

Data Analytics Sharing for
The Conference Board

August 2021





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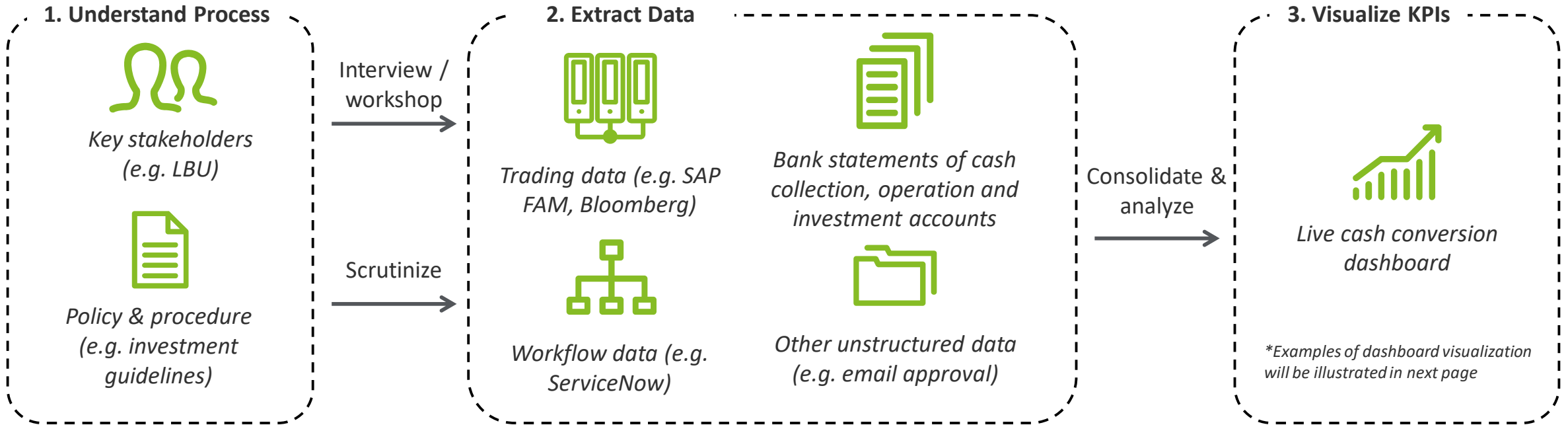
Louis is a qualified actuary and a Partner in Deloitte's Actuarial and Insurance Solution practice based in the Hong Kong office, where leads the practice for the General and Health Insurance sector. He joined the firm in 2020, and has more than 20 years experience in the insurance and reinsurance industry across Asia and Australia, for both General and Life & Health Insurance companies. Most recently, he was the Asia Pacific Chief Financial Officer for Top Tier Global Reinsurer.

Louis has extensive experience in strategy, M&A, finance transformations, reinsurance optimization, actuarial reviews, products and propositions, pricing, and also market expansions.

- Louis was the **Asia Pacific CFO** for a top 5 global reinsurer. Louis lead the operations on financial reporting, planning, actuarial reserving, value of new business, capital management, IFRS17, and finance transformation.
- Louis has led a **market entry** for Personal Health insurance into China, with strategy, product design and successful execution of a large Health insurance portfolio for a reinsurer, culminating in a market-leading position in terms of business volume and profitability, partnering with 10+ insurers with sales of over 20 million policies.
- Louis has experience in Protection product and pricing, product development, and Health eco-systems, including individual medical, group medical, critical illness products. He has led client engagements on Health product strategy and review.
- Louis has extensive analytics **experience in customer analytics**, propensity modelling, distribution analytics, and customer lifetime value optimization projects.
- Louis has worked for 2 large General Insurance companies in Australia on pricing and product proposition. He was the principal actuary leading the price optimization framework for personal lines products including Motor Insurance, CTP, Home, and Travel Insurance. He led a team to execute end-to-end price optimization techniques comprising of competitor analysis, risk models, demand elasticity models, new/renewal models, and retro-fitting optimized rates into a structure.
- Louis has experience for insurance clients across Asia Pacific on Reinsurance Optimization projects including retention setting, **capital optimization**, alternative reinsurance arrangements.

Cash Liquidity Management

Visibility Enablement



Enhancement of Cash Velocity

Holistic View of Overall and Detail Cash Conversion Process



Early Warnings of Delayed Processing with Continuous Monitoring



Visibility of Investment Utilization



Visibility Enablement

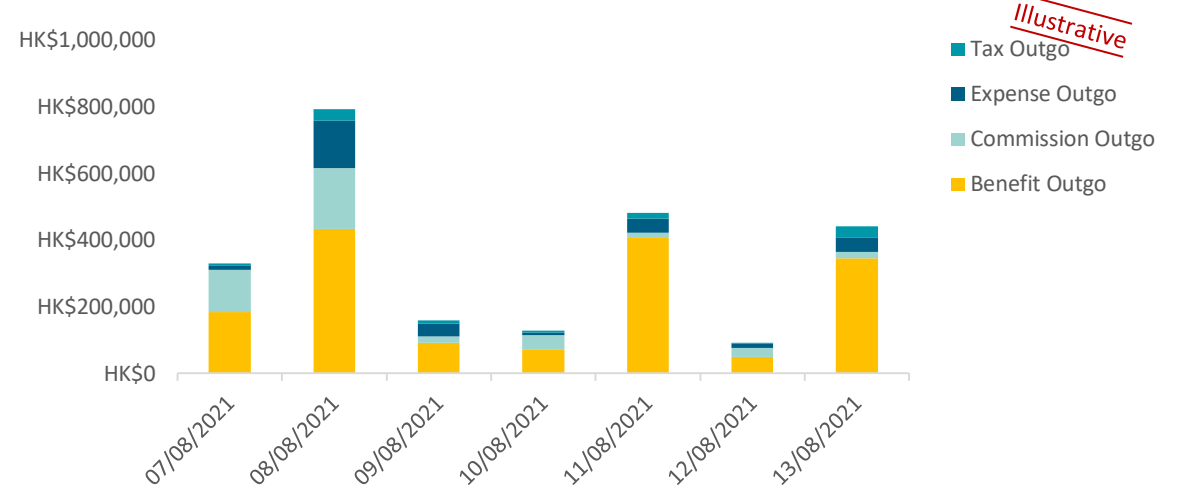
Examples of Cash Conversion Visualization

1 Account Balance Overview

Account type	Bank	Account number	Balance	Last update
Operation	HSBC	XXX-XXX-XXXX	\$5,955,603.98	2021-08-12
	Bank of China	XXX-XXX-XXXX	\$3,466,265.27	2021-08-12
	Standard Chartered Bank	XXX-XXX-XXXX	\$6,258,363.55	2021-08-12
Collection	HSBC	XXX-XXX-XXXX	\$520,859.62	2021-08-12
	Bank of China	XXX-XXX-XXXX	\$6,482,476.08	2021-08-12
	Standard Chartered Bank	XXX-XXX-XXXX	\$8,690,349.42	2021-08-12
Investment	HSBC	XXX-XXX-XXXX	\$5,753,359.49	2021-08-12
	Bank of China	XXX-XXX-XXXX	\$9,020,038.88	2021-08-12
	Standard Chartered Bank	XXX-XXX-XXXX	\$4,184,186.50	2021-08-12

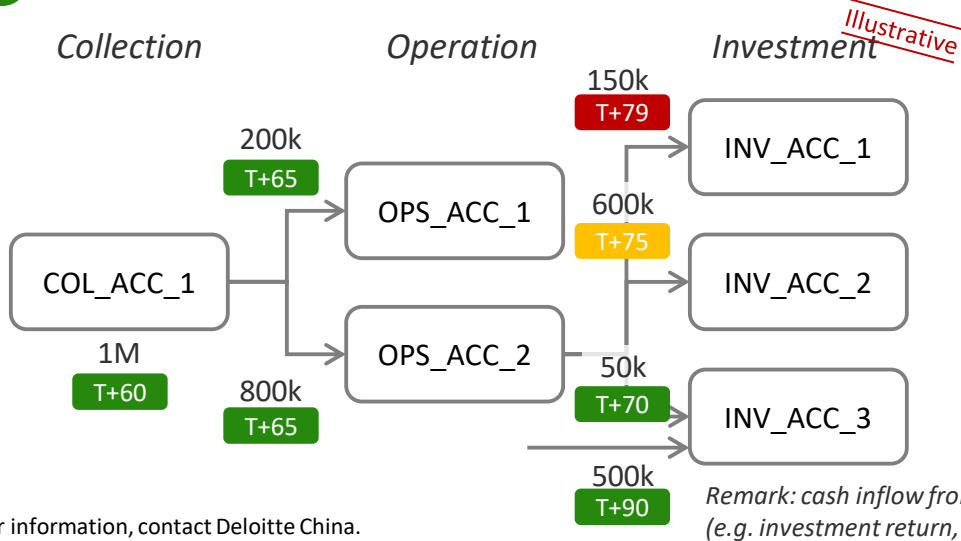
Illustrative

2 Consolidated Operation Cashflow Summary (Outgo)



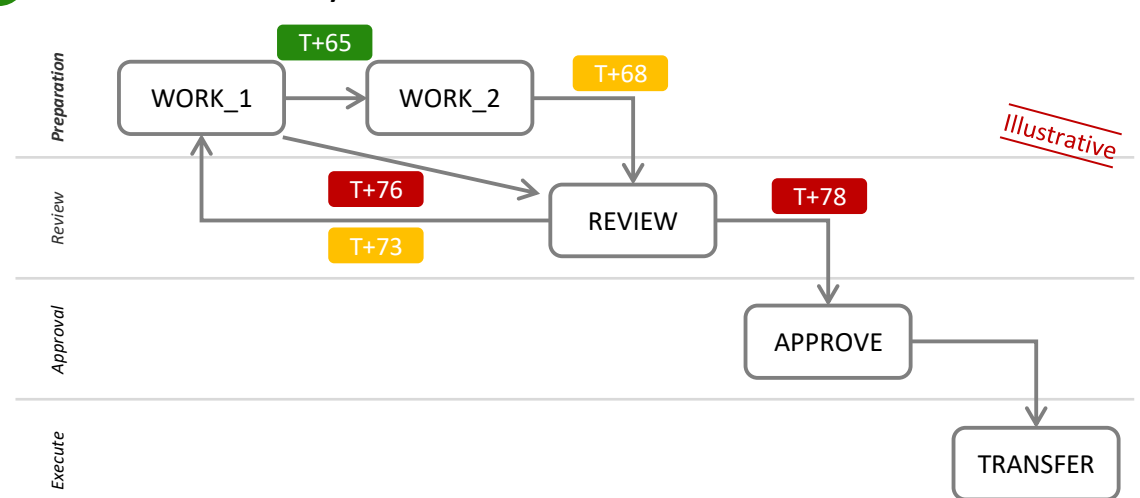
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3 Cash Movement



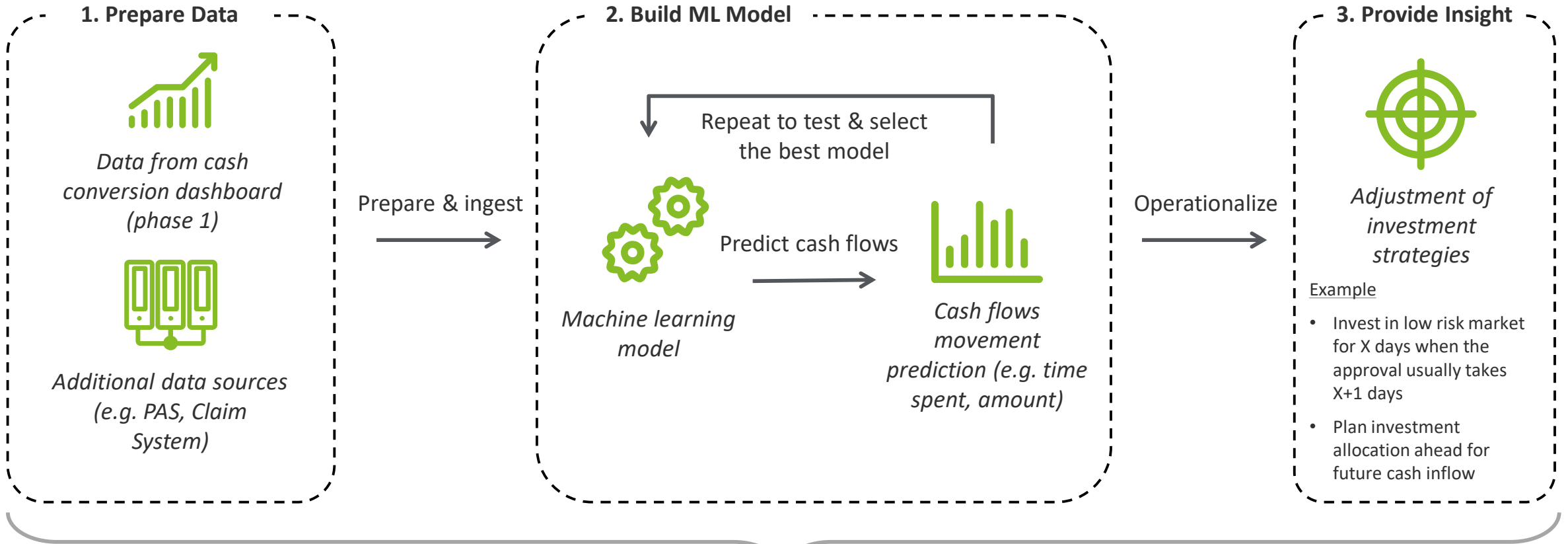
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4 Live Process X-ray



Illustrative

Predictive Analysis



Key Benefits

Increased Cash Utilization & Investment Return



More Accurate Investment Planning

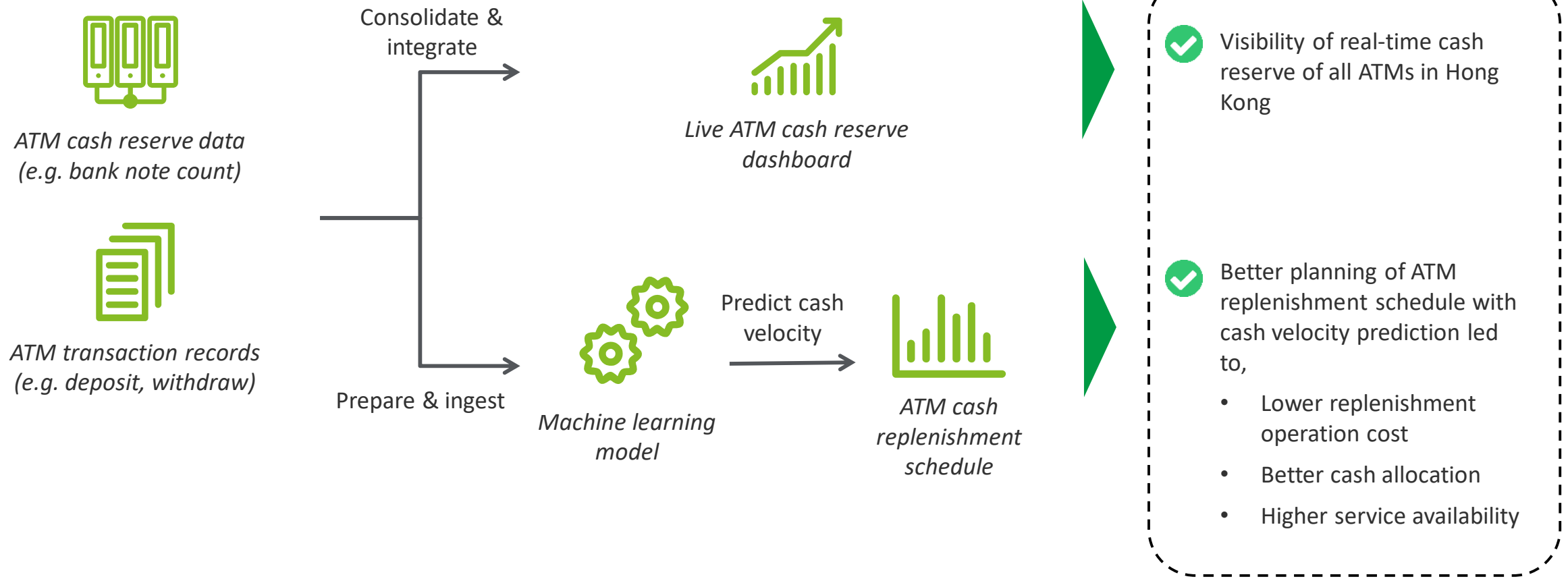


Strategic Investment Product Offering



Predictive Analysis Case Study – Live Dashboard & Prediction for ATM Replenishment

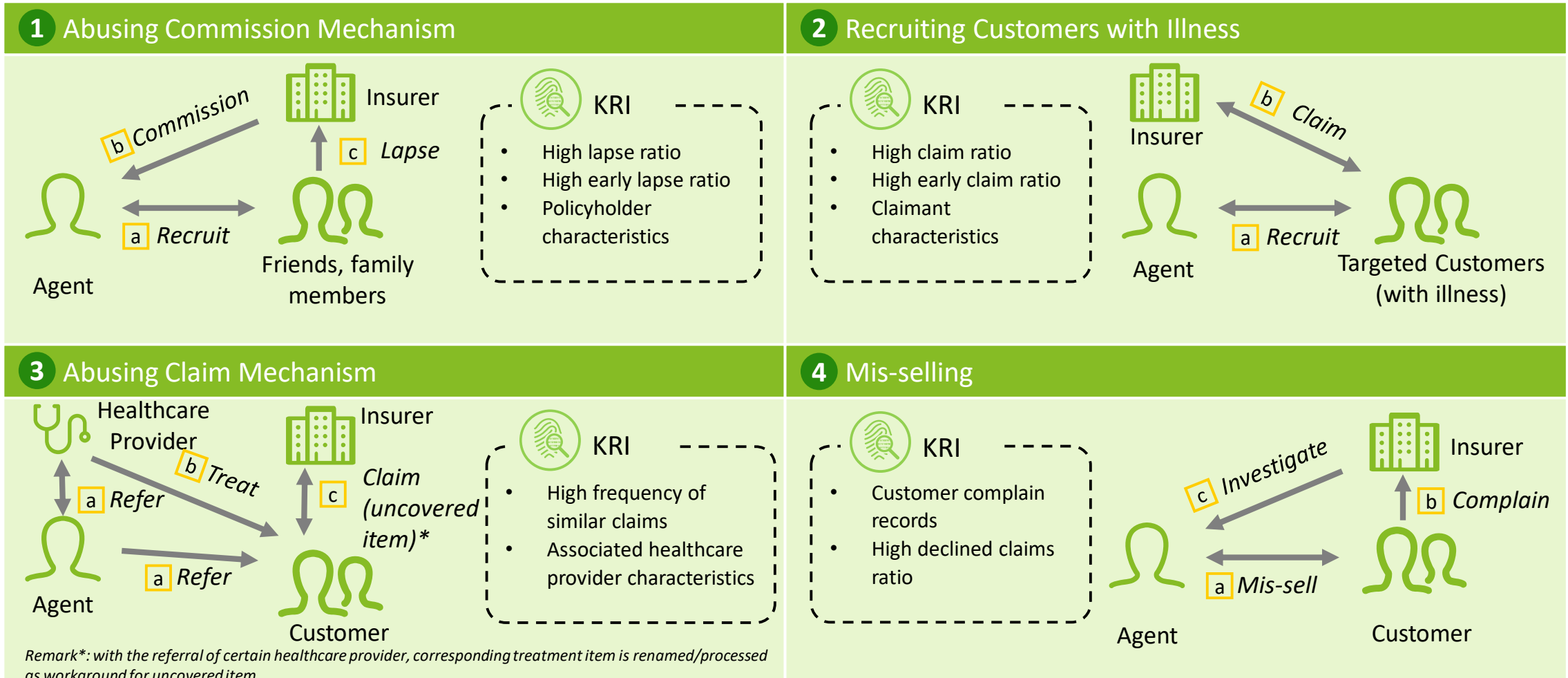
A global major bank has adopted similar methodology to integrate various data sources for 1) **building a live dashboard**, enabling full visibility, and 2) **predicting the cash flow** for better planning.



Risk Analytics

Risk Analytics in Insurance

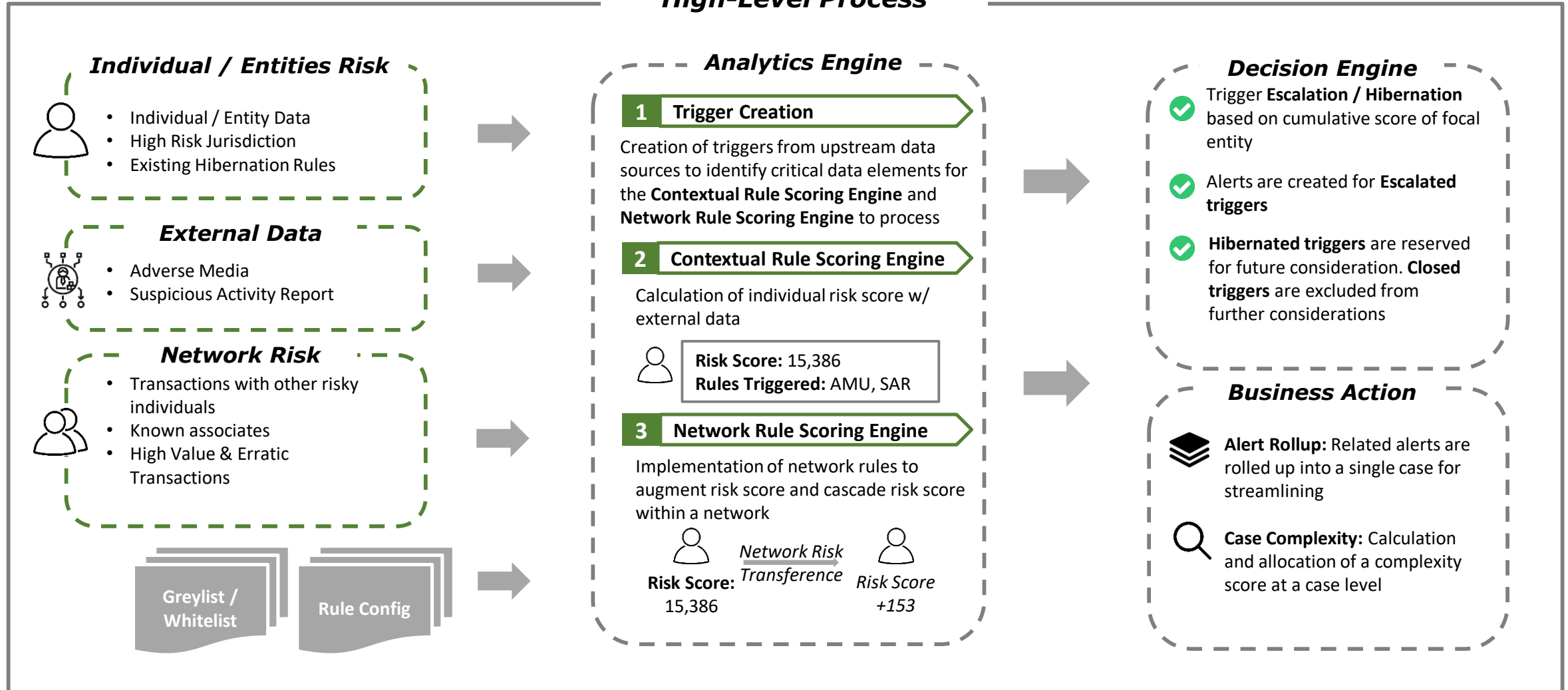
Agents have many touchpoints with customers and also with the insurer. It is conceivable that there can be some elements of risky behavior that goes on during the sales and subsequent process for financial gain. Below illustrates some common risk scenarios associated with insurance agents.



Case Study 1 | Banking Analytics with NLP | AML & Fraud Transaction Monitoring

In order to improve existing inefficient monitoring controls, we helped a bank by utilizing machine learning on customer's individual risk bundled with network analytics on customer's transaction risk to derive a risk framework for creating and triaging alerts generated.

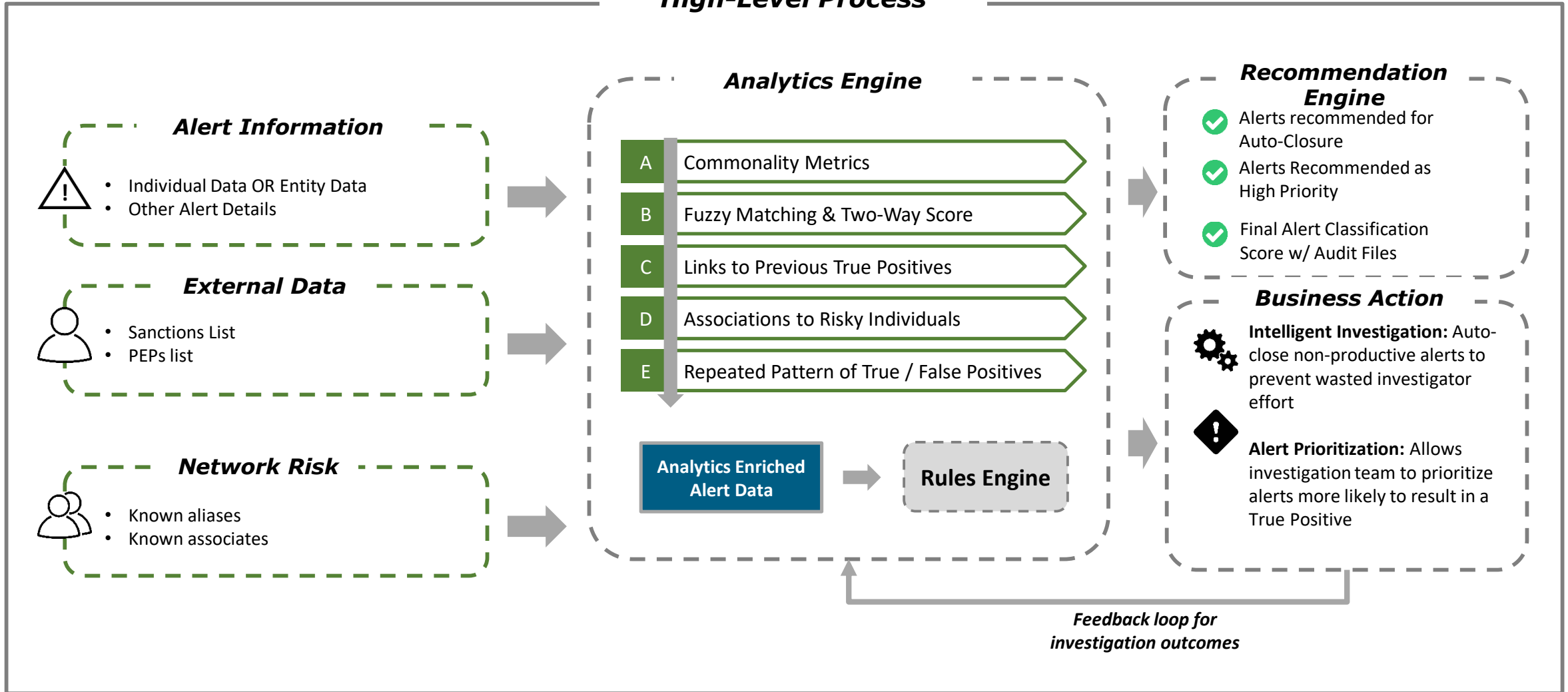
High-Level Process



Case Study 2 | Banking Analytics with AI | KYC Name Screening

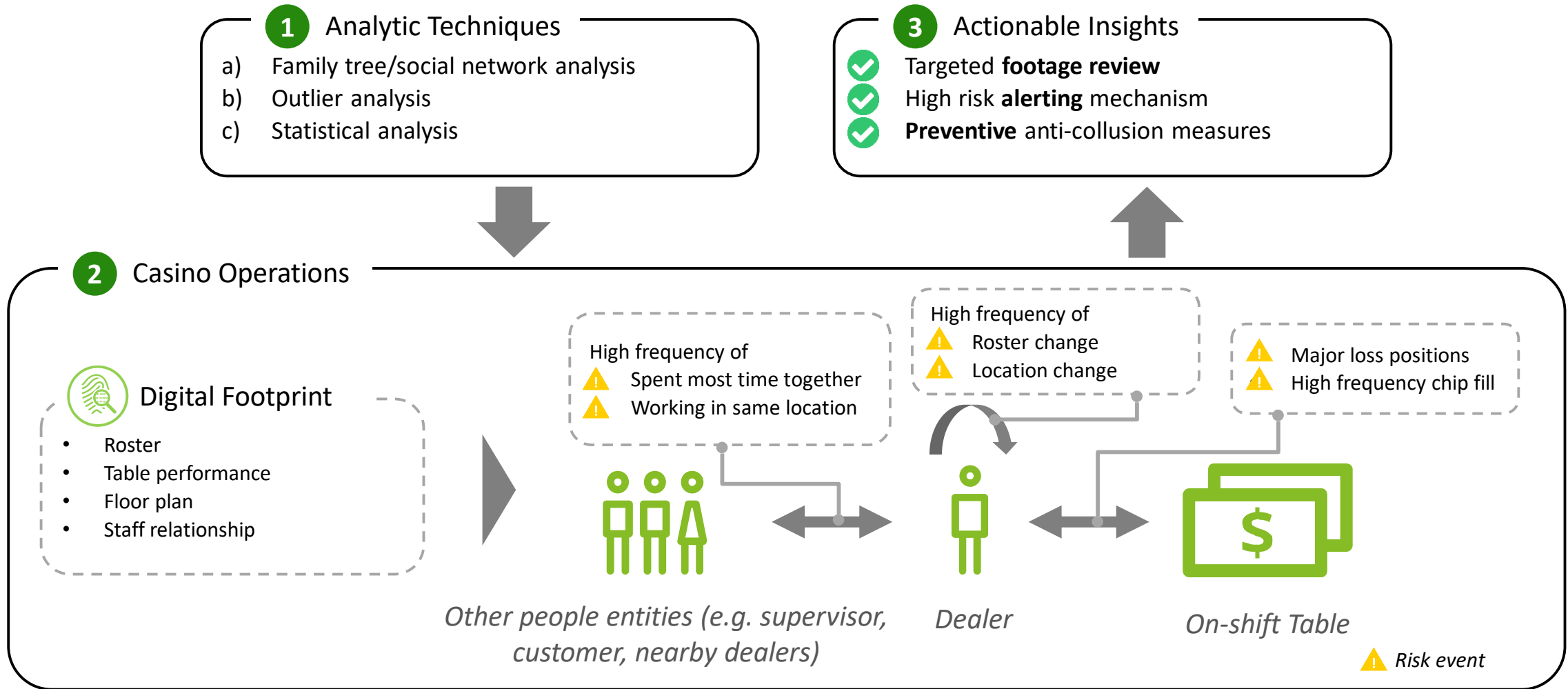
Application of name screening onto existing alerts to derive a likelihood of alert resulting in a True Positive to provide recommendation on alert prioritization and auto-closure

High-Level Process



Case Study 3 | Gaming Analytics with Peripheral Data | Detection of Collusion

Engaged by a casino, we have successfully helped the client to identify suspicious data pattern in relation to table game collusion. Below summarizes the relationships across various key entities and risk events associated – identifying risk scenarios and tracing associated (alternative) data to detect suspicious collusion patterns of dealer.



Price Optimization

What is Price Optimization?

- 01** Price Optimization is a **Holistic Pricing Framework**, which takes into account both the Expected **Cost** (claims, expenses), and Customer **Willingness-to-Pay** (elasticity, competitiveness).
- 02** Statistical modelling is done at **Individual Customer Level**, before aggregating into a portfolio level to seek the **Optimal Tradeoff** between portfolio Volume, and Value
- 03** Price Optimization is a common pricing technique in the **UK, US, and Australia**, and is predominantly in the **General Insurance personal lines** space. The technique is starting to emerge in **Asia** on **Health** products, and venturing into **Life** products.

What are the Insurers currently doing?

Most insurers are deploying their pricing and marketing decisions at portfolio level, based in aggregate level analysis

Current State

New Business **Discount and Promotions** across the board

Benchmark against **Key Competitors** (fixed % vs competitor)

Targeted Customer Segmentation (eg. younger demographic)

Flat **Premium Increases** (or lack of) for annual renewals

Optimized State

Vary level of Discounts and Promotions by customer or segment based on Customer **Willingness to Pay** (elasticity)

Benchmark competitor price at **Individual Customer Level**, based on varying Customer Elasticity for that segment

Couple Segmentation with **Customer Lifetime Value** – with consideration of retention, ability to upsell / cross-sell through time

Offer differing and **Optimal Premium Movements** based on sensitivity to lapse

Customer Persona by Price Elasticity

Customer Elasticity can vary significantly based on life status, financial status, brand recognition, and distribution preference. Targeted pricing strategies based on these persona can be modelled and deployed at individual customer level

#1



42

Agent only

Spouse + 2 kids

Higher Income

Shop with Major Brands

Base Premium: \$12,695
Discount: Nil

Final Premium: \$12,695

Relative to Competitor A: +5%
Relative to Competitor B: +15%
Price Index: high end of market

#2



35

Agent or (sometimes) Direct

Just Engaged

Middle Class

Open to Different brands

Base Premium: \$9,240
Discount: 1 month rebate

Final Premium: \$8,470

Relative to Competitor A: -4%
Relative to Competitor B: +5%
Price Index: market average

#3



23

Online

None

Just starting out

No Preference on brands

Base Premium: \$4,536
Discount: 3 month rebate

Final Premium: \$3,402

Relative to Competitor A: -21%
Relative to Competitor B: -14%
Price Index: low end of market

Age

Channel Preference

Dependents

Financial Status

Elasticity

Insurance Offer
(illustrative only)

Note: all figures are illustrative only

Implied Value by Customer Persona

Price Optimization helps “Maximize” portfolio value by trading off between individual cost of acquisition, and VoNB

#1



Base Premium: \$12,695
Discount: Nil

Final Premium: \$12,695

Relative to Competitor A: **+5%**
Relative to Competitor B: **+15%**
Price Index: **high end of market**

First Year Profit: **10%**
VoNB: **108%**

Cross-Sell Opportunities:
Family Plans
HNW Universal Life

#2



Base Premium: \$9,240
Discount: 1 month rebate

Final Premium: \$8,470

Relative to Competitor A: **-4%**
Relative to Competitor B: **+5%**
Price Index: **market average**

First Year Profit: **2%**
VoNB: **114%**

Cross-Sell Opportunities:
Critical Illness via Agent

#3



Base Premium: \$4,536
Discount: 3 month rebate

Final Premium: \$3,402

Relative to Competitor A: **-21%**
Relative to Competitor B: **-14%**
Price Index: **low end of market**

First Year Profit: **-20%**
VoNB: **143%**

Cross-Sell Opportunities:
Higher coverage Medical Plans
Term Life and Cancer Online Plans

Portfolio Level

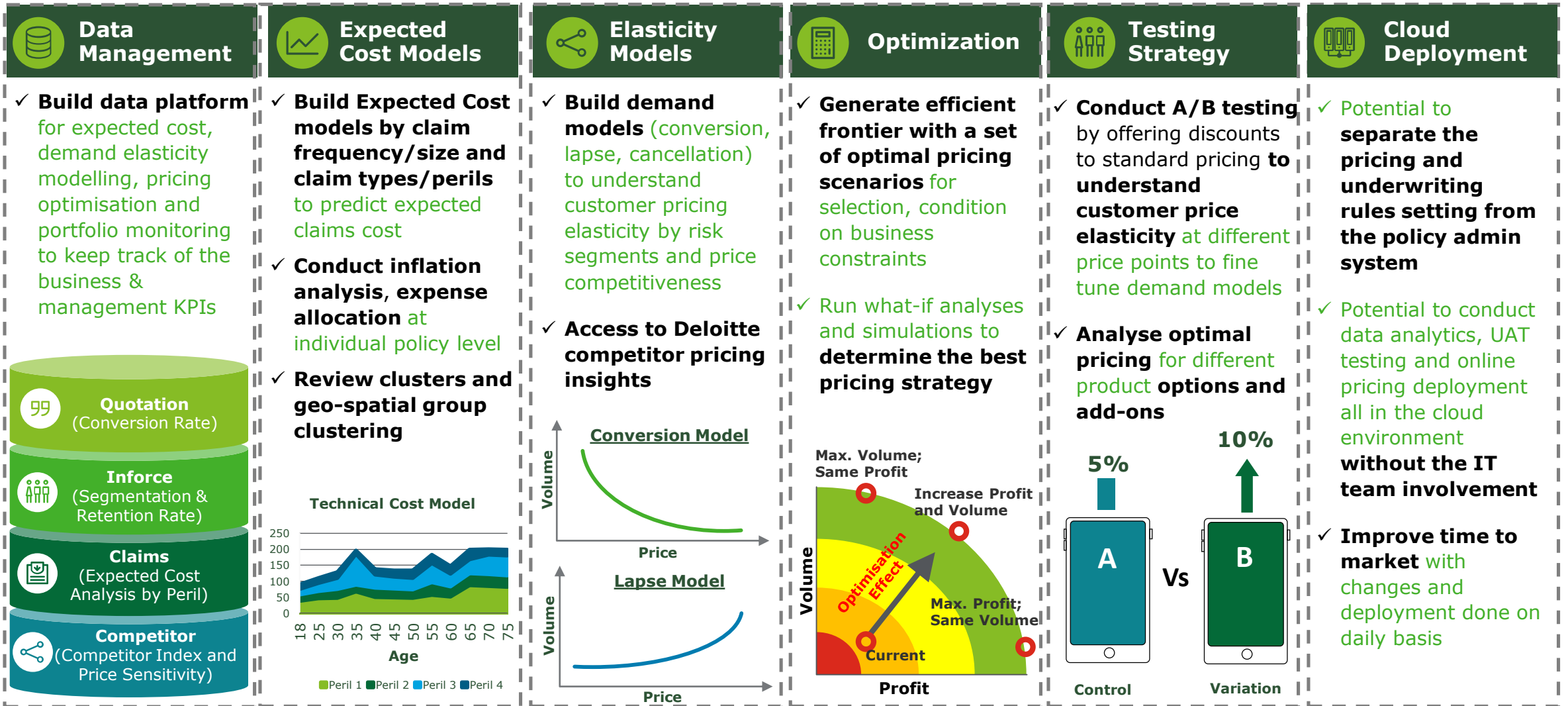
First Year Profit: **3%**
VoNB: **115%**

Incremental value of
All 3 policies vs only #1 & #2
+21% in VoNB

Note: all figures are illustrative only

Price Optimization Journey

The complete Price Optimization journey – from data management to production modules



Questions



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