SME Risks – Big Data 분석을 활용한 사업 효율화 방안

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AGENDA

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01

STATUS QUO - 중.소기업 재물보험 실적 현황, 문제점 및 개선포인트?

02

빅데이터 활용을 통한 포트폴리오 증대 방안 (Driving business growth through Big Data)

03

빅데이터 분석 적용 (SME Big Data Analysis for Insurers)

04

빅데이터 분석의 추가활용방안 (Potential SME use cases for Insurers)

EXECUTIVE SUMMARY

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I. SME Risk sector (e.g., TSI < 20 bn.) – continues to be a challenge for non-life insurers due to their high frequency of losses, often resulting in total loss (TSI < 5 bn.) -> Low profitability leads to low retention of insurers **(**출재보험료 규모, 재보험 출재 방식의 이슈**)**

II. While Long-term Fire Policy is preferred in some risk bands, insurers need to attract more customers in order to strike a balance between premium income and claim expenditure for better business performance (양질의 리스크 추가 유입을 통한 손해충당 재원의 확보 차원)

III. Using big data would help insurers achieve profitable growth through efficient analysis of current portfolio, potential customer, and channel data (벤치마크 분석을 통한 타겟 리스크 고객군 선정, 적정 채널 활용을 통한 마케팅 효율성 증대 도모)

IV. Big data use for simplified underwriting is currently challenging for insurers, as the market lacks risk-quality data (i.e, Construction, Fire fighting, Utility/process, Human element) enough to make a scoring approach -> Area to collaborate within industries (중소기업중앙회, 손해보험협회, 화재보험협회 – formatted questionnaire 업종별 리스크 설문서 개선, SME용 상품 개선 등)

Status Quo

중.소기업 재물보험 실적 현황, 문제점 개선 포인트?

01

Status Quo

Market Risk Band Statistics & Pain points

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1. Fire Insurance (excl. Package insurance)

Unit: KRW mio.-

Year	2020	2021	2022	TOTAL
No. of Policy issues	2,485,102	2,583,639	2,697,118	7,765,859
Premium Written	312,460	337,391	361,750	1,011,601

Underwriting efficiency issue !

2. Property Package Insurance Policy (excl. Fire Insurance Policy)

Total Sum Insured	Portion of Case	Portion of Premium	Loss Ratio
< 10 bio.-	89.80%	16.60%	103.5%
< 20 bio.-	3.50%	5.60%	100.5%
< 100 bio.-	4.90%	17.40%	133.4%
< 500 bio.-	1.40%	17.90%	112.5%
> 500 bio.-	0.40%	42.50%	134.4%

Profitability issue! Reinsurance solution?

Note) With Fire insurance policy, Premium volume accounts for almost 45%~55% (depending on the company)

3. Remarkable feature of SME risk band (with TSI < KRW 20bn.)

- High loss frequency in a tendency of total loss (TSI < 5 bn.) -> Low efficiency
- Long-term Fire Policy preferred in some risk band
- Burden of high retention

Market demands for better approach!!

개선 포인트? (Possible Solutions?)

고객유입 확대와 UW (incl. Reinsurance) 효율성 제고를 통한 수익 기반 구축 !!

LoB / 상품 / 마케팅

- 빅데이터, **AI**를 활용한 신규 고객 발굴 및 유입 / 기존 고객 **Cross/Up-selling**
- 고객 **Scoring**을 통한 우량 고객 선별

언더라이팅

- 재보험 솔루션 개선 (빅데이터를 융합한 손해율 예측)
- 언더라이팅 시스템 자동화 **(UW Automation /** 간편보험 자동심사 등)

우량 고객의 양적 유입 확대를 통한 **Solid PF** 구축

\+

비즈니스 모델의 혁신 (상품, UW, 채널)

BUT HOW?

빅데이터 활용을 통한 포트폴리오 증대 방안 (Driving business growth through Big Data)

02

Using Big Data to grow business with UW efficiency

Focus areas for portfolio analysis

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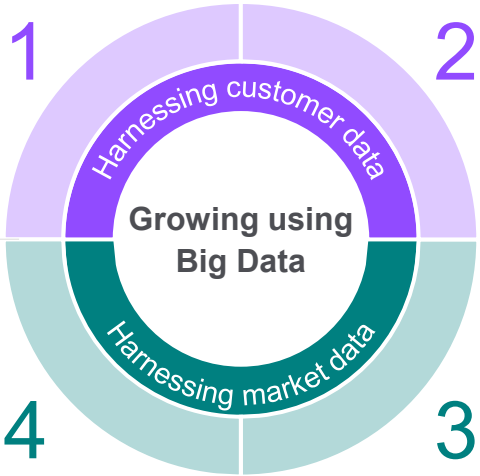
Top line (포트폴리오 분석 – 주요 종목별 성장추세 전망)

- What is the main source of business currently for the Insurer?
- Which are the growing, stagnant or shrinking segments?

Market benchmarking (시장 점유 수준 및 매출 성장 가능영역 분석)

- Where does the Insurer currently have good market presence or penetration?
- Where could be potential focus areas of profitable growth for the insurer?



Bottom line (수익성 분석 – 사업 업종별 지역별 손해율 및 손해발생 요인 분석)

- What is the loss ratio across segments such as business types and regions?
- How is this loss ratio driven by various factors?

Customer behavior (고객의 보험구매 성향 및 동기 분석)

- What LoB's or products do existing Insurer's customers purchase?
- What are the key drivers of the average premium paid by the Insurer's customers?

Big Data to be Used

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Business data

- Sourced and curated from multiple sources
- Current main sources: D&B (Dun & Bradstreet https://www.dnb.com/): 1841년 설립된 기업정보 전문기업으로 국내 650만개 기업정보, 해외 4.8억개 기업 데이터 베이스 제공 , BvD (뷰로반다익): Moody's Analytics 기업정보사업부로 200개 이상 국가내 2억8천만여개 기업정보 제공
- Data cleansing effort ranges from simple (target segment) to extensive (exhaustive database)

Building risk data

Sourced and curated from NSDI (National Spatial Data Infrastructure) : 국가공간정보 인프라 (통합체계) - 사용자가 보유한 데이터를 공간정보와 분석 · 결합하여 지도상에서 데이터를 시각화 제공

- Address and risk attributes such as construction, occupancy, age, no. of floors & basements
- Supplementary information such as land price

Weather risk data

- Based on Munich Re's extensive research and data sources
- Current hazard maps such as typhoon, flooding and earthquake
- Incorporates future climate change scenarios such as drought, bushfire and rising sea levels

Big Data 분석/활용

Split into two phases

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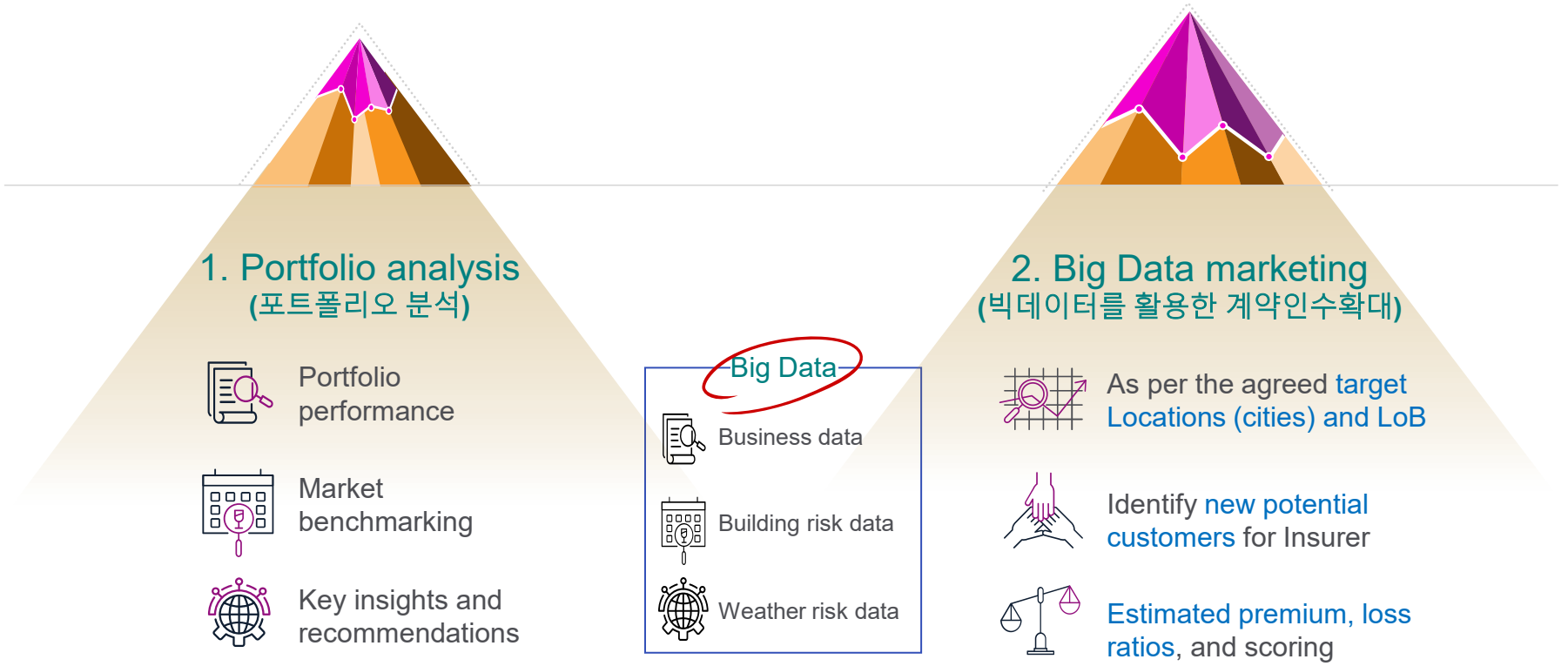

Data (보험사 보유데이터 + 빅데이터) overview and merging

Combining various datasets using standardized features

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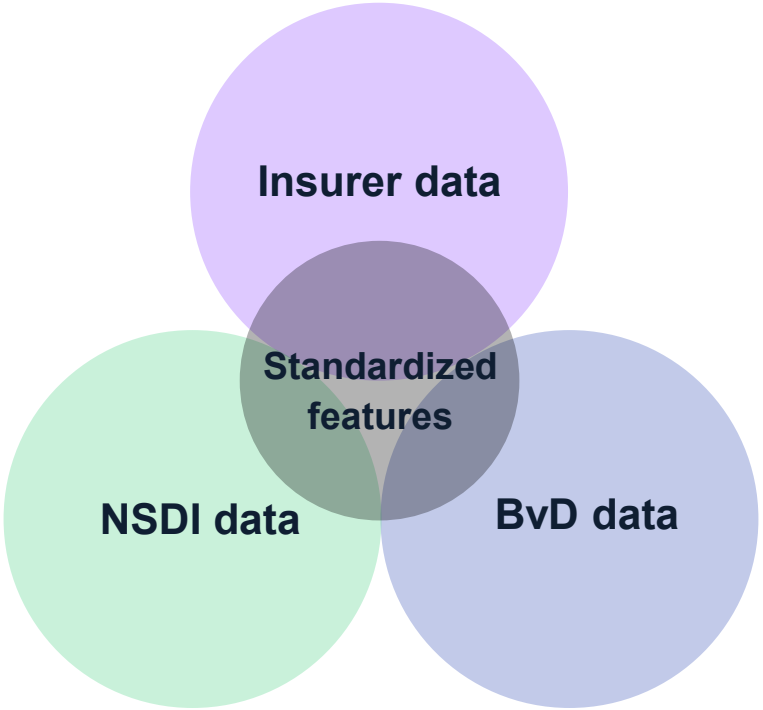

Considers various aspects of a business

- ✓ 사업자 정보 (재무정보 포함) (BvD)
- ✓ 건축물 정보 (NSDI)
- ✓ 보험사 포트폴리오 정보

Merged based on standardized features

- ✓ 사업자번호 (Business registration number)
- ✓ PNU (Parcel numbers – 필지고유번호) code
- ✓ BvD ID

Insurance Data

Individual Policy Data

범주 데이터 **(Categorical)**

- ✓ 증권 번호 **(Policy ID)**
- ✓ 보험종목 **(Line of business)**
- ✓ 상품 **(Product)**
- ✓ 보장 담보 **(Cover)**
- ✓ 계약자 식별 **(Risk ID)**

수치 데이터 **(Numerical)**

- ✓ 원수보험료 **(Written premium)**
- ✓ 경과보험료 **(Earned premium)**
- ✓ 가입금액 **(Sum insured)**
- ✓ 총보상한도 **(Limit)**

보험종목별 (LOB)

- ✓ 화재, 근재, 배상책임, 종합 (Fire, WC, Liability, Package)

데이터 기간 (Data period)

- ✓ 2 Underwriting Years

기타 필수 데이터

- ✓ 사업자번호 (부가가치세 식별번호, VAT number)
- ✓ 우편번호 (Postal code)

Insurance Data

Individual Claims Data

범주 데이터 **(Categorical)**

- ✓ 증권번호 **(Policy ID)**
- ✓ 사고접수번호 **(Claim ID)**
- ✓ 손해유형 **(Damage type)**
- ✓ 보장담보 **(Cover)**
- ✓ 인적/물적 구분 **(Person/Material)**
- ✓ 사고지역 우편변호 **(Postal code)**
- ✓ 진행 상황 **(Claim status)**

수치 데이터 **(Numerical)**

- ✓ 지급 보험금 **(Paid amount)**
- ✓ 방어비용 **(Defense cost)**
- ✓ 지급 조사비 **(Claim expense)**

보험종목별 (LOB)

- ✓ 화재, 근재, 배상책임, 종합 (Fire, WC, Liability, Package)

데이터 기간 (Data period)

- ✓ Incurred loss reported during 2 years

기타 필수 데이터

- ✓ 사고일자 (Accident date)
- ✓ 배상 청구일자 (Report date)
- ✓ 최종 지급일자 (Finalized date)

Weather Risk Data

Exposure and Location Data

범주 데이터 **(Category)**

- ✓ 보험종목별 **(Class of business)**
- ✓ 보장 담보별 **(Coverage)**
- ✓ 업종별 **(Occupancy)**
- ✓ 우편번호 **(Postcode and region)**

수치 데이터 **(Numerical)**

- ✓ 가입금액 **(Gross sum insured)**
- ✓ 보유한도 **(Retained sum insured)**
- ✓ 증권한도 **(Limits)**
- ✓ **Split by PD, BI etc.**

Exposure data is as at xx.xx.20xx

빅데이터 분석, 적용 (SME Big Data Analysis for Insurers)

03

Definitions used in analysis

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Company size category (기업 사이즈 별 분류)

Category (분류)	Operating revenue (매출)	Total assets (총 자산)	Employees (직원 수)
Very large (초대형)	> 130m USD	> 260m USD	> 1,000 명
Large (대형)	> 13m USD	> 26m USD	> 150 명
Medium (중형)	> 1.3m USD	> 2.6m USD	> 15 명
Small (소형)	Other (그 외)	Other (그 외)	Other (그 외)

Company profile (고객별 등급)

- **Core clients:** clients with a package policy
- **Basic clients:** clients without a package policy (e.g. liability only)
- **Top-tier clients:** clients with a package and other policies

Business data

Access to authoritative global and local sources

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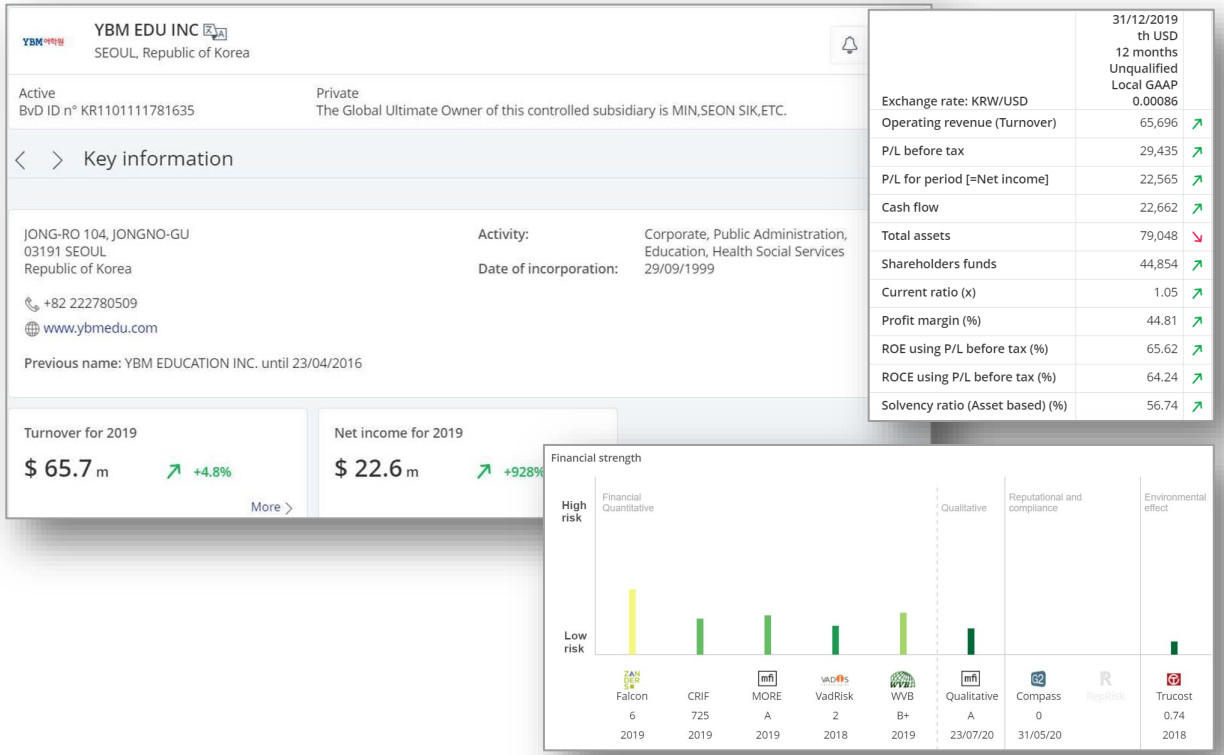

Comprehensive CRM and financial information

- ✓ Business activities
- ✓ Contact details
- ✓ Ownership structures
- ✓ Profit and loss statement
- ✓ Balance sheet
- ✓ Credit information
- ✓ Other legal information

Building risk data

Extensive building and land datasets in South Korea

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Data description

- Information for every building and land parcel in South Korea
- Mainly from NSDI (National Spatial Data Infrastructure)
- Collaborated with related national organizations to construct 37 datasets, and more than 1 billion data points (Constantly updated)

More than 30 features extracted and enriched

- ✓ Address
- ✓ Building polygon
- ✓ Land identification code
- ✓ Building code
- ✓ Building name
- ✓ Building construction
- ✓ Building floor area (m^2)
- ✓ Purpose of use
- ✓ Building height (m)
- ✓ Ground floors
- ✓ Underground floors
- ✓ Building age
- ✓ Building approved date
- ✓ Land polygon
- ✓ Property price
- ✓ Building density
- ✓ Floor area density
- ✓ Further data enrichment…

Weather risk data

Covering all natural perils, now and in the future

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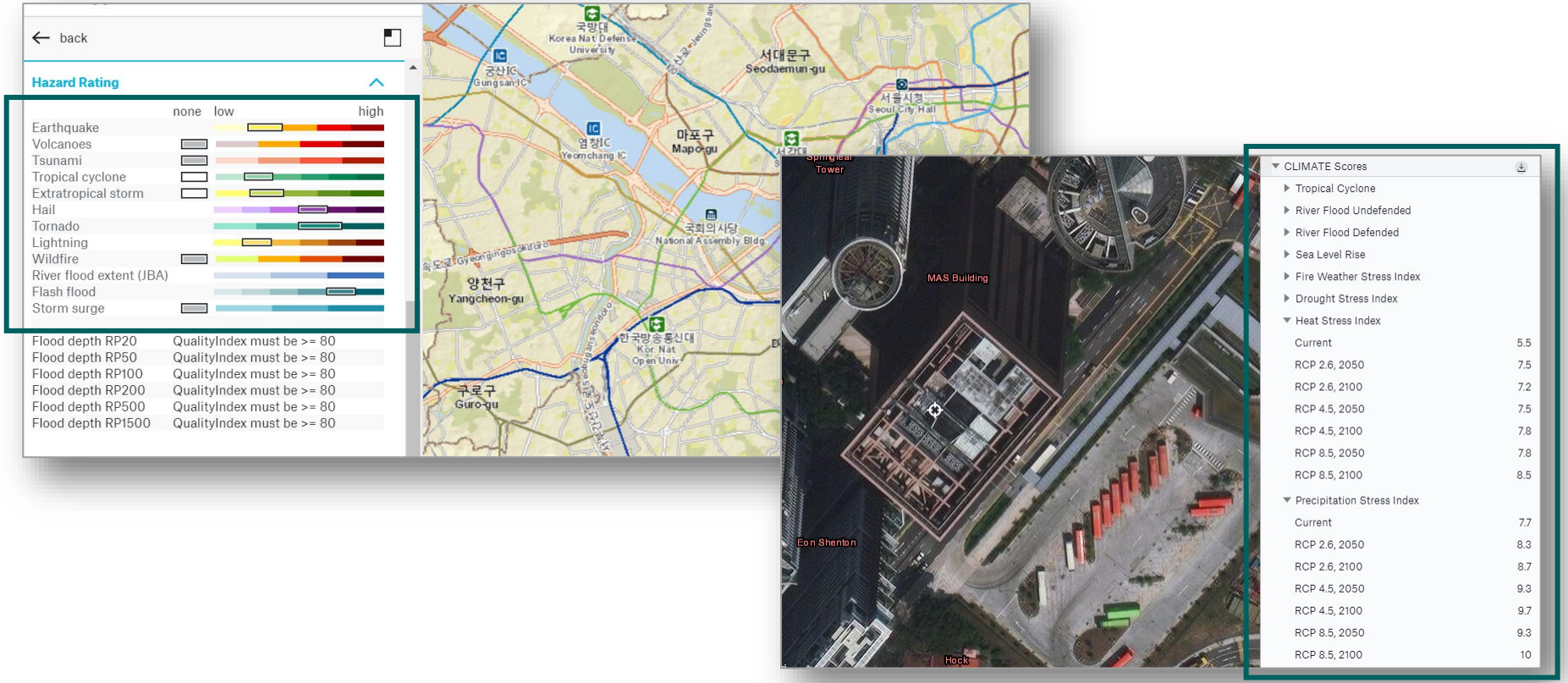

Methodology: Overview and Architecture

Using BvD dataset (대상기업의 비즈니스 데이터) as a starting point

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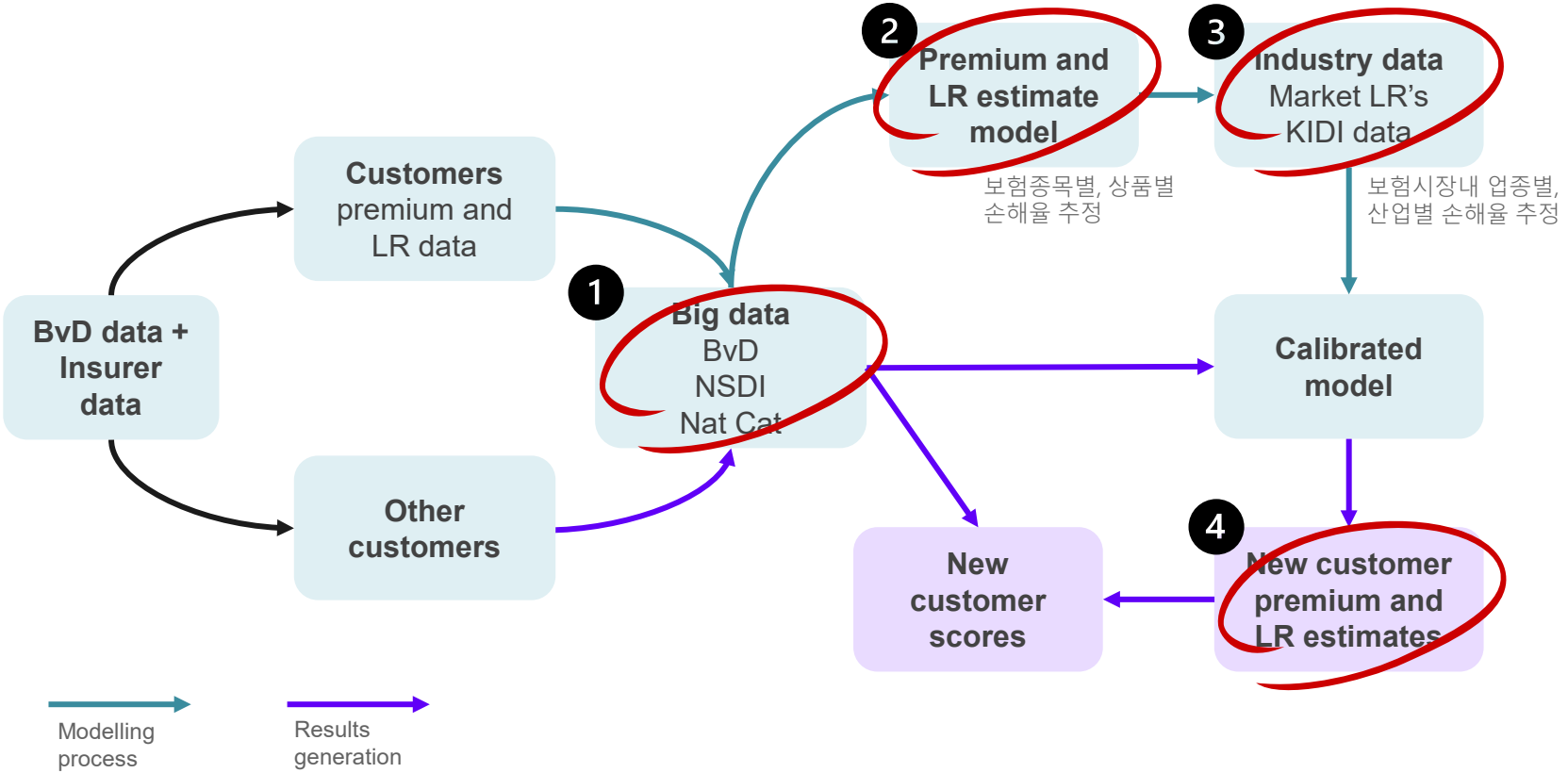

Methodology to Estimate Premium and Profitability

Data

보험계약자 **Data**
(보험사 보유)
✓Profitability by LoB
✓Other client details

Big Data (외부)
Business data
Building data
Nat Cat data

Analysis

기존 보유 포트폴리오 특성 분석 - segmentation analysis -> 보험료 규모, 수익성, 보험계약자 유지율(갱신율), cross/up-selling

Premium and profit estimate, by segment and line of business

Benchmarking analysis, e.g. 원수보험회사 시장 점유율, 포트폴리오 구성비 등

Market overview, e.g. business potential and segment analysis

CPC 전략을 통한 비즈니스 운영 모델 수립

Implementation

- 분석결과에 따라 세부 추진 방안 결정 – 지역별, 보험종목별, 업종별 등 합의된 분석 **segment**에 따라 사업모델 구축 추진
- 분석결과는 마케팅 역량제고, 보험료 산출 및 언더라이팅 효율화 등 전반적인 **BM** 에 활용 가능
- 추가 선택 영역에 따라 **Big Data** 활용 방안 확대

Sample Outputs from Data Analysis (1/4)

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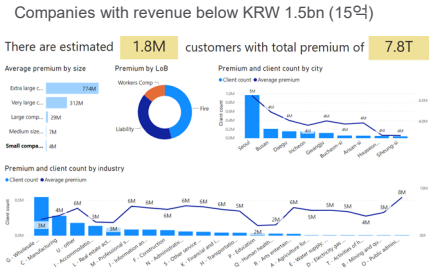
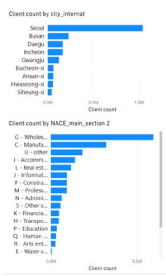
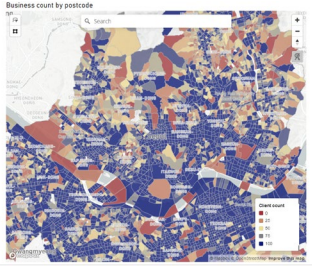
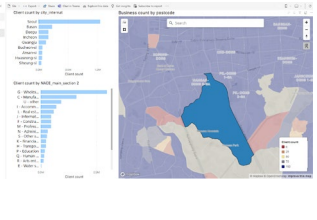
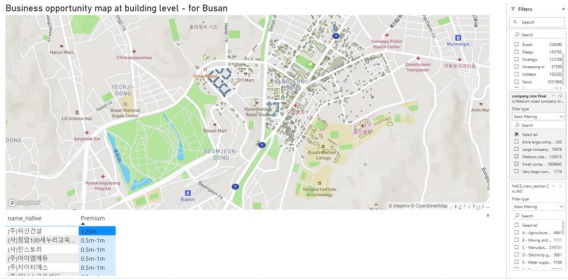
Market development benchmarking: 시장내 현재 보험 가입현황 및 신사업 기회 전망 - **Assessing penetration rates and new business opportunities at different levels (e.g. sector, city, district, postcode or building)**



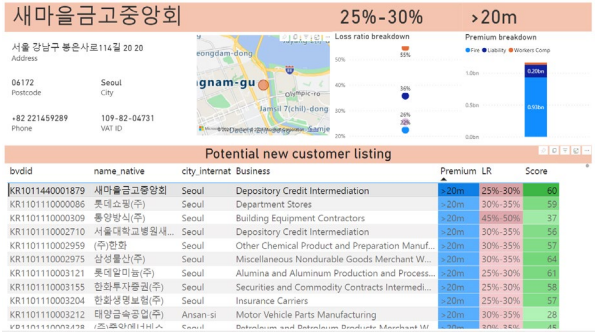




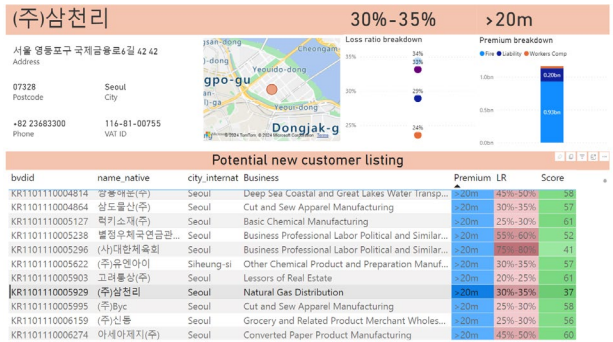




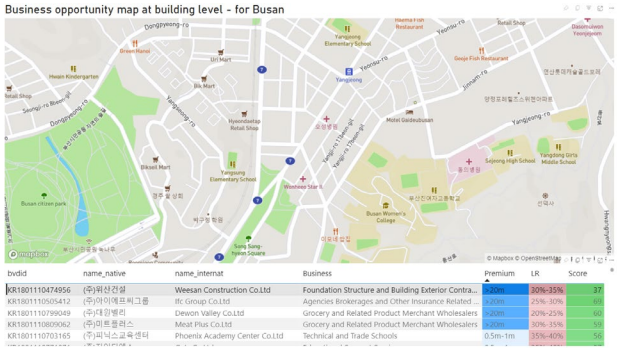
Targeted customer segmentation and acquisition strategy: 타겟 고객군 분석 - **Resulting from analysis on each potential new customer's premium estimate, loss ratio estimate and customer score**



bvdid	name_native	city_internat	Business	Premium	LR	Score
KR1011440001879	새마을금고중앙회	Seoul	Depository Credit Intermediation	>20m	25%-30%	60
KR1101110000086	롯데쇼핑(주)	Seoul	Department Stores	>20m	30%-35%	59
KR1101110000309	롯앙방식(주)	Seoul	Building Equipment Contractors	>20m	45%-50%	37
KR1101110002710	서울대학교병원새...	Seoul	Depository Credit Intermediation	>20m	30%-35%	56
KR1101110002959	(주)한화	Seoul	Other Chemical Product and Preparation Manuf...	>20m	30%-35%	57
KR1101110002975	삼성물산(주)	Seoul	Miscellaneous Nondurable Goods Merchant W...	>20m	30%-35%	64
KR1101110003121	롯데알미늄(주)	Seoul	Alumina and Aluminum Production and Process...	>20m	25%-30%	61
KR1101110003155	한화투자증권(주)	Seoul	Securities and Commodity Contracts Intermedi...	>20m	25%-30%	58
KR1101110003204	한화생명보험(주)	Seoul	Insurance Carriers	>20m	25%-30%	57
KR1101110003212	태양금속공업(주)	Ansan-si	Motor Vehicle Parts Manufacturing	>20m	30%-35%	28



bvdid	name_native	city_internat	Business	Premium	LR	Score
KR1011110004814	경동해운(주)	Seoul	Deep Sea Coastal and Great Lakes Water Transp...	>20m	45%-50%	58
KR1011110004864	삼도물산(주)	Seoul	Cut and Sew Apparel Manufacturing	>20m	30%-35%	57
KR1011110005127	럭키소재(주)	Seoul	Basic Chemical Manufacturing	>20m	25%-30%	61
KR1011110005238	별정우체국연금관...	Seoul	Business Professional Labor Political and Similar...	>20m	55%-60%	52
KR1011110005296	(사)대한체육회	Seoul	Business Professional Labor Political and Similar...	>20m	75%-80%	41
KR1011110005622	(주)유엔아이	Siheung-si	Other Chemical Product and Preparation Manuf...	>20m	30%-35%	57
KR1011110005903	고려통상(주)	Seoul	Lessors of Real Estate	>20m	20%-25%	61
KR1011110005929	(주)삼천리	Seoul	Natural Gas Distribution	>20m	30%-35%	37
KR1011110005995	(주)Byc	Seoul	Cut and Sew Apparel Manufacturing	>20m	25%-30%	58
KR1011110006159	(주)신흥	Seoul	Grocery and Related Product Merchant Wholes...	>20m	25%-30%	56
KR1011110006274	아세아제지(주)	Seoul	Converted Paper Product Manufacturing	>20m	45%-50%	60



bvdid	name_native	name_internat	Business	Premium	LR	Score
KR1801110474956	(주)위산건설	Weesan Construction Co.Ltd	Foundation Structure and Building Exterior Contra...	>20m	30%-35%	37
KR1801110505412	(주)아이에프씨그룹	Ifc Group Co.Ltd	Agencies Brokerages and Other Insurance Related ...	>20m	25%-30%	69
KR1801110799049	(주)대인벨리	Dewon Valley Co.Ltd	Grocery and Related Product Merchant Wholesalers	>20m	20%-25%	60
KR1801110809062	(주)미트플러스	Meat Plus Co.Ltd	Grocery and Related Product Merchant Wholesalers	>20m	30%-35%	59
KR1801110703165	(주)피닉스교육센터	Phoenix Academy Center Co.Ltd	Technical and Trade Schools	0.5m-1m	35%-40%	56

Sample Outputs from Data Analysis (2/4)

Executive Summary – Observations

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Overall, has performed well in 20XX. however there are certain areas for further improvement

lob_primary	GWP_XX	GROWTH_ TOTAL	GROWTH_ NEWBIZ	GROWTH_ ORGANIC	GWP RENEWED	LOSS_RATIO _ALL	LOSS_RATIO _ATTR
10.종합	185bn	4%	9%	0%	95%	56%	30%
07.책임	53bn	29%	23%	18%	90%	52%	52%
01.화재	13bn	-2%	18%	-7%	87%	84%	47%
06.근재	9bn	5%	26%	-3%	81%	38%	38%
Total	**260bn**	**8%**	**13%**	**3%**	**93%**	**60%**	**38%**

NACE_main_section 2	GWP_XX	GROWTH_ TOTAL	GROWTH_ NEWBIZ	GROWTH_ ORGANIC	GWP RENEWED	LOSS_RATIO _ALL	LOSS_RATIO _ATTR
C - Manufacturing	147bn	8%	6%	6%	96%	49%	16%
U - Other	20bn	34%	57%	0%	77%	93%	93%
D - Electricity, gas, steam and air c...	16bn	-16%	5%	-13%	91%	18%	18%
G - Wholesale and retail trade; rep...	15bn	12%	23%	-4%	93%	19%	19%
H - Transportation and storage	11bn	33%	9%	29%	97%	177%	89%
F - Construction	8bn	55%	27%	73%	74%	67%	67%
K - Financial and insurance activities	7bn	19%	10%	19%	92%	107%	107%
N - Administrative and support se...	6bn	33%	37%	18%	82%	38%	38%
L - Real estate activities	5bn	-54%	15%	-67%	94%	107%	107%
J - Information and communication	5bn	20%	14%	14%	93%	33%	33%
M - Professional, scientific and tec...	4bn	28%	23%	21%	87%	20%	20%
I - Accommodation and food servi...	4bn	18%	12%	18%	90%	88%	88%
Total	**260bn**	**8%**	**13%**	**3%**	**93%**	**60%**	**38%**

Observations

- Overall 8% GWP growth. Growth is happening across most LoB (except Fire) and industries.
- Very strong new business growth of 13%, again across most segments.
- However, existing client GWP is reducing in most LoB, except Liability which grew by 6%
- After excluding top 10 losses, there are potential loss ratio issues with (1) transportation/storage, (2) real estate and (3) financial/insurance segments

Sample outputs from data analysis (3/4)

Executive Summary – Observations

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Premium growth (보험료)

- GWP grew by 8% from 20XX to 20XX (13% new business growth, 5% reduction expiring)
- This growth is mainly from CGL (45%), elevator liability (*new*), and packages (3%)
- Main growth industries are manufacturing (8%), construction (55%) and transport (34%)
- In addition, growth was particularly strong (28%) from smaller companies*

**Refer to the previous slide for a definition of company size and profile.*

Market penetration (시장 침투율)

- Increased its market penetration in 20XX, from new client acquisition
- Market penetration is strongest in liability and package products, and for large clients
- However market penetration can still be improved in Gyeonggi-do, Daegu, Busan, Incheon

Customer profile (고객 분석)

- Almost 70% of GWP is from “top-tier” clients with a high renewal rate of 99%
- A growing mix of “basic” and “core” clients with lower renewal rate of 80%
- This “lower-tier growth” is occurring across most industries, except agriculture and mining
- As a result, average premiums per customer have declined, mainly due to new customers

Loss ratios (손해율)

- Only high level observations can be made, given two years of claims and without IBNR
- High loss ratio segments include transportation/storage, and financial/insurance industries
- Fire LoB has a high LR, while the LR for liability and workers compensation is undeveloped

Positive Borderline Negative Neutral

Sample outputs from data analysis (4/4)

Executive Summary – Suggested next steps

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Strengthen existing portfolio
(기존 고객의 충성도 제고)

Whilst 20XX renewal rates are good, the influx of new “basic” customers may bring down the overall renewal rates.

At the same time the renewal portfolio is shrinking due to non-renewals (offset by small organic growth).

Identify opportunities to cross and up-sell to “basic” customers in order to strengthen the existing portfolio.

Technical rate analysis, if not yet done, can also help to understand the minimum sustainable rate level

Data-driven new business growth
(데이터 기반 신규 우량 고객 발굴)

Whilst already enjoying high market penetration, there are further areas to grow in certain regions or SME segments.

It is also important to target customers who have the potential to become “core” or “top-tier” customers, not only “basic”.

Can assist in identifying potential new customers.

Apart from premium and LR estimates, we can perform customer scoring as a guide for insurer.

빅데이터 분석의 추가 활용 방안 (Potential SME use cases for Insurers)

04

Image: everythingpossible / stock.adobe.com

Further steps

High-level picture of sustainable growth management

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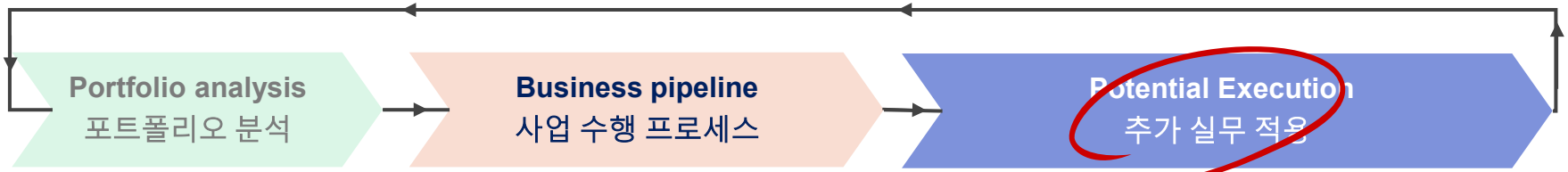


Phase 1

- ✓ Top/bottom line analysis
- ✓ Market penetration
- ✓ Target segments

Phase 2

- ✓ Customer data
- ✓ Premium and LR estimates
- ✓ Customer scores

Customer acquisition strategy
고객 유입 전략

- ✓ Product & sales recommendations
- ✓ Channel selection

Augmented underwriting
언더라이팅 자동화/효율화

- ✓ Simplified underwriting
- ✓ Pricing engine for better risk prediction

Customer lifecycle management
고객 라이프사이클

- ✓ Retention modeling
- ✓ Cross/up-selling
- ✓ Maximize customer lifetime value

Customer acquisition strategy (고객유입 전략 수립) 1/2

Turning the business pipeline into reality with concrete actions

Munich RE

Customer acquisition strategy

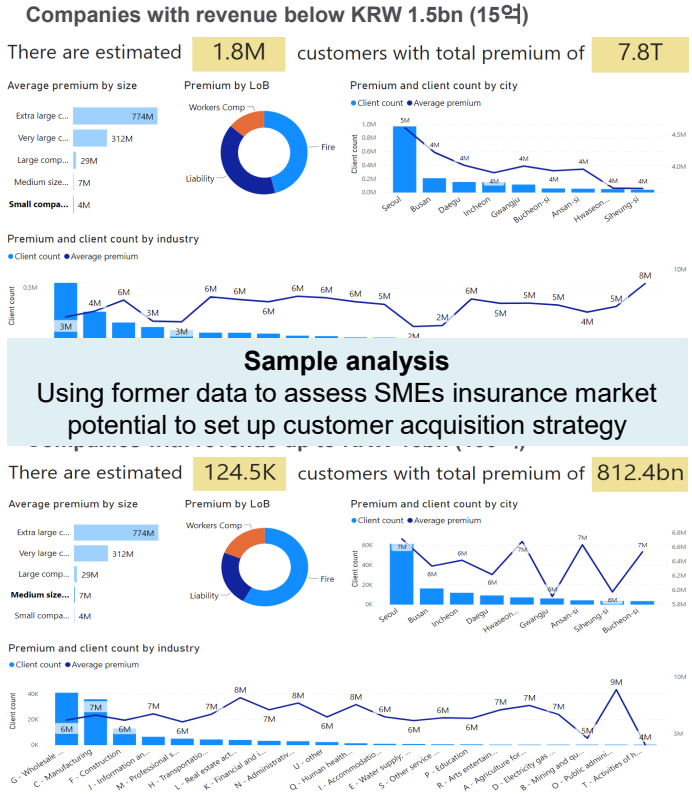
On-site strategy to convert macro strategy and business pipeline into a successful sale

Product recommendation & curation
큐레이션을 통한 상품 추천

- Identify top products for individual customers based on characteristics
- Product recommendations to maximize probability of successful acquisition

Channel selection
활용 채널 추천

- Which channel will be most effective to acquire new customer?
- Is single-channel or multi-channel approach more effective?



Customer acquisition strategy (고객유입 전략 수립) 2/2

Turning the business pipeline into reality with concrete actions

Munich RE

The analysis will provide support and information to acquire new customers for Insurers!

New customer pipeline
(신규 고객 관리 파이프라인 – **Business Process**)

Identify new customers
(고객 정보 확보)

보험회사 보유 고객 정보

Estimate premium and LR
(보험료와 손해율 수준 추정)

Indicative figures in order to understand customer potential

Methodology

Provide relevant scoring
(고객 관련 보조 지표 Scoring)

Customer scores to help guide Insurers marketing & UW resources

Methodology: Loss Ratio Estimation

Industry data as starting point, and finetuned data

LR by LoB
(보종별 손해율)

- Using market statistics for insurers
- 보험종목별: 종합, 화재, 근재, 배상책임

Result: high level view of LR's by LoB

1st finetune by industry
(산업별/ 업종별 손해율)

- Separate LR's by industry as per BvD classification
- Based on data from various sources incl. KIDI and other Parties

Result: more granular LR estimates split by industry

2nd finetune by Big Data
(빅데이터를 활용한 추가 패턴 탐색)

- Using Insurer data enriched by Big Data (BvD, NSDI, Other)
- Detect granular patterns by finer risk attributes

Result: Final LR model applied to new customers to provide LR estimate for marketing purposes

Customer scoring: the “Ideal Customer Profile”

Based on individual customer data from Big Data

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Success likelihood
보험계약 체결 가능성

Focus on customers that are more likely to buy from the insurer

- Cities and/or provinces where the insurer has a stronger distribution force
- Industries where the insurer has a stronger brand or marketing outreach

Stability, sustainability
기업의 재무 건전성

Businesses that are stable and sustainable are preferred

- Financial strength based on credit rating, solvency ratios
- Sustainability of business using TruCost* scores

Growth potential
성장 가능성

Businesses that are showing strong growth are preferred

- Strong growth performance in recent years
- e.g. revenue growth, improvement in return on equity

Risk quality
리스크 질적 수준

Businesses that have a better risk quality are preferred

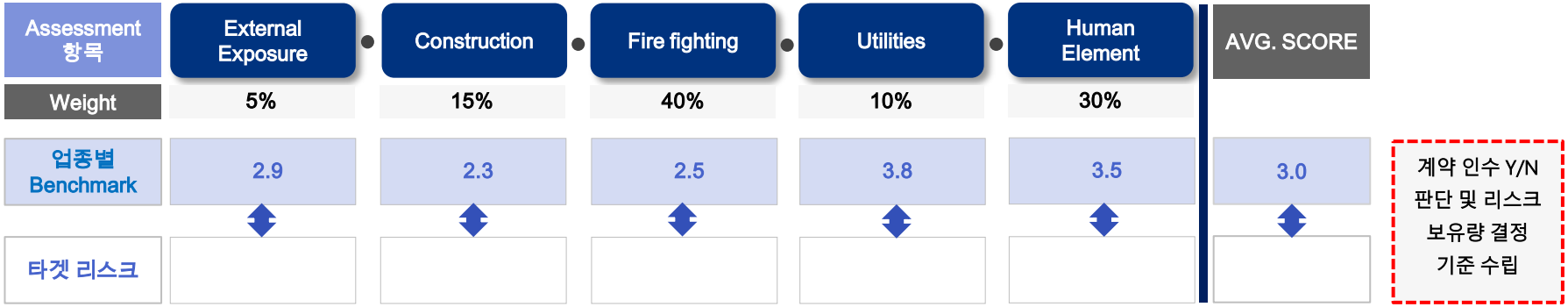
- Other finer risk attributes that have not been captured in LR estimates
- e.g. Nat Cat risk scores, building construction, age, etc.

* 기업의 ESG성과를 평가하는 중요한 도구 -> 환경영향, 탄소배출, 자원소비, 사회적 책임, 거버넌스 등을 종합적으로 평가한 Score 부여

The weighting on each of the above criteria can be customized when calculating the overall score.

Methodology: Scoring-driven Underwriting Automation

5대 리스크 평가항목에 대한 개별 정보 수집 -> 각 업종별 Benchmark 대비 상대평가



Risks Assessment 관련 이슈

- 리스크 규모 밴드별 (TSI Band) 가용 리스크 정보량의 차이 -> 50억 미만 공장 규모의 경우 취약한 리스크 Quality로 변별력 부재 -> 특정 항목에 국한한 상대평가를 통해 UW 자동화 추진
- TSI 100억 이상의 경우 (개별 리스크 정보 보유) 절대 리스크 평가 Score를 기준으로 UW 자동화 및 보유율 결정 프로세스 도입
- SME 리스크 관련 보유 리스크 Protection (재보험 출재 솔루션)은 별도로 고민의 여지가 있는 상황

Augmented and simplified underwriting (UW 자동화/효율화)

Improved customer experience: SME property

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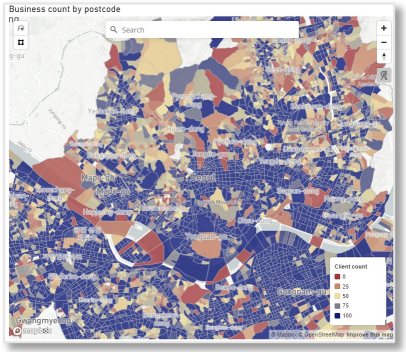
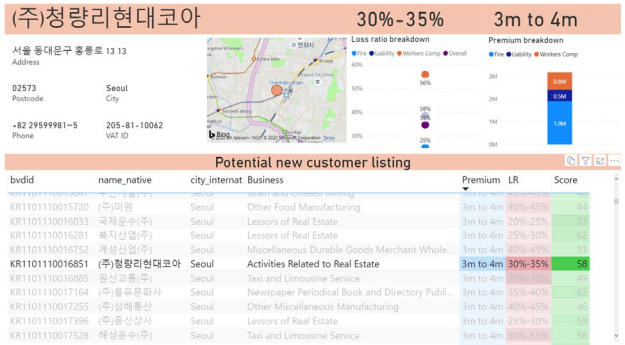
For simple and homogenous risks in SME, simplified underwriting can be performed using Big Data to improve customer experience and sales, without compromising underwriting risk quality. (Insurers can also carve out a good quality segment which is simple and homogenous and apply simplified underwriting)

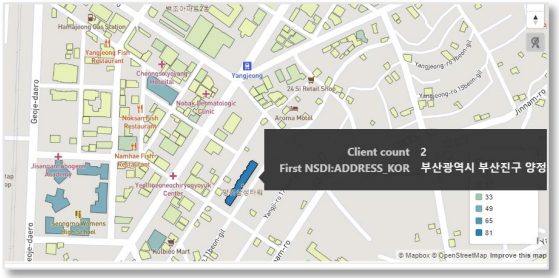
비교적 단순/동질성이 있는 **SME** 리스크 **PF**특성상 빅데이터 활용을 통해 언더라이팅 프로세스 간소화가 가능, 이를 통해 양질의 고객 경험을 제공하고 수익성 개선을 도모

Sample analysis

Business data with premium and loss ratio estimates and scoring can be visualized and analyzed in different forms, e.g. list view, name card view, map view, and aggregated view.







Customer lifecycle management (고객 라이프사이클 맞춤관리)

Key ingredients include customer retention and cross/up-selling

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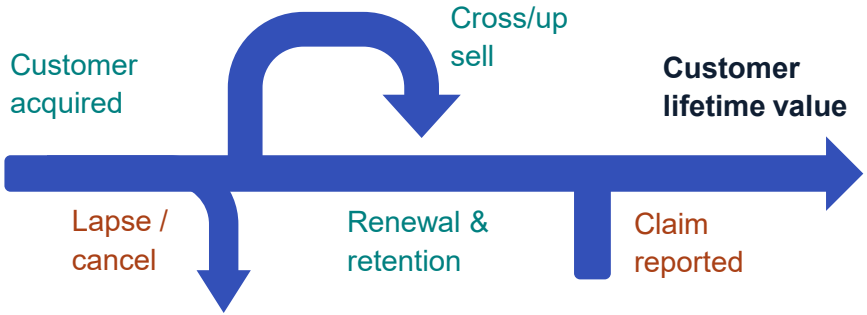
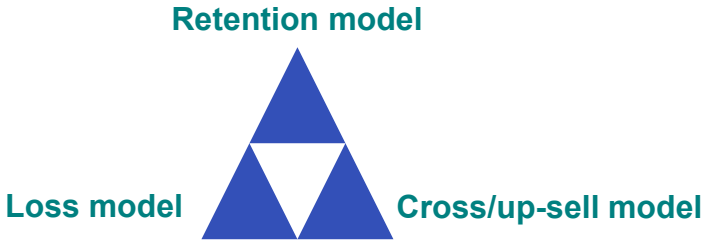
보험계약자 Lifecycle – illustration



보험사 customer models – key components



고객 라이프사이클 분석 (Modeling)

- Several “value-adding” and “value-destroying” events happen during a customer lifecycle with Insurers
- Assuming a profitably priced product:
  - ✓ **Value-adding: renewal, cross/up-sell**
  - × **Value-destroying: lapse, claim event**
- Models can be built for above events (retention model, loss model, cross/up-sell model)

고객 라이프사이클 관리 (Management)

Once acquired, approach each customer according to their current status in the lifecycle:

- Less cost to retain existing customers, than acquire new ones
- Manage better relationship with individual customers
- Design long term plans for customers to maximize customer lifetime value

Thank you for your Interest !!

감사합니다!

APPENDIX

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Big Data global use case #1

New online channel for retail home insurance in France

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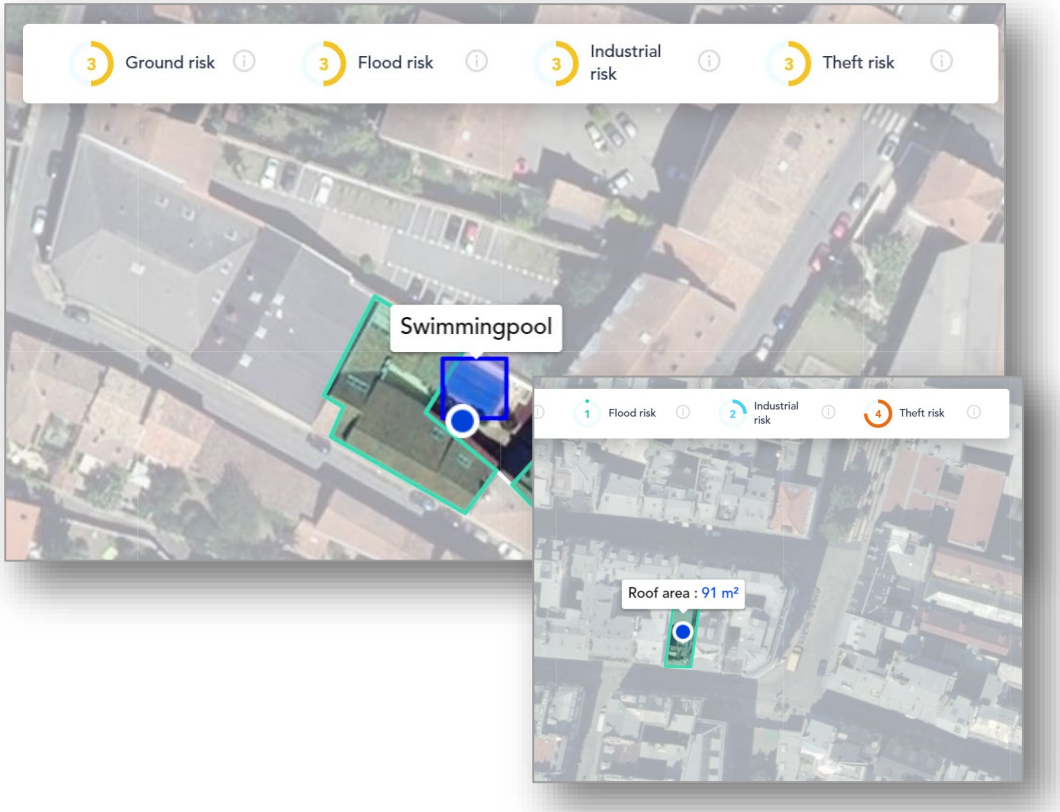

Previous status

- Relatively long process to purchase home insurance, with numerous questions
- Leads to higher customer dropout rate and less customer satisfaction

Current status (what Big Data we used)

- Satellite imagery and AI to identify risk attributes (e.g. swimming pool)
- Big data on natural catastrophe risk (e.g. flood) for every address
- To be enhanced with building data such as the number of floors
- **Faster and more automated “delightful” underwriting and quotation process**

Big Data global use case #2

Effectively steering the growing motor portfolio in India

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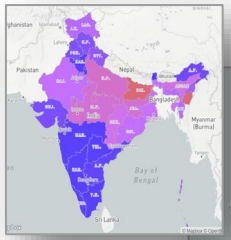
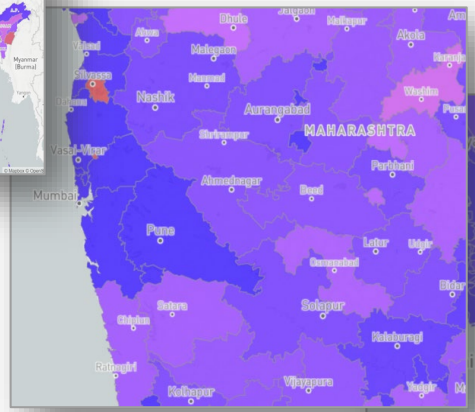
Prosperity levels in India (blue = prosperous)

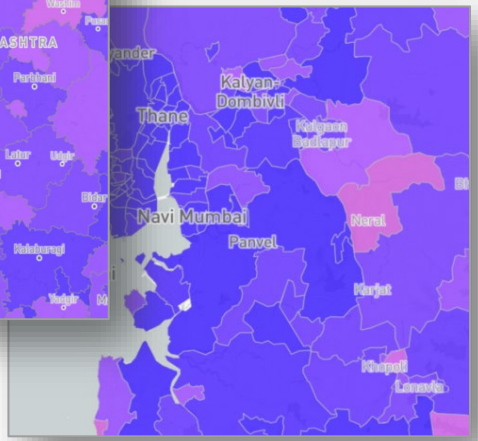
India



Districts in Maharashtra



Postcode level data



Previous status

- Significant vehicle population growth and infrastructure improvement
- Consumer trends and buying power also differs significantly across India
- Unclear on how to grow effectively in a huge and diverse country of India

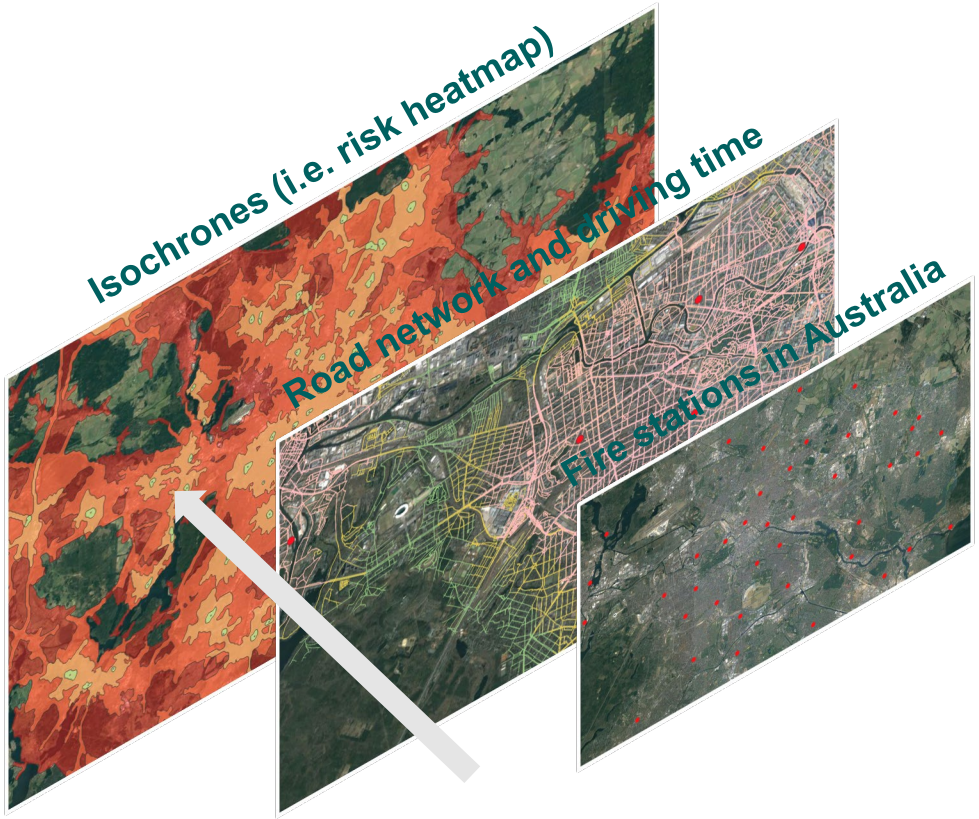
Current status (what Big Data we used)

- 20+ socio-economic and financial crime indicators across 19,000+ postcodes
- Vehicle population and accident statistics and trends by state
- Big Data is used to **identify growth and cautious areas at postcode level**
- **Effective portfolio steering** and strategy powered by Big Data

Big Data global use case #3

Enhanced underwriting of property risks using geo-spatial data

Munich RE



Previous status

- Highly competitive property insurance market in Australia, no regulated tariff
- Existing pricing is very sophisticated and allows for all traditional rating factors

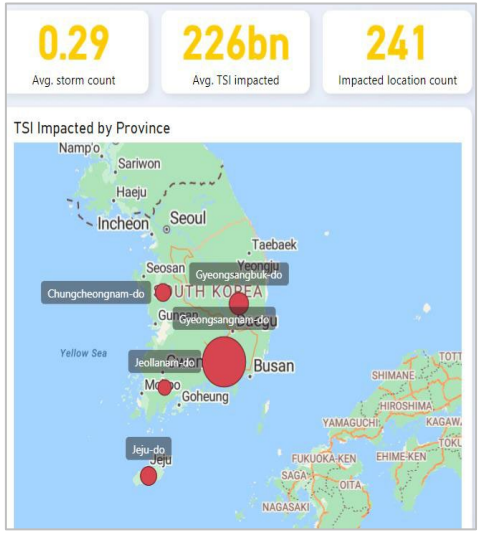
Current status (what Big Data we used)

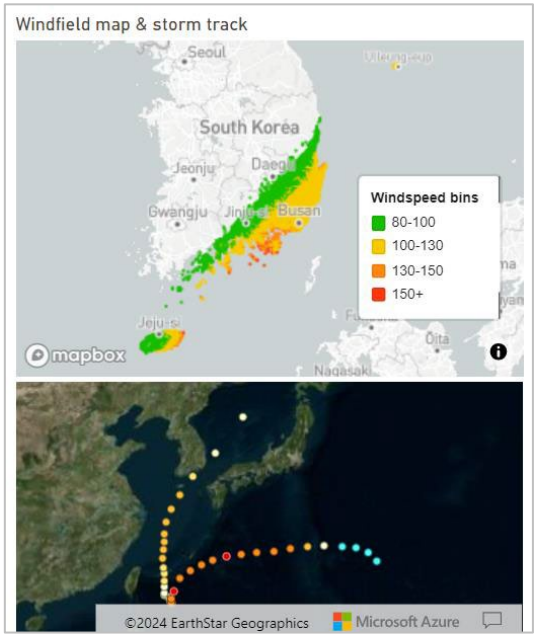
- Gathered points of interest (POIs) such as police stations and fire stations
- Computed driving distance and driving time from all possible locations (by grid)
- Created risk heatmap which represents additional rating factor for property risk
- This additional rating factor was proven to significantly **predict property risk**
- Big Data enrichment resulted in **more competitive tariff** for our client

Big Data global use case #4

Identifying risk accumulations and incoming events for Pacific typhoons

Munich RE





Previous status

- Insufficient transparency of cat modelling results and risk accumulations
- Delays in identifying potential exposures after a severe typhoon event

Current status (what Big Data we used)

- API integration to typhoon tracks published by international recognized source
- Typhoon tracks converted to transparent and useable wind-fields
- Identification of risk accumulations based on past typhoon events
- Tracking of future typhoon events with potential risk exposures identified
- More effective steering and management of property portfolio