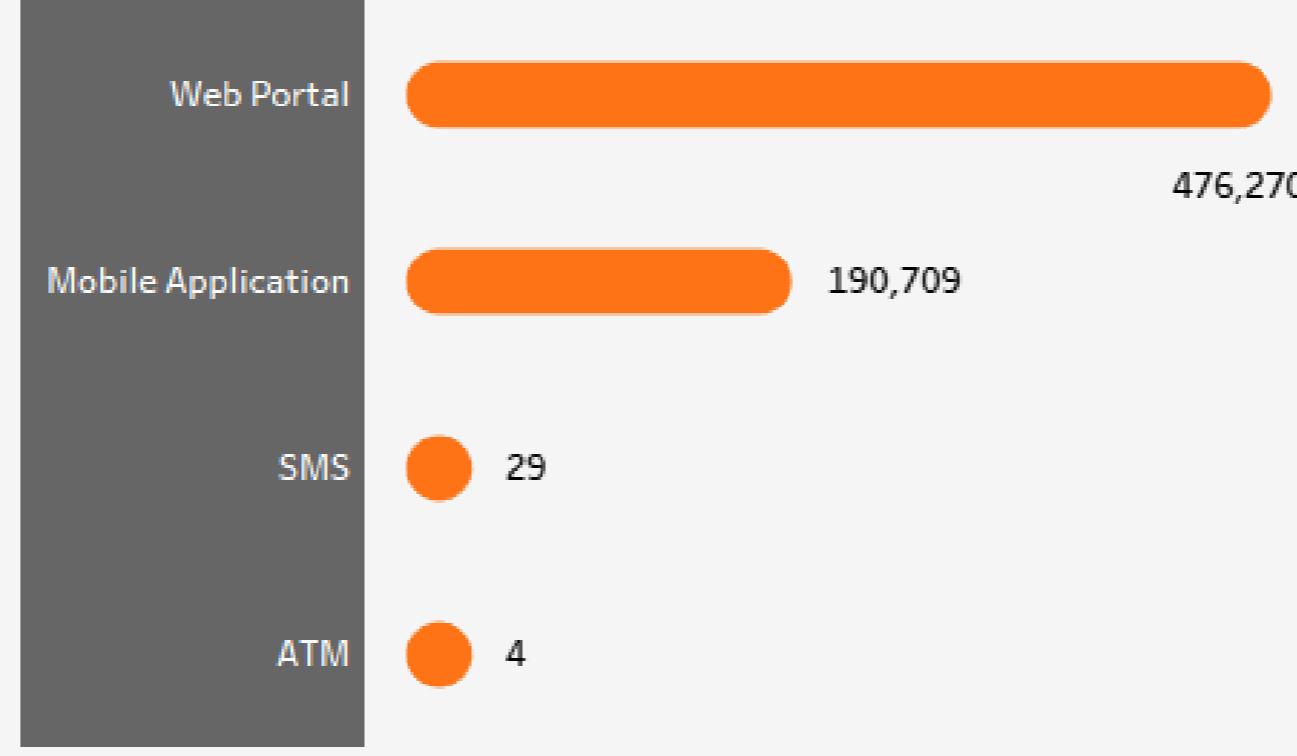
Mobile Banking 2018 Dashboard (Dummy)

January 1, 2018-December 31, 2018

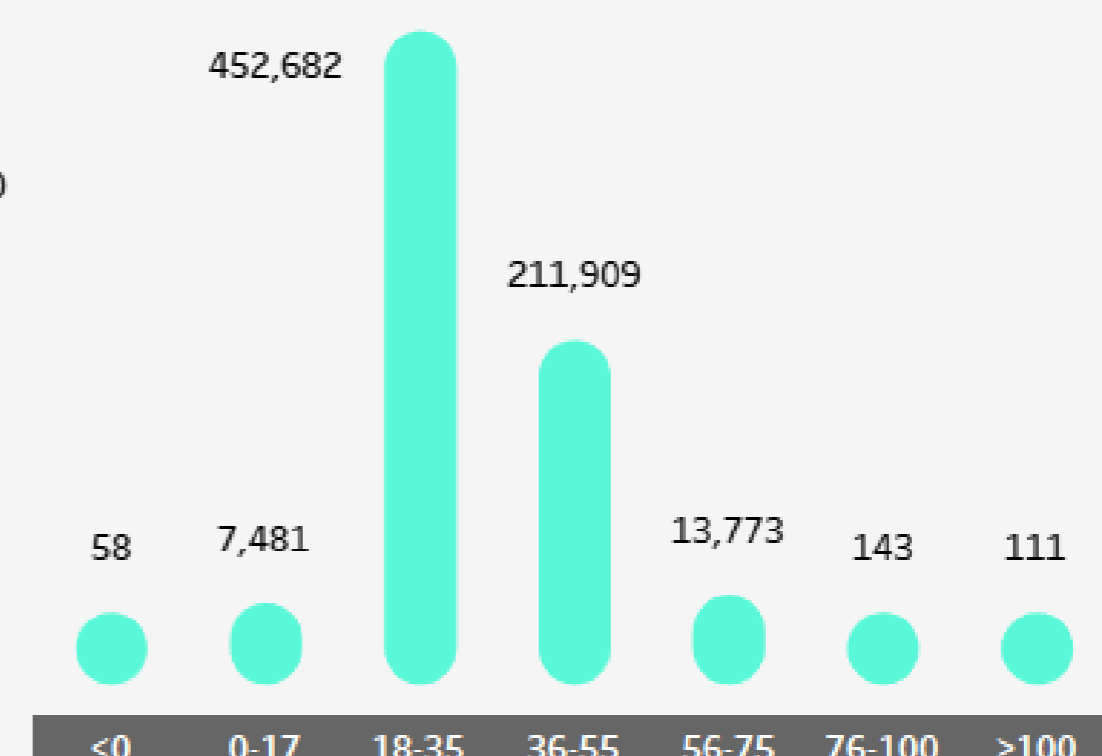
#Registration



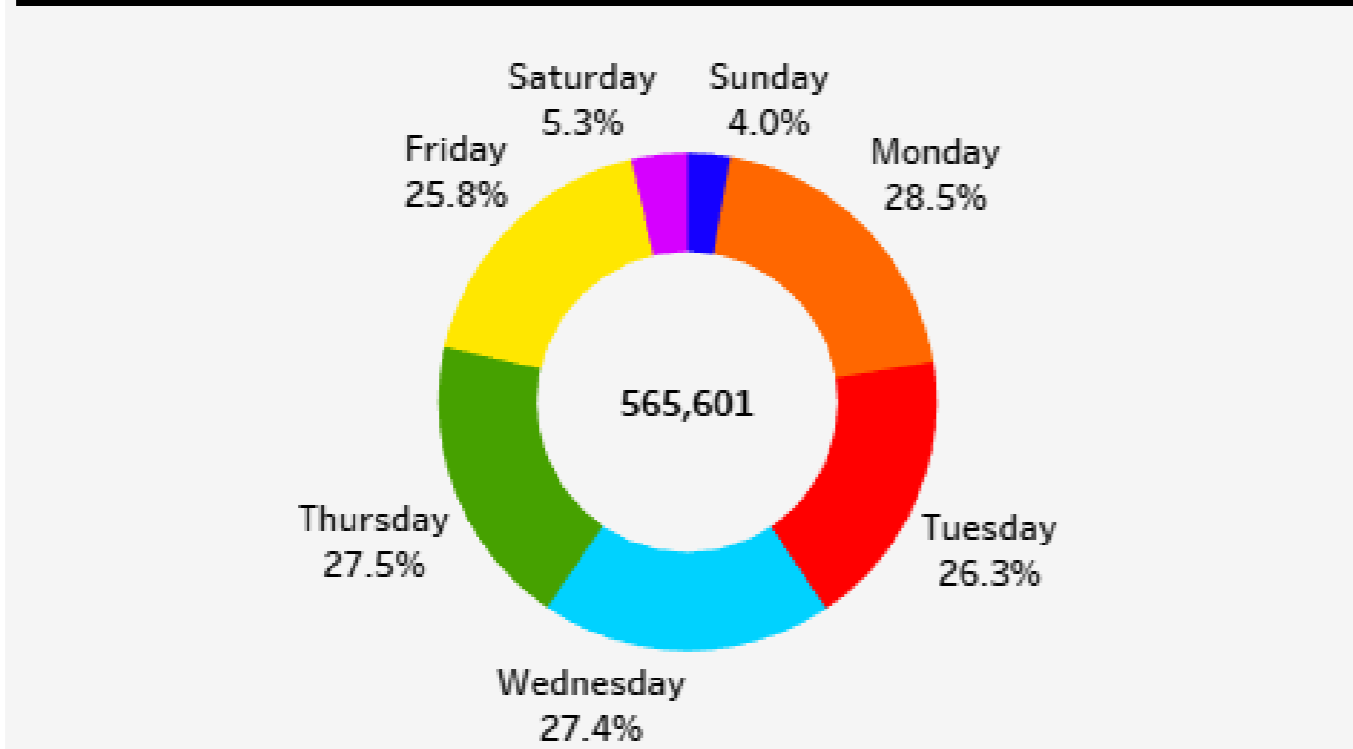
Registration Channel



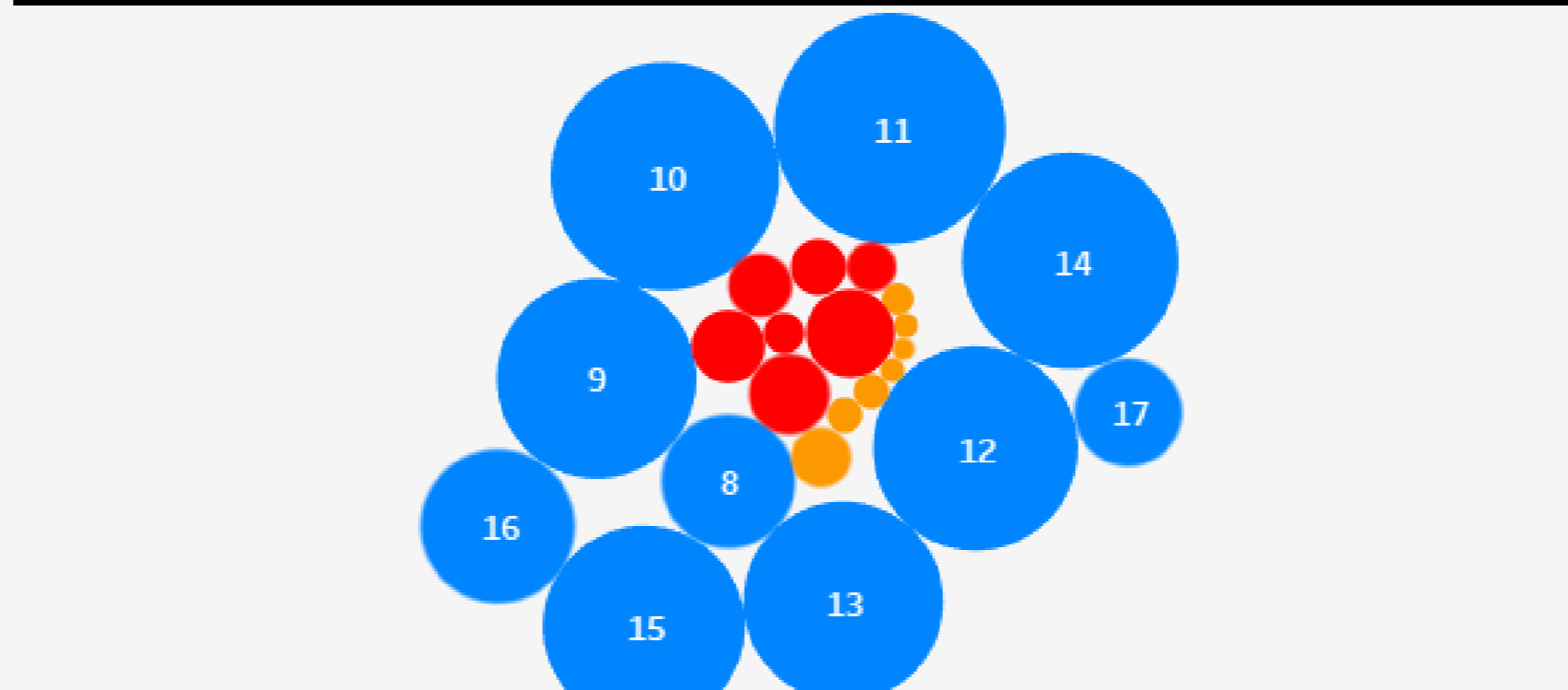
Customer Age



Day



Time



Periode

(All)

Time Filter

(All)

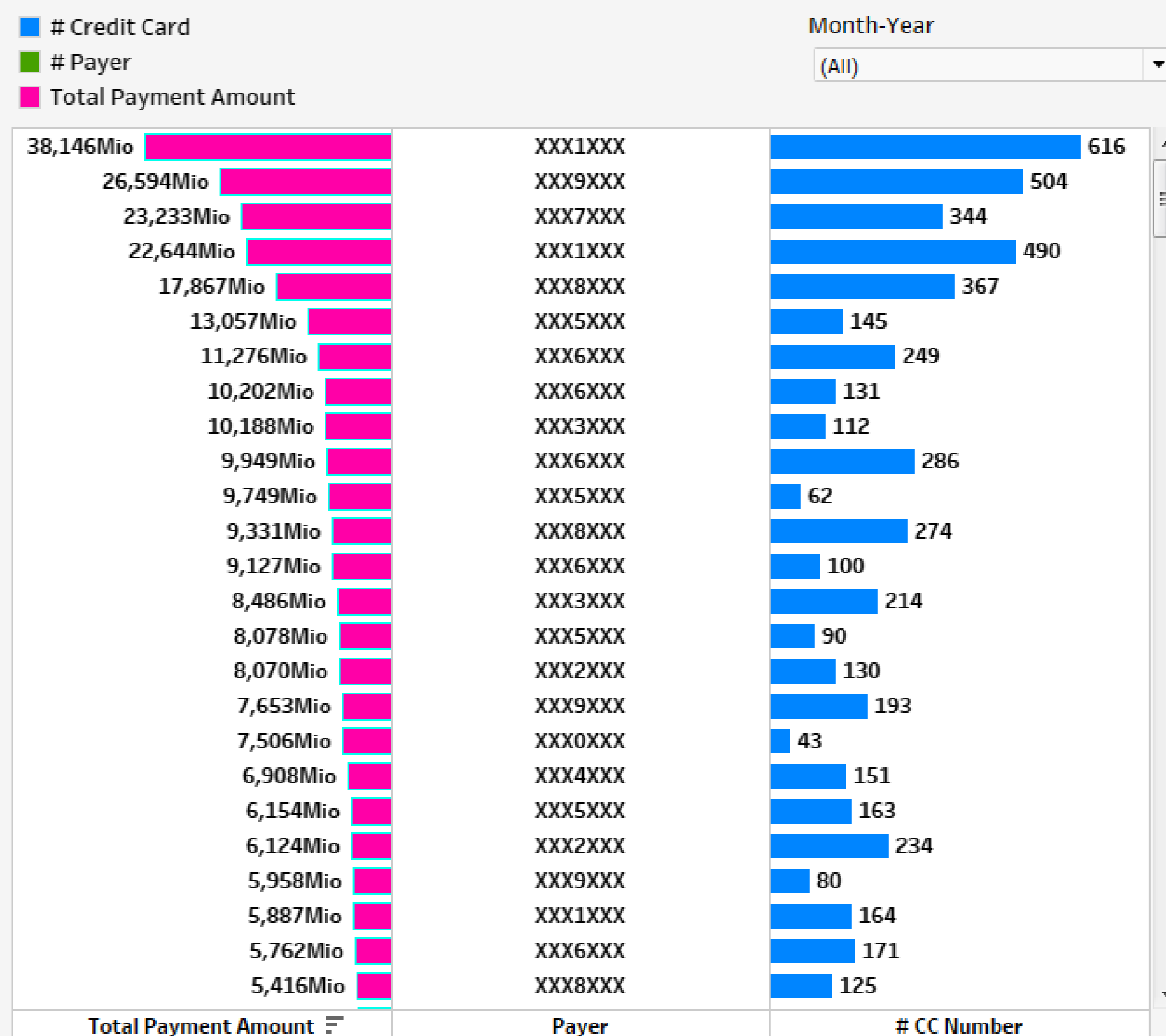
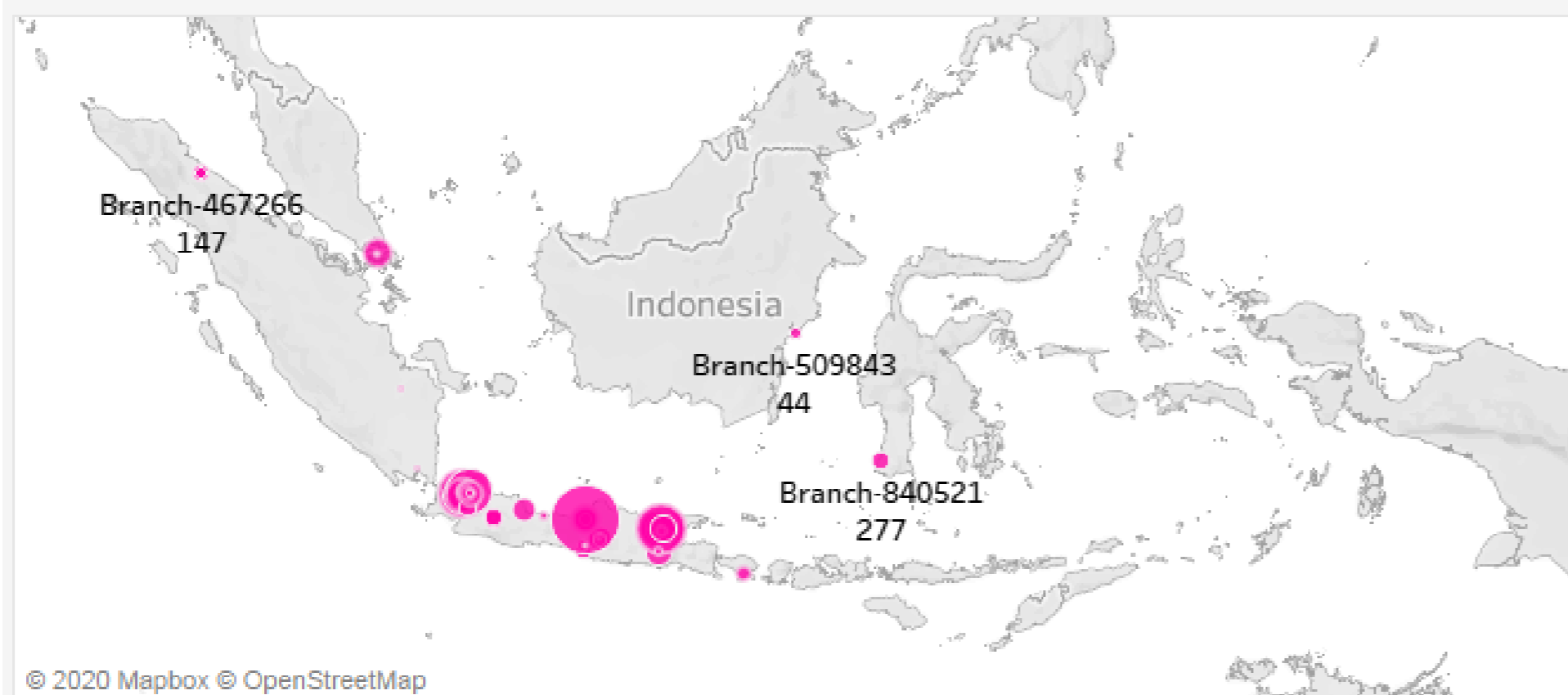
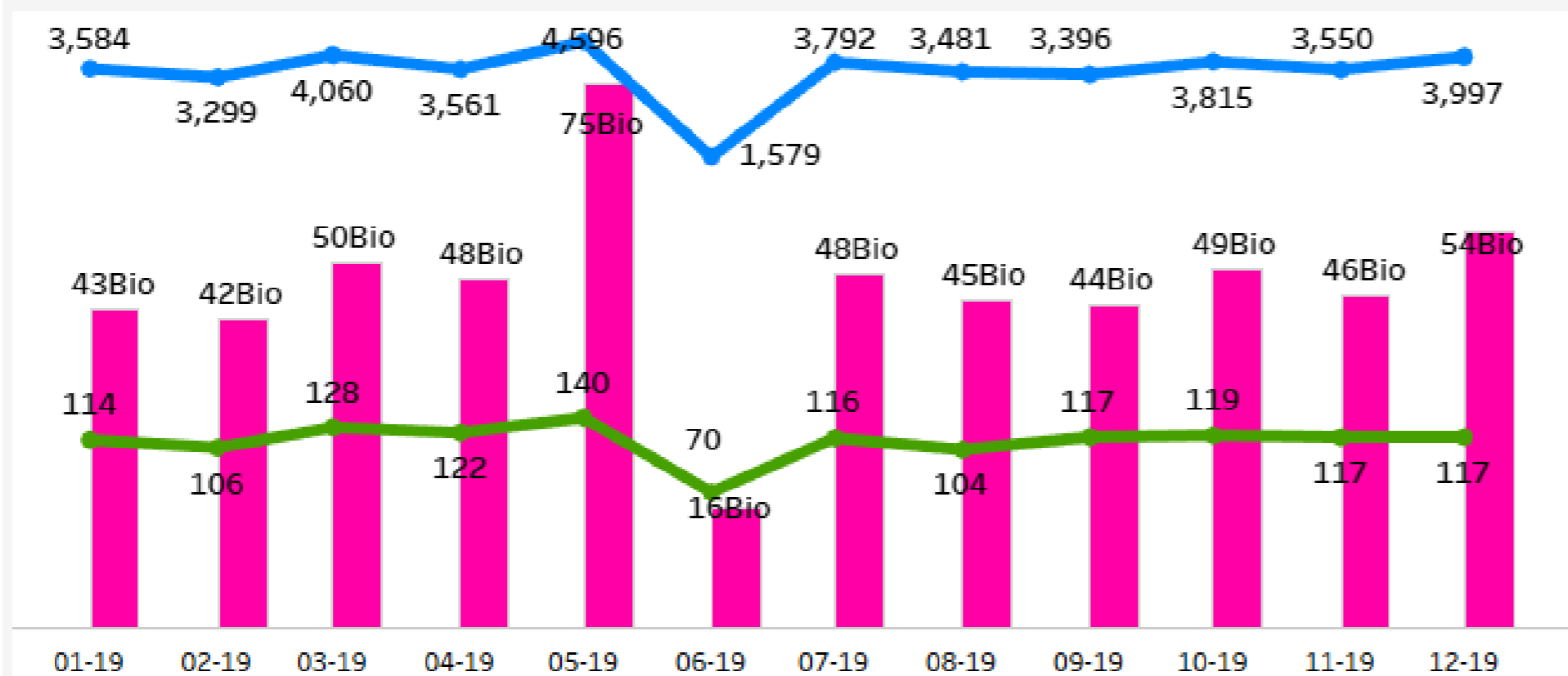
Time

- After Office Hour
- Before Office Hour
- Office Hour

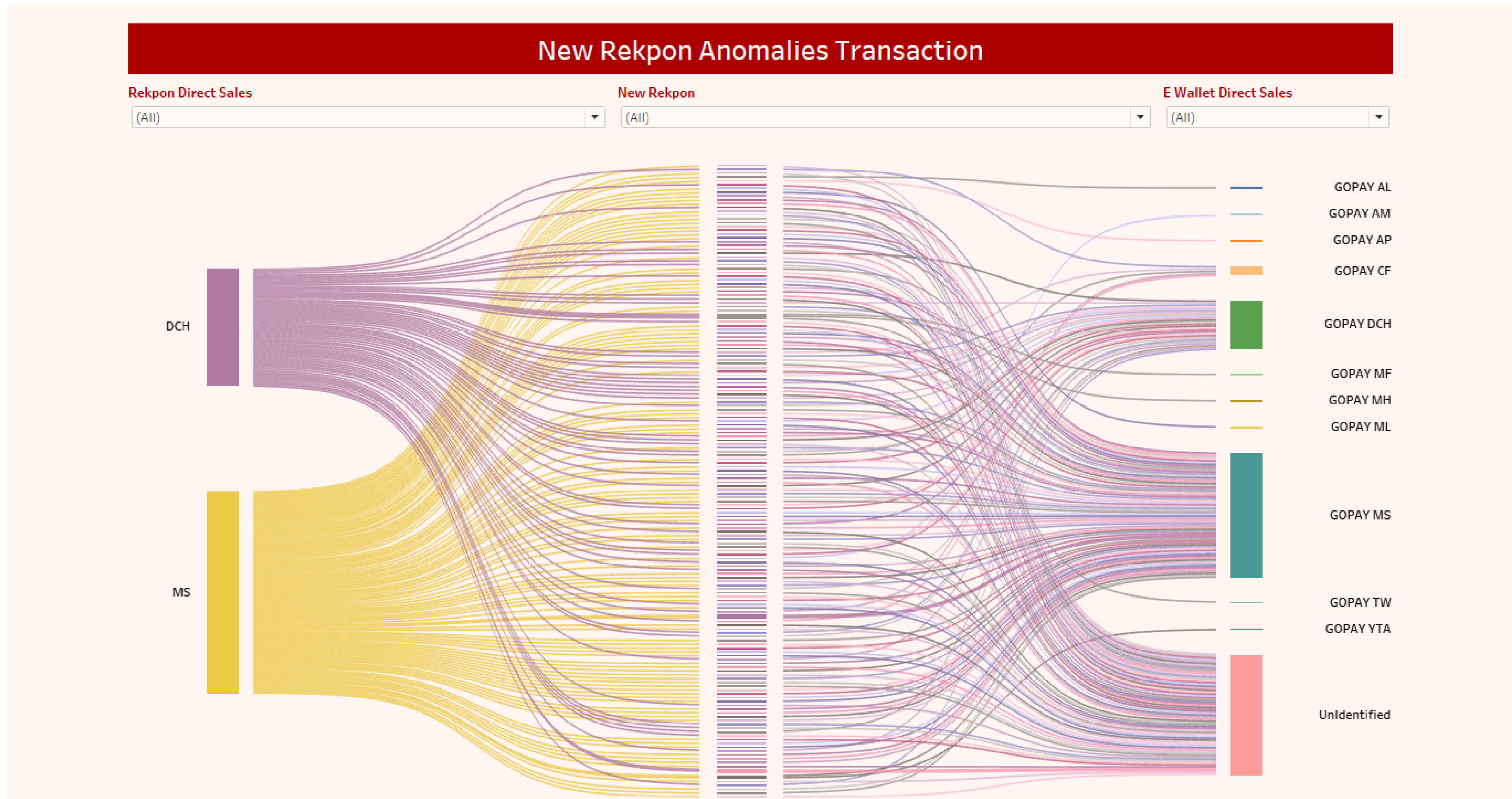
Analytics Audit Dashboard

Pembayaran > 10 Kartu Kredit Dari 1 Rekening (Dummy)

January 2019-December 2019



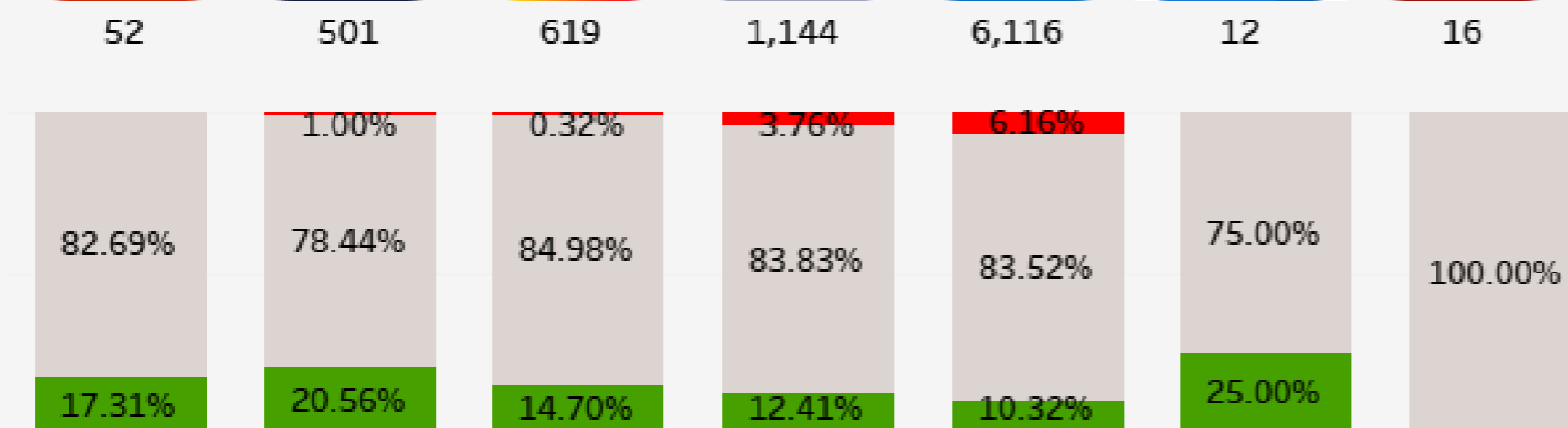
Identified Anomaly Transaction (Sample)



Analytics Audit Dashboard

SOCIAL MEDIA DASHBOARD (Dummy)

January 1, 2020-June 30, 2020



#UserAccount						
0	201	242	0	3,948	6	14

Engagement						
0	4,383	18,316	0	8,169	0	12,285

Likes						
0	3,705	17,567	0	5,704	0	364

Shares						
0	121	0	0	2,450	0	0

Comments						
0	388	736	0	5	0	1

Views						
0	0	0	0	0	0	11,913

#Message

Month-Year
 (All)

■ Negative Sentiment
■ Neutral Sentiment
■ Positive Sentiment

8,460

Keyword Message									
CIMB Performance	27.03%	72.70%	0.27%	370	CNAF	23.17%	76.83%	82	
#KejarMimpi	49.53%	50.46%	0.01%	432	Scholarship	21.74%	78.26%	23	
Promosi	36.48%	63.08%	0.44%	688	XTRAXPO	52.28%	47.71%	153	
Digital Lounge	61.11%	38.89%	0.00%	72	ATM	3.88%	94.82%	1.29%	309
Octo Clicks	50.00%	45.45%	4.55%	22	CIMB Clicks	32.28%	63.78%	3.94%	127
Octo Mobile	44.23%	48.08%	7.69%	52	Go Mobile	34.47%	63.11%	2.43%	206
Credit Card	19.89%	76.97%	3.15%	890	Debit Card	33.05%	63.95%	3.00%	233
Call Center	5.06%	78.48%	16.46%	79	Customer Services	2.65%	87.61%	9.73%	113

CIMB Niaga Analytics Audit

Data Analytics Contribution

Value add 2017-2019: IDR 700 billion

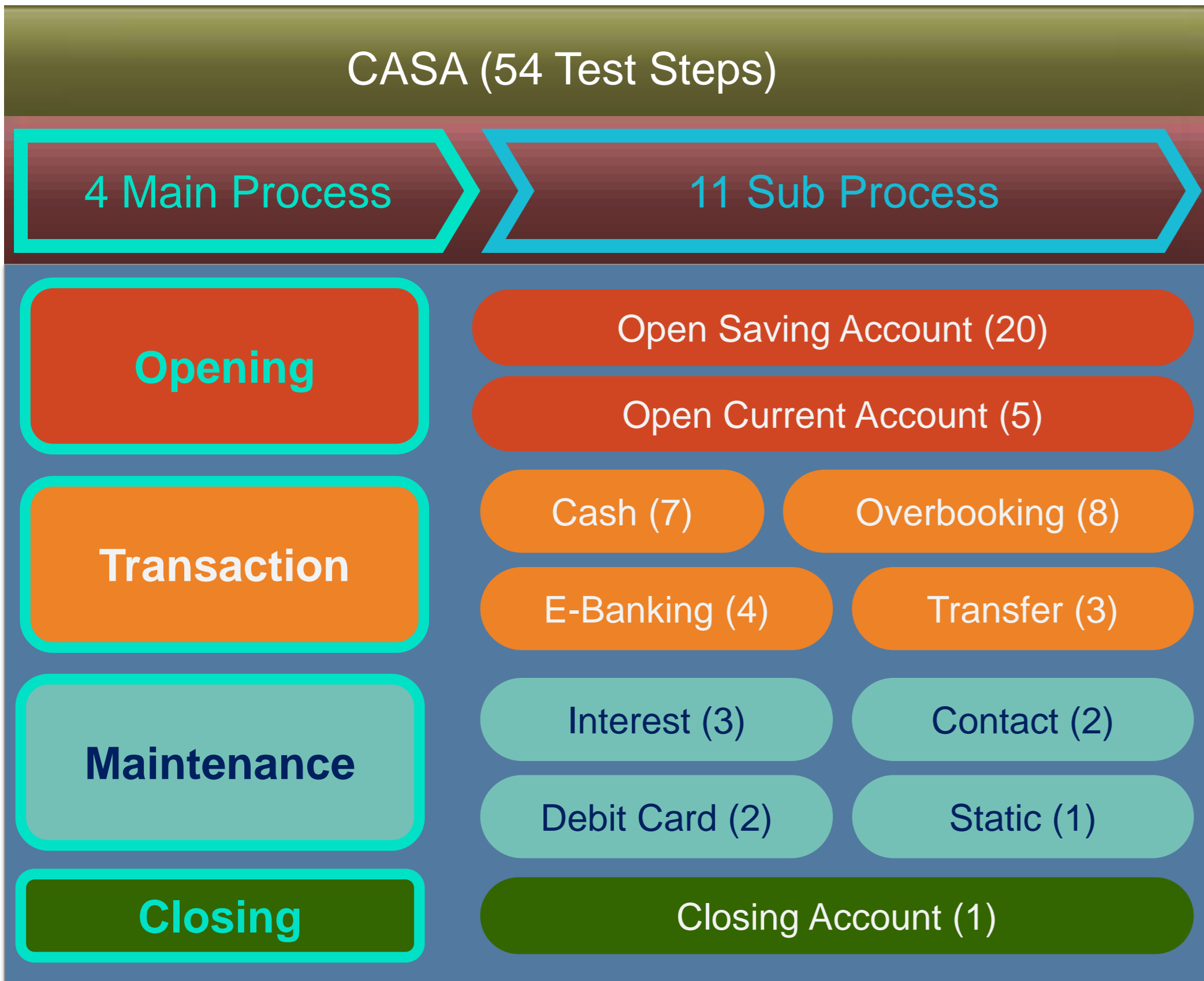
Process improvement

- Default Loan parameter adjusted to mitigate inaccuracy of maturity date
- Modified compulsory field re. Rate variance input on Statement changes
- Limit of ATM withdrawals from other bank's ATM machine
- Limit of maximum opening account for 'Tabunganku' to one (Regulatory)
- Improve AML monitoring system to identify ' Gestun'
- LBU application (Sahasa) modified to fix mapping of Loan Collateral
- Specta Personal Loan improved for LBU parameters
- Limit Rekpon bonus scheme

What do you need ?



1 Ruleset & Models (Sample)



2 People



- Business Understanding
- Audit skill
- Math & Statistic
- Structured Query Language (SQL)
- Machine learning Technique
- Python
- Data Visualization – Tableau

3 Tools



Closing

“Data are just summaries of thousands of stories – tell a few of those stories to help make the data meaningful.”

Chip & Dan Heath