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FWD INSURANCE: SMART INSURANCE FRAMEWORK – AI EVERYWHERE

Winner of Celent Model Insurer 2022 Award for Data, Analytics, and AI

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March 16, 2022

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CASE STUDY AT A GLANCE

This case study was made possible by contributions from the FWD Insurance team. Contributing credits goes to Dr. Yao Yuhui, Sally Lee and, Stephanie Lim of FWD Group Office.

The FWD Group Data team developed a smart insurance framework, an AI-everywhere approach that aims to transform the insurance journey by leveraging advanced technologies and artificial intelligence (AI) power.

Table 1: Case Study at a Glance

Financial Institution	FWD Insurance
Initiative	Insurance Framework—AI Everywhere
Synopsis	FWD is focused on making the insurance journey simpler, faster, and smoother, with innovative propositions and easy-to-understand products, supported by digital technology. The FWD Smart Insurance Framework is an AI-everywhere approach that aims to transform the customer insurance journey by leveraging advanced technologies and AI power. This was possible with the close collaboration between FWD's Group Data team and country teams, who leveraged advanced analytics to build in-house AI models such as AI Next Best Offer, and AI Lapse Prevention to improve the customer experience.
Timelines	1. AI Next Best Offer + Customer 360 (Thailand): a. Project duration: 12 months b. Soft launch: October 2019 c. Official launch: February 2020 2. AI Lapse Prevention + AI Voice Bot (Philippines): a. Project duration: 4 months b. Soft launch: September 3, 2021 c. Target official launch: February

	2022
Key Benefits	1. AI Next Best Offer + Customer 360 (C360) Customer prospecting and conversion are managed through AI C360, which provides a holistic view of FWD's customers' insurance needs at the product category level to agents for cross-selling/upselling. Additionally, C360 offers an AI prediction of the next-best product for each customer, with over 80% accuracy in its application in Hong Kong SAR, Thailand, Singapore, and Vietnam. The combined use of AI Next Best Offer and C360 in Thailand doubled the uplift in policy sales from 2019 to 2020, and top-performing agents also successfully converted up to 55% of the leads assigned for cross-sell. Customer persistency rates also saw uplift among customers who were contacted by telesales agents and serviced by using C360. 2. AI Lapse Prevention + AI Voice Bot At FWD Philippines, the output from four AI models (High Risk to Lapse, High Risk to Surrender, High Propensity for Win Back, and Cross-sell for Next Best Offer) was integrated with Customer Intelligence 360 to alert them to customers with policies at risk of lapsation. FWD contact center agents can now undertake early and appropriate intervention to improve timely policy payments. Subsequently, the launch of Lapse Prevention initiatives in May 2021 saw the use of machine learning (ML) models and AI Voice Bot call (AIX+) technology. Email was sent prior to automated outbound calls to customers with policies due for payments and with a higher likelihood to lapse. The retention rate for High Risk to Lapse customers improved by 4%, and contact rates for customers improved by up to double, using AI Voice Bot versus agents from the Conservation team. The AI lapse models provide insight to allocate resources efficiently and target higher risk cases to pay renewal premiums via AI

	Customer 360. FWD has also developed five AI lapse models in Thailand, each of which is tailored to various bancassurance and agency subchannels. As a result, the payment success rate has improved from 7% to 11% from the fourth quarter of 2020 to the first quarter of 2021.
Key Vendors	AWS, Informatica, Hortonworks, G-able (Thailand)

Source: FWD Insurance

CELENT PERSPECTIVE

The ability to design, describe, and execute a groupwide data strategy framework with a centralized platform and data lake on Amazon Web Services (AWS) for the Customer 360 Dashboard and data analytics models showcase the integrated data ecosystem concept. Led by the FWD Group Data team, they showcase the winning strategy of business, data, and technology integration. The awareness for data integration, data governance processes, and data quality checks, together with support from management and a push for organizational data literacy help develop the culture needed to place data initiatives as the core of the modern insurer.

- The ability to orchestrate an overarching data strategy with the FWD Smart Insurance Framework provided data-centric guidance for developing analytics and AI/ML initiatives. This places data management at the core of the insurer, which shows an understanding of using data as the foundation for insurance innovations, and complements the data-heavy nature of the insurance industry.
- This winning case study showcases an important consideration for the digital-first, next-generation insurer to support operations with strong data applications with consideration from management support and future data literacy efforts. The innovation stems not only from the technical implementation of the AI/ML initiatives (which was highlighted in the Philippines and Thailand use cases) but from the overall awareness of executing a framework for groupwide data transformation. The scale of this case study can be a good reference for insurers who are looking to modernize their current infrastructure with upcoming data-driven initiatives.
- The Smart Insurance Framework and the Group Office Data Platform (GODP) was described in detail, and the accompanying interview for the nomination submission of Dr. Yao Yuhui, Group Chief Data Officer for FWD Insurance, showcased the importance of leadership execution and successful partnership between the insurer and its technology infrastructure provider.
- The focus of bringing together the business management, the salesforce, and the customers in the design of a data-driven and customer-led framework by the FWD Group Data team makes this a Model Insurer for the Data, Analytics, and AI category, because it illustrates how data initiatives can deliver real business values to the stakeholders through an ecosystem of partnerships, data integration, and education with management support. At the same time, FWD ensures that its operations are secured by strong data governance to provide privacy protection and security with high data quality.

DETAILED DESCRIPTION

Traditionally, the insurance industry has been slow to adopt new technologies and is often associated with business practices that come with pain points, such as industry jargon, clunky tools, and difficult claim processes. Today, however, digital technology advancement has made it possible for FWD to continue to reshape the insurance landscape, which enables it to deliver operational efficiency and accelerate the creation of more accurate AI models to improve the customer experience across all touchpoints.

Introduction

FWD has a vision of changing the way people feel about insurance and, with a legacy-light, digital-first model, has been able to adopt new technologies and explore opportunities to accelerate the use of AI. FWD deployed numerous techniques such as providing tailored quotes to customers and risk alerts during onboarding, enhancing the repurchase journey and making faster claims payouts.

Through a continued focus on innovation, proprietary digital tools, and data analytics, FWD has made its customers' insurance journey simpler, faster, and smoother, providing them with an experience that the insurer believes is best in class.

The Smart Insurance Framework enabled FWD to extend beyond its core services and use data to create new value propositions to meet its customers' evolving needs. To create a simpler, faster, and smoother customer journey experience, FWD recognized the need for a modern data architecture framework that improves operational efficiency.

In June 2020, FWD built a Group Office Data Platform (GODP), which streamlines and integrates customer data in a single platform that is smart, secured, and scalable. This platform allows business users to harness data and insights and run analytics across its markets to help support a spectrum of initiatives. FWD's operations are secured by strong data governance to ensure privacy protection and security with high data quality.

Table 2: FWD Insurance Snapshot

Year Founded	2013
Headquarters	Hong Kong SAR
GWP	US$5 billion, accumulated figures since 2013
Assets	US$62.6 billion
Geographic Presence	10 markets in Asia (Cambodia, China, Hong Kong SAR & Macau SAR, Indonesia, Japan,

	Malaysia, Philippines, Singapore, Thailand, Vietnam)
Employees (2020)	6,400, including group employees, with 36,000 agents
Other Key Metrics	9.9 million customers and 19 bancassurance partners and 24 ecosystem partners in the region (as of June 2021)
Relevant Technologies and Vendors	Cloud/hybrid cloud, API, AI/ML (NLP/NLG, NLU, machine vision, decisioning), conversational AI or IVA, data management technology (e.g., data lakes, data fabric, next-gen electronic direct mail [EDM]), data science, and data governance procedures.

Source: FWD Insurance

Opportunity

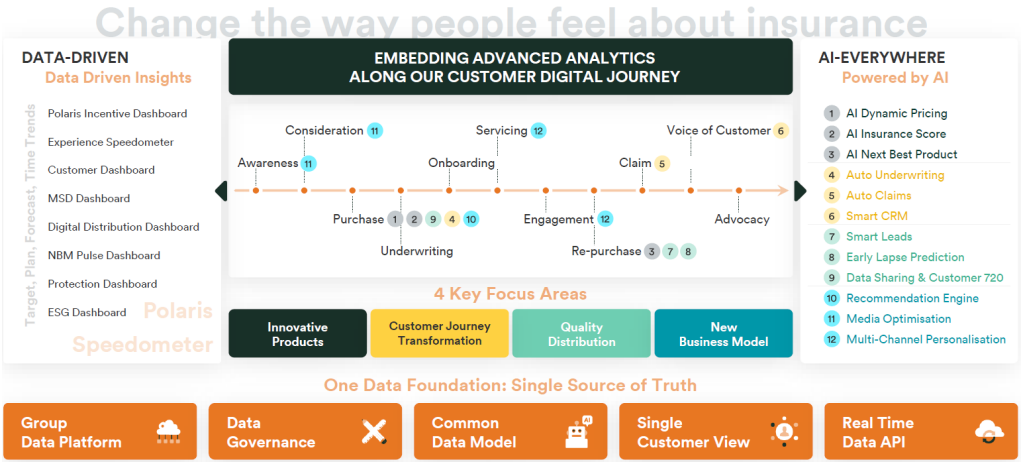
Distribution channels, including FWD telesales agents in Thailand, previously encountered challenges in their day-to-day interactions with customers, ranging from the lack of a single customer view to toggling multiple systems and screens to retrieve customer information. Limited use of data analytics and insights also meant that resources were not optimized, and a lack of a unified view meant that customers were not receiving personalized customer experiences.

With today's digital technology, FWD can use customer data insights to help them make critical business decisions and develop fresh solutions for their customers, strengthening customers' trust and confidence that FWD will be there when they need it most.

Solution

The FWD Smart Insurance Framework is an AI-everywhere approach that aims to transform the insurance journey by leveraging advanced technologies and AI power. The smart insurance framework in Figure 1 illustrates how an integrated single source of data and AI technology can empower the insurance value chain and customer journey.

Figure 1: FWD Smart Insurance Framework



Source: FWD Insurance

The feature of the GODP platform includes:

- **Data standardization through a single source**
  - Consolidation of all FWD data from heterogeneous systems into a single secured platform ensures groupwide data standardization, data confidentiality, and metrics consistency.
- **Self-service business intelligence (BI)**
  - Facilitates management and business users with key data intelligence and analysis on the go, enabling them to make smarter decisions. The powerful visualization data dashboards offer users a good grasp of their business measurements across FWD markets in a timely manner.
- **Real time processes**
  Real time processes remain up to date with business demands and customer expectations by processing huge amounts of data in real time.
- **Continuation of AI capability advancement**
  Advancement of AI capabilities maximizes business value and operational efficiency by feeding in the latest customers' data and preferences, which continue to better FWD in-house AI/machine learning capabilities.

Technology and Implementation Challenges

To develop the Smart Insurance Framework, FWD faced several challenges that they had to overcome:

- **Poor data quality and different technologies used by IT applications**
  Each department had its own IT applications and customer data storage, which accumulated to over 6,000 tables of data. This led to inconsistent and poor data quality. For instance, 20% of customer phone numbers were invalid. IT applications were using different technologies, and there was difficulty in integrating data into a single platform.

  A centralized cloud data lake and data warehouse on AWS helped to create a C360 Dashboard. FWD also implemented data governance processes to

address issues such as data quality, guided by a set of core principles to ensure compliance and transparency. The centralized cloud data lake and data warehouse also provided the flexibility to use a range of analytics and AI tools to build the advanced analytics models.

- **C360 Dashboard initial requirements failed to satisfy user expectations**
  Phase one of the C360 Dashboard spanned 12 months: from requirement gathering to design, development, and user acceptance testing (UAT). During UAT, the testers from the telesales team faced challenges for the validation of data models. This was due to initial requirements being submitted without actual user inputs, which resulted in the dashboard failing to satisfy user expectations. This process was subsequently redesigned and caused a significant delay to the project timeline and added costs.

  A pilot version was rolled out to four telesales agents in October 2019 to test the viability of the dashboard. In February 2020, it was launched to 40 telesales agents. Subsequently, new AI features and design improvements were released in the following two years. One of the most recent achievements includes the launch of the C360 Pilot to the agency channel, consisting of 14 agents.

FWD recognized that IT support from local markets was paramount to the implementation and integration of AI models with existing systems. The Group Data team sought early approval from FWD Group's executive committee, followed by market roadshows to seek approval from country CEOs, senior management, and business users, which ultimately ensured that the AI initiatives were prioritized with adequate IT resources allocation.

Results

Through the Smart Insurance Framework and GODP, two notable key deliverables are:

1. AI Next Best Offer + C360

In Thailand, FWD AI Next Best Offer model helps to identify products for high-potential customers and are prioritized for telemarketing calls. FWD created a C360 dashboard to display the latest information on customers' policies and claims, which was then integrated with AI recommendations, using data science techniques. These insights provide FWD agents with a deeper understanding of their customers, allowing the insurer to craft a personal touch and deliver a best-in-class customer experience.

AI Next Best Offer harnesses data and AI to improve upsell/cross-sell campaign conversion rates. The display of intelligent recommendations on the C360 Dashboard also helps agents and telemarketers improves their productivity. Figure 2 shows the benefit of the C360 platform.

Figure 2: FWD Thailand Next Best Benefit and C360 Benefits and Techniques

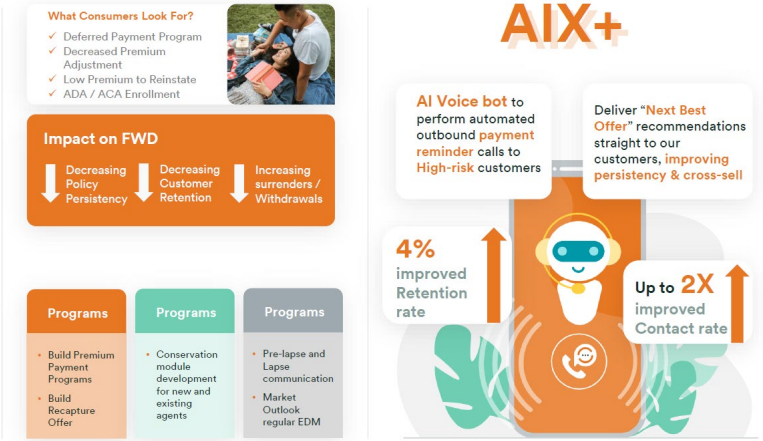
Source: FWD Insurance

2. Conservation Framework: AI Lapse Prevention + AI Voice Bot

Prolonged lockdown due to COVID-19 has had an impact on the insurance industry in the Philippines. With increasing unemployment rates, the need to protect basic needs often surmounts the perceived need for insurance protection, which has caused an increase in customers surrendering their policies before maturity or lapsing in payments.

At FWD, customers are at the heart of everything. FWD understands the need to adapt to a changing landscape while balancing the importance of staying insured. FWD set up a dedicated taskforce to understand its customers' pain points and expectations via telesales surveys and agent feedback. As illustrated in Figure 3, a conservation framework was developed to introduce new solutions such as a payment grace period and premium payment programs.

Figure 3: FWD Philippines Conservation Framework

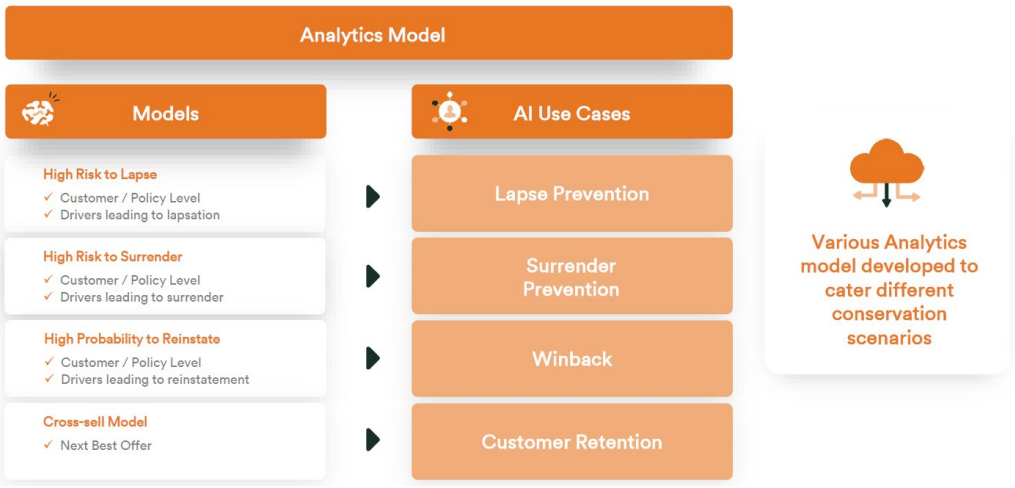


Source: FWD Insurance

The FWD Data team analyzed historical customer behaviors, providing key insights to facilitate decision-making. FWD built and integrated four data analytics models (High Risk to Lapse, High Risk to Surrender, High Propensity for

Win Back, and Cross-sell Next Best Offer) into the call center's C360 and AI/ML chatbot to support ongoing efforts to retain customers better. The models predict the likelihood of a customer with lapsed policy to be reinstated, design personalized campaigns, and recommend preemptive actions to retain customers. Figure 4 shows the models built and the appropriate use cases for lapse preventions.

Figure 4: Analytics Models to Support Conservation Programs



Source: FWD Insurance

Powered by AI and delivered with malasakit (empathy/care), FWD aims to meet its customers' needs and improve the customer experience and persistency rate in the Philippines.

The use of data allowed FWD to evolve and predict customer responses more accurately, develop a better understanding of customer needs and behavior, and in turn serve them better. By taking advantage of real time information, FWD can provide personalized experiences, upsell/cross-sell more relevant products to the right segments, and retain valuable customers, thereby improving the customer journey.

The Smart Insurance Framework

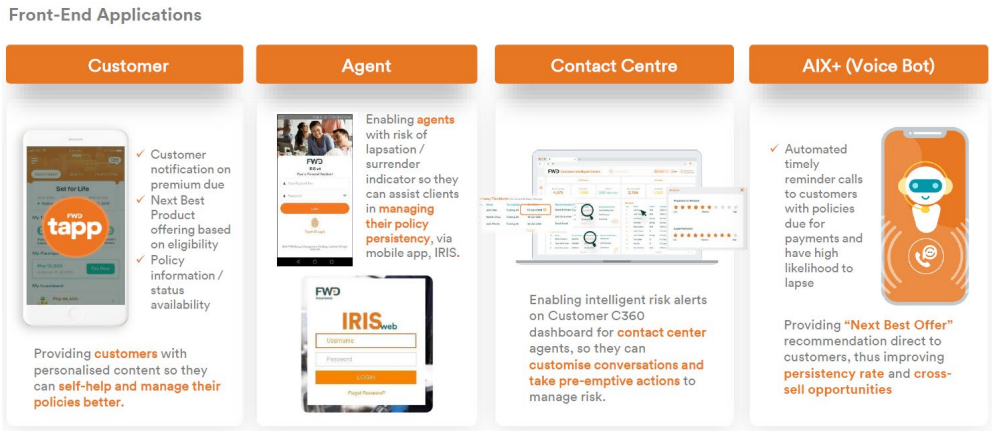
Under the Smart Insurance Framework, the GODP integrates all disparate data sources into a centralized data lake. The Smart Insurance Framework was developed to infuse AI along the entire customer journey, provide intelligent customer experiences, and streamline the various touchpoints.

With the approval from FWD Group's Executive Committee, the Group Data team conducted several roadshows to local CEOs, senior management, and business users to share the new AI-driven initiatives, prioritize focus areas, and align on a common strategy across their markets. FWD appointed data leads across its markets; they worked closely with the Group Data team, comprising data partners, data architects, and data engineers.

To achieve the Smart Insurance goals, FWD took an innovative approach by leveraging its customer data for a single-customer view. With a single-customer view, FWD can analyze historical customer behaviors and provide key insights to facilitate the teams' decision-making to deliver improved customer experiences.

For instance, the four AI models under the Philippines' Conservation Framework integrate with the Customer 360 Dashboard in FWD's contact center and front-end applications such as AI Voice Bot and FWD TAPP, a self-service insurance app, enabling timely payment reminders and delivering Next Best Offer recommendations directly to customers, which improves persistency and cross-selling. The front-end applications are illustrated in Figure 5.

Figure 5: Analytics Model Intelligent Indicators at Front-end Applications and Touchpoints



Source: FWD Insurance

FWD intelligent alerts on Thailand's C360 Dashboard enables telesales agents to take appropriate actions instantly, either to retain customers or to offer personalized product recommendations.

Lessons Learned and Future Plans

The alignment and support from senior management in the FWD Group Office provided the support for early digital adoption and has propelled FWD forward as a data-driven organization. Due to this digital-first and data-driven ethos, several innovative applications of AI/ML technology have driven business performance and improved customer experience.

Data analytics and AI architecture serve as FWD's central building blocks and empower its entire operations and functions, from customer engagement, distribution, and partner enablement to operation automation and intelligent management of customers' policies. With AI analytics implemented in eight out of ten markets, FWD is committed to using data analytics to gain insights into its customers' experience and support various aspects of its business operations. FWD applies data analytics and AI across sales, underwriting, claims, policy administration, actuarial, collections, and finance functions to automate processes and enhance operational efficiency. FWD has implemented an AI-driven, automated underwriting engine to provide a faster and simpler

underwriting process to customers. FWD also expanded its team of data scientists, data engineers, and data analysts, representing approximately 40% of its total headcount at the Group Office level as of September 30, 2021. FWD has set out to redefine distribution with a digital heart and human touch by digitally transforming traditional channels and building new ones. FWD believes that its innovative technologies and tools have been well received by its partners and have significantly boosted their productivity.

Summary

A clear aspiration for a best-in-class customer experience guided FWD's development of the Smart Insurance Framework. Its vision, changing the way people feel about insurance, sets the strategy for innovative and customer-led ideas.

In addition, FWD's core values underpin two characteristics in the organization's work ethic: "caring" and "innovative." FWD's customer-led approach demonstrates the insurer's care toward the lives of its customers and its mission to recommend products and services that best meet customers' needs. FWD promotes continuous financial education, and frequent customer interactions have helped ensure that customers understand the importance of being protected.

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