Yellowbrick

Real-time analytics in insurance

Industry Whitepaper

SYSTECH

Success in the insurance business depends on understanding, evaluating, and pricing risks. That's hard enough in a predictable environment, but today's insurance companies must now rapidly adapt to much more varied and unpredictable business situations than they could possibly have anticipated even a short time ago.

Overview

The impact of these changes accelerates the need for digital transformation within the insurance industry. Before the pandemic, most major insurance companies were content to do business as usual, with gradual alterations as needed to support customer self-service or more digital options. Many of the largest U.S. insurance companies have been in business for a hundred years or more and rely on those legacies to ensure their future competitive position.

All that history means there are a lot of legacy systems, established business practices and procedures, and often a real resistance to going all-in on more aggressive digital transformations. Whereas small, technology-focused insurance companies (often known as "InsureTechs") selling to tech-savvy millennials have nipped at the heels of major insurers for the past five years, they haven't had enough breadth, reach, or experience to alter most large insurance companies' business plans.

For insurance companies, the pandemic was a wake-up call that highlighted a lack of preparedness for making a rapid (and lasting) switch to a more digital world. As a result, insurance companies have started reevaluating new technologies such as robotic process automation, intelligent document processing, and artificial intelligence.

For insurance companies, even ones with long, successful histories, the future is not the past. Insurance companies need to focus more aggressively on transformative projects that will build long-term, innovative foundations. This industry, like many others, needs to be more agile and more responsive and to look at customers and opportunities in completely new ways. Traditional approaches with internal siloed systems based on line-of-business limitations can no longer support continued growth.

In effect, the fallout from the pandemic has created a real sense of urgency for committing to fundamental digital transformations within insurance companies. The companies that can capitalize on this urgency and transform their systems and processes while maintaining their decades or centuries of legacy expertise will be able to capture a greater share of the market while positioning themselves to easily expand into new lines of business with new customers in new ways in the future.

Analytics Challenges and Opportunities

Capitalizing on this unprecedented opportunity for change in the insurance industry requires a focus on data and analytics. Almost all the potential opportunities that insurance companies seek are directly driven by data or the ability to easily, effectively, and immediately analyze increasing amounts of data, including data from a wide variety of distributed data sources.

Analytics are more important than ever for insurance companies that want to be successful in this new, more volatile business world. With the right data and analytics, insurance companies can save and make millions by acquiring more new customers, removing risk, detecting fraud, building complete customer views, and reducing underwriting time. They also can increase profitability by speeding up data analysis and modeling capabilities. But achieving all of this will require a more complete, data-driven view of the customer journey as well as new ways to optimize that journey.

For example, according to McKinsey & Co., personalized marketing cuts customer acquisition costs by as much as 50%, stimulates growth in revenues and customer satisfaction by 5% to 10%, and increases marketing returns by a factor of 5 to 10. It also will require faster and easier ways to integrate and leverage existing, disparate systems to provide consistent and unified analytical capabilities across different lines of business. Insurance companies need to integrate systems and data sources that may reside on-premises, in private clouds, in public clouds, or across multiple public clouds. And it all needs to be accomplished without ripping and replacing an insurance company's existing infrastructure. And one last thing—it needs to be able to be managed via a single view.

As another example of where modern analytics capabilities can play a critical role, insurers that don't know who their policyholders are, the policies and products associated with them, and other details are at risk of failing to meet

accounting standards. In 2019, one company paid $200 million in fines due to its inability to locate and reimburse policyholders. Here's a closer look at some of the analytics challenges currently facing insurance companies:

- **Increasing volume of data.** Insurance companies are wrestling with an increasing amount of data that will only continue to grow. Yet instead of spending resources analyzing that data and using it to drive profitability, most companies are finding that their analysts spend a significant amount of time identifying, selecting, and managing data rather than generating useful insights. For some companies, the workloads associated with end-of-month financial close processes, for example, can take days to run, leaving little room for error.

- **Multiple, disparate data sources.** Most large insurance companies have many fragmented, disparate systems and data sources. Those systems and sources might be confined to business units or product lines, hosted locally or in the cloud, but few are fully integrated in a useful way for real-time data analytics. On top of that, new sources of data are growing in number and volume all the time, from mobile devices to online sources, which means insurance companies are wrestling and wrangling more data than ever before.

- **Inability to access data in real-time.** To optimize underwriting, prevent fraud, and fine-tune the customer journey, analysts need to be able to access data volumes in real-time. Yet for many insurance organizations, that's too difficult or time-consuming. And access to detailed, individual records may not even be possible—instead, analysts are left to use lower-quality, summarized data sets.

- **Fragmented customer views.** Perhaps nothing is more critical for insurance companies moving forward than obtaining a single, consolidated customer view. And that requires an integrated data strategy and the ability to consolidate and analyze customer data from across multiple, disparate systems in a seamless way. Without it, there's no way to track the customer journey, optimize upsell or cross-sell opportunities, and build strong customer loyalty.

- **Outdated risk models.** Although modeling risks is a core requirement for insurance companies, risk models are too often built on outdated data or assumptions. In times when the environment, business trends, and personal habits are changing more quickly than ever before, insurance companies whose risk models can't keep up will be at a significant competitive disadvantage.

• **Increasing fraud levels.** Fraud is something that all businesses need be concerned with, and for insurance, fraud is a huge problem that accounts for 10% of all claims, by some estimates. To do fraud detection accurately, insurance companies need the ability to access and analyze all corporate data, not just data for individual product lines or systems. And although all these analytics challenges are real and important, there are also numerous analytics opportunities for insurance companies that are able to leverage all their data, no matter where it resides or how much of it there is. Analytics opportunities for forward-looking insurance companies include:

• **Faster loss ratio processing and financial close.** Companies that can process financial close-related workloads in hours, not days, have a considerable advantage over those that can't— because they not only understand their business better but can commit fewer resources to the effort.

• **Rich, 360-degree customer views.** It's critical for companies to create rich, 360-degree views of their customers in order to meet them where they are on their customer journey and identify and predict the best possible products and prices. Not only is there a new urgency to capture the growing millennial market (which is used to online interactions), but most traditional insurance companies have found their core customers shifting to online interactions as well. To truly provide an effective customer experience, insurance companies need to have all their customer data in one place to optimize risk modeling, marketing, claims processing, loyalty, the customer experience, and more.

• **Real-time adjustment of premium rates, strategies, and underwriting limits.** Although risk assessment is a core function of any insurance company, and most have significant investments in advanced risk-modeling capabilities, the bar continues to get higher, particularly when it comes to incorporating real-time data and enabling the real-time adjustment of everything from premiums to underwriting limits. In addition, strong analytical capabilities can enable insurance companies to establish portfolios of risk that lead to good business results. And existing systems that simply take too long to run reports or analyses and can't deliver analytics in real time are like boat anchors that will hold insurance companies back.

• **Proactive fraud prediction and prevention.** Fraud detection and prevention depends on huge amounts of current and past data, and the ability to analyze it quickly, so the analytical (and logistical) challenge of efficiently accessing and analyzing transactions as they happen can have a big impact on results. A more robust analytics capability can enable real-time discovery and situational awareness and can identify trends and patterns to proactively predict and prevent fraud.

• **More-accurate risk models.** Data is useful only when it's actionable. By leveraging increasing numbers of data sources, from the Internet of Things (IoT) to outside channels to social media to real-time data to more-granular data points, insurance companies with a good, integrated data analytics platform can build more-accurate risk models that will increase competitiveness and profitability. With the ability to process more data more quickly, companies can build more-accurate models that account for disruptions such as pandemics or other catastrophes. Super-fast analytics also enable insurance companies to quickly and accurately determine risk even for the most complex models.

• **Increased customer loyalty.** Better analytics can help organizations understand customer lifetime value better, evaluate campaign effectiveness and promotion lift, and determine customer stickiness. By applying data and insights, insurance companies can create tailored rewards and loyalty programs while providing state-of-the-art personalized customer service.

• **Ability to target the most profitable customers.** Large insurance companies have lots and lots of customers. But the trick is to identify and nurture the most profitable ones, and that requires significant amounts of data and analytics. With the right high-speed, integrated analytics solution, insurance companies can target their most profitable customers by using more- detailed customer segmentation combined with claims analytics, profitability analytics, omnichannel marketing analytics, and operational analytics. With consolidated data and real-time analytics, organizations can better understand customer needs, preferences, and behaviors and win more deals.

• **Increased customer conversions.** You can't generate new business without new customers. That's successful insurance companies need to be using advanced analytics to help increase customer conversations. The data and analytics can help in a variety of ways, including by providing the most

competitive offers for new customers, increasing the value of interaction at each customer touchpoint,and optimizing the customer onboarding experience. Analytical insights such as rating and risk scoring, funnel conversion analysis, dynamic pricing models, and competitive intelligence are crucial components of increasing customer conversions.

Real-time Analytics Requires a Different Kind of Architecture

Despite the glaring industry need for data warehouses that can process data at near-real-time speed, few existing solutions were designed for that requirement. Instead, most (including conventional cloud data warehouses)implement workarounds that involve"micro batching" of data for processing one step at a time (and almost always at extra cost), forcing many customers to use cases such as real-time fraud detection to build and manage parallel data architectures, which takes extra time, money, and resources. Instead, insurance companies should implement a modern data warehouse architecture that can process real-time and at-rest data side by side with lightning speed, without the added expense and management overhead of redundant systems. It's also important that this architecture enable the ingestion of data from virtually any source in batch, incremental, and streaming modes in conjunction with common data motion tools such as Informatica, Oracle GoldenGate, and Attunity when needed.

Need for Real-time Analytics

Although insurance companies have mostly dealt with historical data for everything from claims to underwriting, it's becoming more important than ever to incorporate and analyze data in near-real-time across the organization. Of course, insurance companies don't necessarily have the same need for real-time data processing that a process manufacturer or telecom might have, with sub-second timing constraints, but nevertheless, it is critical for them to start leveraging the latest data from internal and external sources to optimize processes and products as quickly as possible.

Today, too many insurance companies' business analytics and decisions are hobbled by existing systems that take hours or days to run reports. Because of existing limitations, distributed data challenges, and slow processing, many types of critical business processes simply can't be accomplished in anything approaching real-time, leaving business analysts and decisions to wait hours or days.

Real-time speed is important for building great customer intimacy. From increasing customer conversions to retaining and growing the existing customer base to targeting the most profitable customer segments and rewarding customer loyalty, the timelier the back-end analytics are, the more customized and successful the customer interactions will be across all possible channels.

And of course, real-time analytics is a vital component of an effective fraud detection system, where up-to-the-second transactions need to be processed and decisions made immediately in order to detect and shut down possible fraud.In short, to compete effectively, insurance companiesmust have real-time analytics that can process enormous volumes of data to provide real-time insights, real-time quoting, real-time reports, and more.

De-risk Your Cloud Migration

Many, if not most, insurance companies are on one kind of cloud journey or another to take advantage of cloud computing's proven advantages. However, few can afford (or want) to take risky, expensive, all-or-nothing migration to a single public cloud provider; instead, they need a thoughtful, low-risk strategy that takes requirements such as compliance and data sovereignty and gravity into account, and that avoids platform lock-in.

For those companies, a distributed cloud architecture for data warehousing allows them to bring analytics to the data wherever it is, not data to the analytics—and to manage all that data wherever it's located via the same management, security, and governance protocols.

Need for Distributed Cloud Architecture

One of the biggest challenges facing insurance companies, especially large ones or ones that have grown through acquisition, is how to integrate, collect, and analyze data from across distributed systems quickly and easily. Too many insurance companies are faced with the situation where the critical customer or product data is locked up in siloes, not easily accessible for deeper analysis. At the same time, insurance companies are facing a growing need to integrate data from third-party sources. In fact, most companies are now recognizing that they need to be able to integrate and use data from multiple, disparate sources. And in the future, there's a strong possibility that insurance companies will even be using data generated out at the edge of computer networks, by IoT devices that generate data that needs to be analyzed in near real-time.

The future for most companies, in short, is a distributed cloud environment, where processing, data, and analytics must occur across a web of multiple on-premises systems, private clouds, public clouds, and even edge devices. Distributedclouds are characterized by a mesh of interconnected physical and virtualized infrastructure, forming a best-of-breed, logical cloud-managed via a single, unified view.

For insurance companies accustomed to making decisions based on single sets of data housed in discrete applications located on-premises, this is a complete revolution. And it's one that is already happening, whether companies want it to or not. To be successful going forward, insurance companies must move from a mindset in which all their data is local and all processing and analytics are limited to individual systems to the mindset of the distributed cloud. They must build analytical infrastructure that can easily and transparently integrate and use data from any point of a distributed cloud, in real-time.

Transforming Insurance Analytics with Yellowbrick

Today's insurance challenges demand a modern data analytics platform that can handle any data scale or complexity, from terabytes of data to distributed clouds. But it needs to be delivered at a predictable price and without a massive investment in technology or new skill sets.

To do all that, in an effective and affordable way, what's needed is not more large-scale IT science projects, but a new, more practical approach, one that Yellowbrick Data Warehouse can deliver.

Yellowbrick Data Warehouse is a fully modern platform that offers the best price/performance economics and flexibility for data analytics that insurance companies can buy. Using Yellowbrick gives insurance companies the opportunity to unify their vast amounts of data to drive more-complete customer views and achieve faster business processes and analytics, more-accurate risk models, and new ways to integrate and use real-time data. And, migrations are quick (in weeks, not months or years) and easy, making the adoption of cloud data warehousing faster and less risky.

The following are just a few examples of how Yellowbrick can help insurance companies succeed:

• **Deeper customer insights.** Yellowbrick turns fragmented customer information into rich, 360-degree customer views to power everything from up-sell and cross-sell, to customer loyalty, to compliance.

• **Faster, better business and pricing decisions.** Because of its unique, redesigned analytical architecture, Yellowbrick can handle an almost unbelievable volume and complexity of data at blazing speed, allowing insurance companies to adjust premium rates, strategies, and underwriting limits based on real-time variables.

• **More strategic portfolios.** By using more data for deeper, more accurate analysis, Yellowbrickcan help establish strategic portfolios of risk that lead to better business results.

• **Decreased instances of fraud.** The faster insurance companies can identify fraud or the more accurate their fraud prediction systems are, the less fraud exposure they'll have. Yellowbrick enables real-time discovery, greater situational awareness, and faster identification of trends and patterns that can be used to proactively predict and prevent fraud.

• **More accurate and up-to-date risk models.** Yellowbrick's amazing speed and ability to run complex models with more-detailed and historical data helps insurance companies build more accurate models that can drive greater profitability. By using Yellowbrick, insurance companies can calculate risk more quickly and accurately for even the most complex models.

• **Real-time speed.** Yellowbrick delivers real-time speed for dynamic underwriting, customer service, and other critical tasks, delivering answers faster and allowing insurance companies to go deeper into their data to get more accurate answers.

• **Future flexibility.** Insurance companies simply can't wait hours or days for answers to analytical questions. Yellowbrick's world-class analytical horsepower enables insurance companies to easily and cost-effectively explore new business opportunities, such as new products and rate classes.

• **Ability to address challenges of distributed data.** The future of data is distributed clouds. To stay competitive, companies need to be able to seamlessly access, migrate, and analyze data from across distributed sources, within the

organization and from outside an organization. Yellowbrick is the first data warehouse capable of integrating into the new distributed cloud environment, allowing organizations to easily deploy, manage, and orchestrate data warehouse workloads across private cloud and public cloud environments, and eventually, to the network edge.

Yellowbrick is also compliant with industry standards, has deep security and data privacy controls, and plugs seamlessly into existing environments, enabling insurance companies to leverage existing investments in BI, data migration, and identity management tools.

About Systech

Systech Solutions delivers measurable value, fast. They accomplish data and analytics initiatives 2Xfaster for 2X lower cost than most providers. With an unsurpassed technical breadth and depth along with 25+ years of industry experience, Systech is a leader in its field, having executed thousands of data strategies and management projects for businesses across verticals with a 100% success rate. To learn more about Systech, please visit: **www.systechusa.com**

Summary

With respect to data analytics modernization, insurance companies can't afford to be left behind. Yellowbrick is the modern data warehouse designed to solve the complex challenges of analytics for financial services institutions. It's easy to migrate to and delivers performance at a low cost, to diverse communities of users, giving superpowers to database teams that need to balance core data management with ad hoc user access. Yellowbrick is unique in allowing customers to correlate data from every aspect of an organization's operations seamlessly in a Distributed Data Cloud. No one runs data warehousing workloads faster and more efficiently than Yellowbrick.

Intrigued? Find your biggest, most complex data set and most important business challenge and invite us in for a Yellowbrick test drive. We'll show you how high-speed data analytics can redefine your business opportunities. **www.yellowbrick.com/test-drive**

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