

CELENT



NEW BUSINESS AND UNDERWRITING SYSTEMS: NORTH AMERICA LIFE INSURANCE EDITION

2024 XCELENT AWARDS, POWERED BY VENDORMATCH

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EXECUTIVE SUMMARY

This report marks the seventh time that Celent has reviewed new business and automated underwriting (NBUW) systems available to life insurers in North America. Our prior report was at the end of the COVID-19 pandemic, which resulted in an increase in the number of NBUW systems being implemented.

In this report, we profile 20 NBUW systems, providing an overview of their functionality, customer base, technology, implementation, and support. The following vendors and solutions are included in this report:

- Accenture: ALIP New Business and Underwriting
- Agenium: New Business and Underwriting
- Appian: Appian Connected Underwriting Life Workbench
- Bestow: New Business and Underwriting Systems
- C2L BIZ Solutions Pvt. Ltd.: SymbioSys New Business and Underwriting
- Composable Analytics: Composable NB Underwriting Platform
- DXC Technology: DXC Assure New Business
- EXL Service: Life Digital Suite
- Hannover Re: hr|ReFlex
- Infosys BPM Ltd.: Infosys McCamish New Business & Underwriting Solution
- iPipeline: Resonant New Business & Underwriting
- Munich Re Automation Solutions: ALLFINANZ NOVA and ALLFINANZ SPARK
- Neutrinos: Neutrinos Life & Annuity New Business & Underwriting
- Reinsurance Group of America (RGA): AURA Next Underwriting Decision Management
- S.360 Life Underwriting: s.360 Life Underwriting SaaS
- Sapiens: UnderwritingPro for L&A
- Swiss Re: Magnum Pure
- Swiss Re: Underwriting Ease
- UnderwriteMe: Underwriting Engine
- Zinnia: The Policy Processor (TPP)



Advanced Technology 2024

This year's XCelent award winners for Advanced Technology for North America are:

- Accenture
- Agenium



Breadth of Functionality 2024

This year's XCelent award winners for Breadth of Functionality for North America are:

- Accenture
- Agenium



Customer Base and Support 2024

This year's XCelent award winners for Customer Base and Support for North America are:

- Sapiens

INTRODUCTION

As mentioned in our 2022 report, the pandemic forced life insurers to digitize rapidly, particularly in the new business and underwriting processes. As insurers competed for business, they looked for ways to simplify their application process and offer competitively priced, fluidless, and fully underwritten products. Automated underwriting became a key part of these changes.

The pandemic forced life insurers to rethink their process and products, all while managing their mortality, financial, and operations risk. The lockdown forced sales activity to be online, over the phone, or by any other method that didn't require face-to-face contact.

This has changed over the last few years. Life insurance sales have reverted to face-to-face sales, with the agent being heavily involved for many products. However, the market continues to see a shift from captive agents to independent agents and financial advisors. Customers are looking for a more holistic view of their portfolio, including insurance to both them and their portfolios over their life span.

The move toward "fluidless" underwriting processes continues, with most insurers offering a product that can be sold in an accelerated manner. Now a majority of insurers embrace data-driven, automated underwriting for an expanded portfolio of products beyond simplified products. The integration of electronic application systems to back end, automated underwriting systems has allowed for some companies to offer instant decisioning for more than just low-faced term products.

Implementing technology that automates new business and underwriting functions helps insurers digitize their new business and underwriting, reduce unit costs, and improve margins. Automated underwriting processes significantly improve the client experience because they enable a faster, digital purchase experience—an expectation that grew exponentially during the pandemic. We noted this in 2022, and it continues to be true in 2024. Expectations of an improved sales experience, from both agents and consumers, continues to grow.

Through use of technology and products that allow for automated underwriting, insurers can improve the buying experience and attract new insurance customers. More insurers have been developing products that allow for data-driven analyses of risk because the technology and tools that support these products are in reach of even the smallest insurers. Systems continue to be integrated with a growing list of data providers that expand underwriting analysis beyond the historical risk evaluation. Underwriting algorithms increasingly are relying on artificial intelligence (AI) and machine learning to improve underwriting outcomes. With AI becoming

more mainstream, especially through large language models (LLMs), underwriting will continue to evolve. However, it is critical that any decisions made through AI be transparent. Gone are the days of black box decisions. The stakes are forcing this transparency.

All these changes are streamlining the underwriting process, using data and technology to make the life insurance sales process more appealing to consumers.

It is against this backdrop that Celent evaluated the solutions in the market. This report profiles many of the new business and underwriting systems available in North America today. These systems may offer a suite of tools such as a rules-driven eApplication, an underwriting rule engine, and an underwriting workbench. Some include case management capabilities.

In addition to this report, a companion report that in the past had been rolled into this report is being released. [So You Want to Buy a New Business and Underwriting System](#) outlines the latest developments in functional and technical capabilities in agent onboarding and commission systems and includes a glossary and key components guide.

These reports together should help insurers define their NBUW systems requirements and, where appropriate, create a shortlist of vendors for evaluation. Expanded new business and underwriting functionality and improved technology mean that insurers continue to have a wide set of systems and vendors to consider when looking for a solution to fit their needs. Insurers are encouraged to contact the authors of this report through analyst access to learn more about the vendors and solutions.

REPORT METHODOLOGY

Celent's objective in this report is to include as many as possible of the leading new business and underwriting systems being used or actively sold to insurers in North America. Celent actively reviews vendor systems in the insurance software market and invites the vendors to participate in reports like these.

Approach

To analyze the capabilities of NBUW systems active in the insurance marketplace, Celent invited a broad set of vendors to participate in this year's report. Not all vendors chose to participate. There was no cost for vendors to be included.

Celent used its unique VendorMatch platform to gather RFI data from each vendor. RFIs were completed for 20 products in the North American market. VendorMatch (<https://www.celent.com/vendormatch>) is the world's largest vendor and solutions data store—combined with analytical tools—to help financial institutions find, evaluate, and select a solution. This report presents certain extracts of that information. Each profile contains a link to the solution's VendorMatch profile where additional details about each product can be found, subject to the VendorMatch terms of use.

The RFI for this research gathered information across multiple dimensions, including:

- Company information
- Product overview
- Specific information about the vendor and the system—including, among others:
 - Functionality
 - Technology
 - Implementation and support
 - Commercial terms
 - Customer base and lines of business supported

Celent used that data to draft profiles but did not independently confirm the information provided by the vendors. Vendors had an opportunity to review their profiles for factual accuracy. Some of the vendors profiled in this report are Celent clients, and some are not. No preference was given to Celent clients for inclusion in either the report or the subsequent profile.

Demonstration

Each vendor was provided the opportunity to present their new business and underwriting system to Celent analysts. Each followed a scripted agenda that focused on product and rules configuration, workflow, usability, and functionality for internal users, and the overall architecture of the system.

About the Profiles

Each profile is structured the same way. Profiles present information about the vendor and its new business and underwriting offerings, geographic presence, and client base. Tables provide more detailed information about specific features such as functionality, technology, implementation timing, and partnerships.

The 20 profiles are presented in alphabetical order.

Limitations

Celent recognizes that the strength of any new business and underwriting system is somewhat dependent on an insurance company's needs and business. A solution ranked low in Celent's rankings may be a perfect fit for several insurers for various reasons, including price, business-specific functionality, target customer base, existing technology environments, or simple preference. For this reason, these rankings are purely the opinion of Celent. Insurers should use them in the context of their own specific situations.

Celent believes that this study provides valuable insights into current offerings in NBUW systems. However, readers are encouraged to consider these results in the following context. The vendors self-reported. Although we viewed a system demonstration, we could not confirm all the solution details and client base information self-reported by participants. The initial data collection commenced in July 2024, and the vendors have had the opportunity to update their profile information since that initial outreach.

As part of the VendorMatch RFI process, Celent gathered much more information about each solution than is reflected in this report. Subscription clients can leverage analyst access to connect with the author and learn more about the vendors. They can also use Celent's VendorMatch platform to review a vendor's online company and product profiles. Since the online database can be updated at any time, the online data may be more current than this report.

CELENT'S TECHNICAL CAPABILITY MATRIX AND XCELENT AWARDS

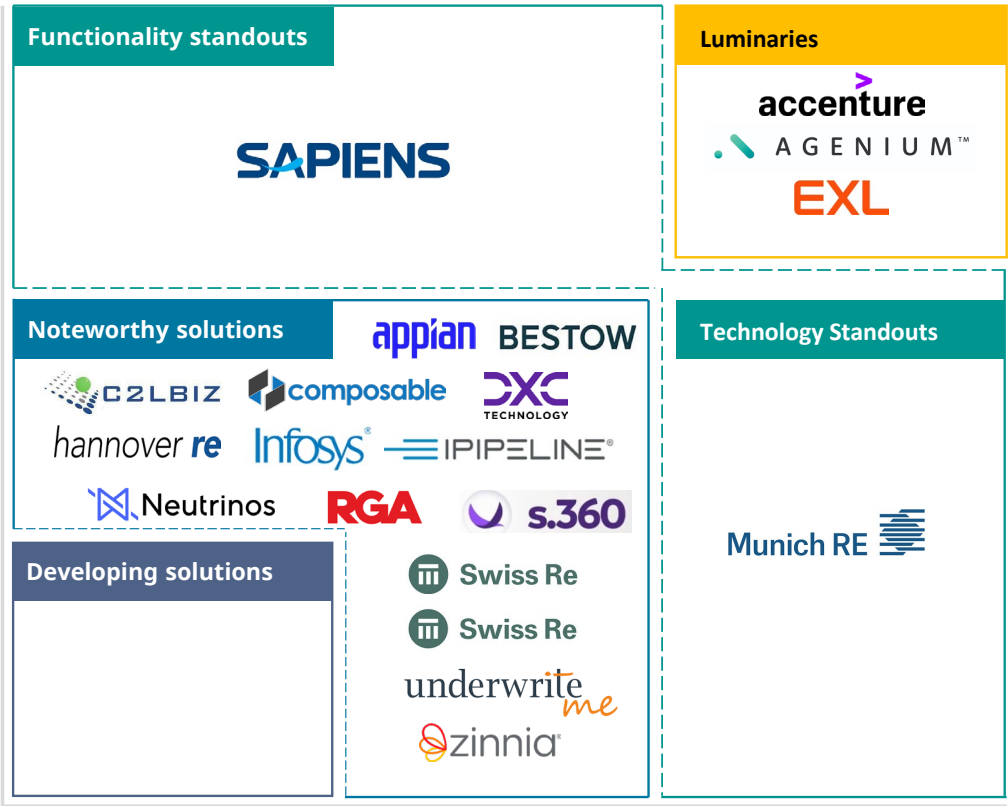
The Celent Technical Capability Matrix

Celent ranks vendors using a Technical Capability Matrix. We've placed each solution into one of five categories based on the sophistication and breadth of its technology and functionality (i.e., plotting the A and B dimensions). Solutions are not ranked within the assigned category; they are listed alphabetically.

The five categories are:

- **Luminary:** Excels in solution capabilities; generally, has a leading market presence.
- **Technology Standout:** Excels in technology modernity, although often without the same depth of features as leading competitors. Frequently newer, these solutions have chosen a focused set of functions with which to begin their journey.
- **Functionality Standout:** Excels in functionality and likely to have a large installed base. Often more established, these solutions have built out a robust set of features over many years.
- **Noteworthy Solution:** Potential challengers to the more established competition. They may occupy a niche place in the market, whether by targeted use case, sector-leading features, client size, or geography.
- **Developing Solution:** Typically, new to the market. They may have the potential to mature into a market challenger.

Figure 1: Celent Technical Capability Matrix



Source: Celent

XCelent Award Winners

For the best of the best, taking into account not only their prowess in technology or functionality, but also their customer base and the Celent analyst opinion drawn from their live demo, we once again are awarding the XCelent award. The XCelent award is presented to the top performers in Advanced Technology and the top performers in Breadth of Functionality.

The winners of the XCelent 2024 Awards for New Business and Underwriting Systems for the North American region are:



Advanced Technology 2024

This year's XCelent award winners for Advanced Technology for North America are:

- Accenture
- Agenium



Breadth of Functionality 2024

This year's XCelent award winners for Breadth of Functionality for North America are:

- Accenture
- Agenium



Customer Base and Support 2024

This year's XCelent award winners for Customer Base and Support for North America are:

- Sapiens

NEW BUSINESS AND UNDERWRITING SYSTEM VENDORS

The Solution Market

This section provides information about each vendor's client base and how those clients are segmented by size and geography.

Each vendor in this report offers a stand-alone new business and underwriting system. They support multiple lines of business and processes. These vendors range from small private companies, even startups, to public companies. Their global market coverage varies, with some just covering the North American market while others are available in other regions or globally.

Table 1: Vendor Preview

| Vendor | Product | Ownership and Size | Corporate Revenue | Year Founded |
|----------------------|--|--------------------------------|------------------------------------|--------------------------|
| Accenture | ALIP New Business and Underwriting | Public company | US\$64.1 billion (2023, corporate) | 2009 |
| Agenium | New Business and Underwriting | Private with outside investors | Not reported | MRS: 1988; Agenium: 2023 |
| Appian | Appian Connected Underwriting Life Workbench | Public company | US\$545 million (2023) | 1999 |
| Bestow | New Business and Underwriting Systems | Private | Not reported | 2016 |
| C2L BIZ Solutions | SymbioSys New Business and Underwriting | Private | US\$8.5 million (2023) | 2008 |
| Composable Analytics | Composable NB Underwriting Platform | Private | Not reported | 2014 |
| DXC | DXC Assure New Business | Public company | US\$14.43 billion (2023) | 2017 |
| EXL | Life Digital Suite | Public company | US\$1.63 billion (2023) | 1999 |

| | | | | |
|---|---|-----------------|---|------|
| Hannover Re Life and Health Reinsurance | hr ReFlex | Public company | €24.5 billion (2023) | 1966 |
| Infosys | Infosys McCamish New Business & Underwriting Solution | Public company | US\$18.55 billion (2023) | 1982 |
| iPipeline | Resonant New Business & Underwriting | Public company | US\$6.2 billion (2023 – Roper Technologies) | 1995 |
| Munich Re Automation Solutions | ALLFINANZ NOVA and ALLFINANZ SPARK | Limited company | US\$28.1 billion (2023) | 1986 |
| Neutrinos | Neutrinos Life & Annuity New Business & Underwriting | Limited company | Not reported | 2016 |
| Reinsurance Group of America (RGA) | AURA Next Underwriting Decision Management | Private | US\$18.6 billion (2023) | 1980 |
| S.360 | s.360 life underwriting SaaS | Public company | US\$1.5 million (2023) | 0 |
| Sapiens | Sapiens UnderwritingPro for L&A | Public company | US\$14.6 million (2023) | 1982 |
| Swiss Re | Magnum Pure | Public company | US\$50 billion (2023) | 1863 |
| Swiss Re | Underwriting Ease | Public company | US\$50 billion (2023) | 1863 |
| UnderwriteMe | Underwriting Engine | Limited company | Not reported | 2012 |
| Zinnia | The Policy Processor (TPP) | Limited company | Not reported | 2005 |

Source: Vendor RFIs

Table 2: North American Insurance Client Breakdown

| Vendor | Customer Base, North America | Total New NBUW Clients Since 2022, North America | Marquee North American Clients |
|-----------|--|--|------------------------------------|
| Accenture | 7 stand-alone (21 integrated with PAS) | 2 | New York Life, Corebridge, Allianz |
| Agenium | 30 | 12 | RGA, American Family, Wellabe |

| | | | |
|---|-----------------------|--------------|--|
| Appian | 12 | 3 | |
| Bestow | 5 | 5 | Transamerican Life, USAA Life, Nationwide |
| C2L BIZ Solutions | 0 | 0 | N/A |
| Composable Analytics | Not provided | Not provided | Not provided |
| DXC | 0 | 0 | N/A |
| EXL | 12 | 5 | Trustage |
| Hannover Re Life and Health Reinsurance | 6 | 2 | Penn Mutual, Fidelity Life Assoc., AAA Life |
| Infosys | 1 | 1 | Stellar National Life |
| iPipeline | 21 | 6 | Globe Life, Thrivent Financial, Sagicor, Foresters |
| Munich Re Automation Solutions | 19 | 2 | Pacific Life, Lincoln Financial, Transamerica, Brighthouse Financial, SunLife Canada |
| Neutrinus | 0 | 0 | N/A |
| Reinsurance Group of America (RGA) | 14 | 4 | Not provided |
| s.360 | 5 w/ exam services | 0 | American Fidelity, Manhattan Life, State Trust, Virgin Group |
| Sapiens | 26 | 5 | Not provided |
| Swiss Re – Magnum PURE | 18 | 6 | Not provided |
| Swiss Re - UnderwritingEase | 2 | 2 | Not provided |
| UnderwriteMe | 1 | 2 | Pacific Life |
| Zinnia | 3 | 2 | North Western Mutual |
| Source: Vendors, Celent | | | |

Table 3: Out-of-the-Box Functionality

| Vendor | Product | Rules-Driven eApplication | Underwriting Rules Engine | Underwriter Workbench |
|---|---|---------------------------|---------------------------|-----------------------|
| Accenture | ALIP New Business and Underwriting | ✓ | ✓ | ✓ |
| Agenium | New Business and Underwriting | ✓ | ✓ | ✓ |
| Appian | Appian Connected Underwriting Life Workbench | ✗ | ☐ | ✓ |
| Bestow | New Business and Underwriting System | ✓ | ✓ | ✓ |
| C2L BIZ Solutions | SymbioSys New Business and Underwriting | ✓ | ✓ | ✓ |
| Composable Analytics | Composable NB Underwriting Platform | ✓ | ✓ | ✓ |
| DXC | DXC Assure New Business | ✗ | ☐ | ✓ |
| EXL | Life Digital Suite | ✓ | ✓ | ✓ |
| Hannover Re Life and Health Reinsurance | hr ReFlex | ✓ | ✓ | ✓ |
| Infosys | Infosys McCamish New Business & Underwriting Solution | ✓ | ✓ | ✓ |
| iPipeline | Resonant New Business & Underwriting | ✓ | ✓ | ✓ |
| Munich Re Automation Solutions | ALLFINANZ NOVA and ALLFINANZ SPARK | ✓ | ✓ | ✓ |

| Vendor | Product | Rules-Driven eApplication | Underwriting Rules Engine | Underwriter Workbench |
|--|--|------------------------------|------------------------------|--------------------------|
| Neutrinos | Neutrinos Life & Annuity New Business & Underwriting | ✓ | ✓ | ✓ |
| Reinsurance Group of America (RGA) | AURA Next Underwriting Decision Management | ✓ | ✓ | ✗ |
| S.360 | s.360 life underwriting SaaS | ✓ | ✓ | ✓ |
| Sapiens | Sapiens UnderwritingPro for L&A | ✓ | ✓ | ✓ |
| Swiss Re | Magnum Pure | ✓ | ✓ | <input type="checkbox"/> |
| Swiss Re | Underwriting Ease | ✗ | ✗ | ✓ |
| UnderwriteMe | Underwriting Engine | ✓ | ✓ | ✗ |
| Zinnia | The Policy Processor (TPP) | ✓ | ✓ | ✓ |
| Legend: Legend: ● = Out of the box; ✗ = Not supported; <input type="checkbox"/> = Available via integration with a third party | | | | |
| Source: Celent | | | | |

Table 4: North American Profiled Vendors, in Alphabetical Order — Regional Availability

| Vendor | Product | NA | EMEA | APAC | LATAM |
|-------------------|--|----|------|------|-------|
| Accenture | ALIP New Business and Underwriting | ● | ✗ | ● | ✗ |
| Agenium | New Business and Underwriting | ● | ✗ | ✗ | ✗ |
| Appian | Appian Connected Underwriting Life Workbench | ✗ | ✗ | ✗ | ✗ |
| Bestow | New Business and Underwriting Systems | ● | ✗ | ✗ | ✗ |
| C2L BIZ Solutions | SymbioSys New Business and Underwriting | ✗ | ✗ | ● | ✗ |

| Vendor | Product | NA | EMEA | APAC | LATAM |
|---|---|----|------|------|-------|
| Composable Analytics | Composable NB Underwriting Platform | ● | × | × | × |
| DXC | DXC Assure New Business | × | × | × | × |
| EXL | Life Digital Suite | ● | ● | ● | × |
| Hannover Re Life and Health Reinsurance | hr ReFlex | ● | ● | ● | ● |
| Infosys | Infosys McCamish New Business & Underwriting Solution | ● | × | × | × |
| iPipeline | Resonant New Business & Underwriting | ● | × | × | × |
| Munich Re Automation Solutions | ALLFINANZ NOVA and ALLFINANZ SPARK | ● | ● | ● | ● |
| Neutrinos | Neutrinos Life & Annuity New Business & Underwriting | × | ● | ● | × |
| Reinsurance Group of America (RGA) | AURA Next Underwriting Decision Management | × | ● | ● | × |
| S.360 | s.360 life underwriting SaaS | ● | × | × | ● |
| Sapiens | Sapiens UnderwritingPro for L&A | ● | × | × | × |
| Swiss Re | Magnum Pure | ● | × | × | × |
| Swiss Re | Underwriting Ease | ● | ● | ● | ● |
| UnderwriteMe | Underwriting Engine | ● | ● | ● | × |
| Zinnia | The Policy Processor (TPP) | ● | × | ● | × |
| Legend: ● = Clients in production; x = No clients in production | | | | | |
| Source: Vendors, Celent | | | | | |

Table 5: North American Profiled Vendors, in Alphabetical Order—Deployment Options by Regional Availability

| Vendor | On-premise at the customer | On-premise at a partner | On-premise at the vendor/ software provider | Private cloud | Public cloud |
|---|----------------------------|-------------------------|---|-----------------------|-----------------------|
| Accenture | NA | X | X | X | NA, APAC |
| Agenium | X | X | X | X | NA |
| Appian | X | X | X | X | NA, EMEA, APAC, LATAM |
| Bestow | X | X | X | X | NA |
| C2L BIZ Solutions | APAC | X | X | X | APAC |
| Composable Analytics | X | X | X | X | NA |
| DXC | X | X | X | X | NA |
| EXL | NA, EMEA | X | X | NA | NA, EMEA |
| Hannover Re Life and Health Reinsurance | NA, EMEA, APAC, LATAM | X | X | X | NA, EMEA |
| Infosys | X | X | X | NA | X |
| iPipeline | NA | X | X | X | NA |
| Munich Re Automation Solutions | NA, EMEA, APAC | X | X | NA, EMEA, LATAM | NA, EMEA, APAC, LATAM |
| Neutrinos | EMEA, APAC | X | X | EMEA | X |
| Reinsurance Group of America (RGA) | X | X | X | NA, EMEA, APAC, LATAM | X |
| S.360 | X | X | X | X | NA, EMEA |
| Sapiens | NA, EMEA, APAC | X | X | NA | NA |
| Swiss Re – Magnum PURE | X | NA | X | X | NA |
| Swiss Re – Underwriting Ease | NA, EMEA, APAC, LATAM | LATAM | X | X | NA, EMEA, APAC, LATAM |
| UnderwriteMe | X | X | X | X | NA, EMEA, APAC |
| Zinnia | NA, APAC | X | NA | X | NA |

Source: Vendor RFIs

Table 6: North American Profiled Vendors, in Alphabetical Order—Public Cloud Options

| Vendor | Azure | AWS | Google Cloud | Alibaba Cloud | IBM Cloud | Oracle Cloud | Salesforce Cloud | Other |
|---|-------|-----|--------------|---------------|-----------|--------------|------------------|-------|
| Accenture | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Agenium | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Appian | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Bestow | ✗ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| C2L BIZ Solutions | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Composable Analytics | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| DXC | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| EXL | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Hannover Re Life and Health Reinsurance | ✗ | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Infosys | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| iPipeline | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Munich Re Automation Solutions | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Neutrinos | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Reinsurance Group of America (RGA) | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| S.360 | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Sapiens | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Swiss Re – Magnum PURE | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Swiss Re – Underwriting Ease | ✓ | ✓ | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ |
| UnderwriteMe | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Zinnia | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

Source: Vendor RFIs

PROFILES

The solutions are presented by vendor in alphabetical order.

ACCENTURE: ALIP NEW BUSINESS AND UNDERWRITING

Company and Product Snapshot

Table 7: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 1989 |
| Headquarters | Chicago, IL |
| Number of Employees | 800,000 |
| Revenues (USD) | \$64.1 billion (2023, corporate) |
| Financial Structure | Public – NYSE: ACN |
| VendorMatch Link | Accenture VendorMatch Link |

Source: Vendor RFI

Table 8: Product Snapshot

| | |
|---|--|
| Name | ALIP New Business and Underwriting |
| Year Originally Released | 2011 |
| Current Release and Date of Release | 6.4/2024 |
| Revenue Derived from Product | Accenture is a publicly traded corporation (NYSE: ACN) and reports all necessary details of its annual revenue, across its many businesses, in its annual and quarterly statements. They do not break out budgeting, revenue, or expenses beyond what is available in their quarterly and annual statements. |
| R&D Expense (last two years) | See above |
| FTEs Providing Professional Services for Product | 1,000 |
| Notable Clients | New York Life, Corebridge, Allianz, Challenger |

Source: Vendor RFI

Celent Commentary

Accenture's ALIP New Business and Underwriting is part of the vendor's ALIP suite of products, all of which are available as microservices. The component includes a rules engine, electronic application, underwriter and case management workbench, reporting, and portals. Twenty of 28 ALIP New Business and Underwriting customers are ALIP suite users. The others use it stand-alone with no loss of functionality.

Configuration is generally the same as in 2022, when a major update to the configuration workbench was completed. However, a few changes should be noted: a tree structure of rule execution and outcomes for applications going through underwriting, enabling clients to understand the reasons behind favorable or unfavorable outcomes; and a merge tool, which supports multiple versions of business configuration and merges reviewed and approved rules into the rules engine. In addition, a new product configuration dashboard has been added to ALIP, designed to simplify navigation around products. These improvements make configuration much easier to complete for an insurer.

New for 2024 is an integration with Munich Re and the ability to use their rules engine. RGA Aura is also supported. Other new integrations include Milliman Medical Histories, Human API from LexisNexis, and ExamOne's LabPiQture.

ALIP's case management and underwriting workbench looks like our last review with a few new features. These include parallel workstreams for case management and underwriting allowing for multiple users working on the same case simultaneously; system-level settings for timeouts and notifications; and the universal search bar for easier navigation. All make for a better user experience for the underwriter.

Accenture is one of the few vendors who have integrated generative AI (GenAI) into their product. Two GenAI use cases for underwriting include summarization of ALIP Documentation Center files and an Underwriting Co-Pilot that summarizes data and enables more efficient case management. Analytics and insights are available within the system via a prebuilt inventory of reports, predictive models, and dashboards. Insurer data is scrubbed of PII.

While ALIP Suite users can benefit from the overlapping product rules and calculations, ALIP New Business and Underwriting can operate as a stand-alone solution. Non-suite users benefit from all of the improvements Accenture has made to the system and its overall ease of use.

Functionality

Table 9: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● | | |
| Rules change “what-if” scenario analysis | ● | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | ● | | |
| Forms and evidence access from within the NBUW system | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|--|---------------|
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | | ● | |
| Ability to create customized reports and run analytics on captured data | | ● | |
| GenAI tools | | ● | |
| Legend | | | |
| ● = Available out of the box | ● = Configurable through a scripting language/coding | ● = Under development / on road map | |
| ● = Configurable using simple tools for business user | ● = Available with integration to a third party solution | ● = Could develop, would be considered customization | |
| ● = Configurable using simple tools for IT user | ● = Available with integration to a separate module provided by this vendor | ● = Not available / not applicable | |

Source: Vendor RFI

Lines of Business Supported

Table 10: Lines of Business Supported

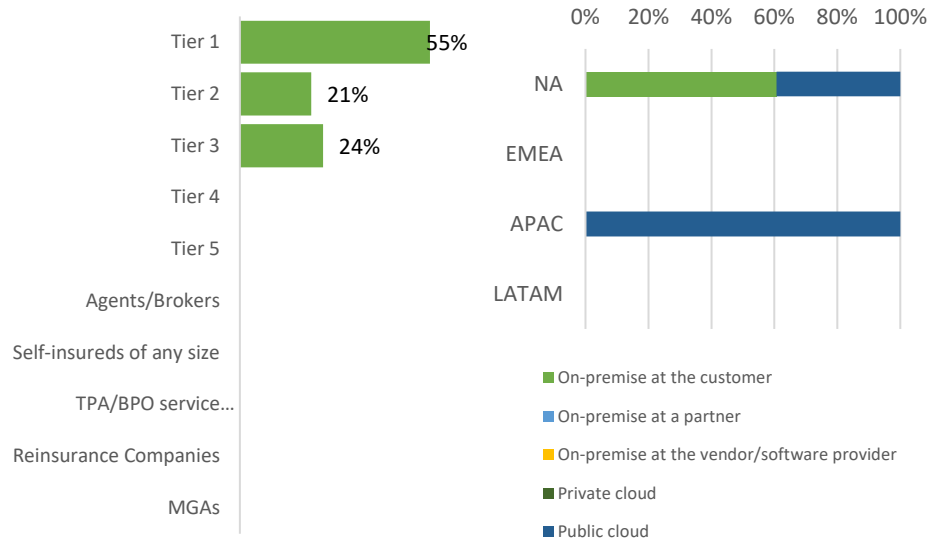
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✗ | ✗ | ✗ |
| Annuity | ✓ | ✗ | ✓ | ✗ |
| Health | ✓ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 11: Client Base by Size and Deployment Option (North America)



Source: Vendor RFI

Table 12: Implementations by Country

| Region | Countries |
|-----------------|---------------|
| North America | United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | Australia |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 13: Technology Options

| Technology Options | Responses |
|--------------------|-------------------------|
| Code Base | Java: 90%; Angular: 10% |

| Technology Options | Responses |
|---|--|
| Integration Methods | Web services; HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; Custom APIs; Flat files; GraphQL |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✓ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✓ API testing portal and the ability to use scripts on website is available.</div> <div>✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✓ Training in extending the system is offered.</div> |
| Legend: ✓ = Available; □ = Not available Source: Vendor RFI | |

Table 14: SaaS Capabilities

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Evergreen – client chooses when to upgrade |
| Cadence of upgrades for multi-tenant deployments | More frequent than every 3 months |
| Deployment approach supports elasticity | Yes, within less than a day |
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | 25% to 50% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |

| Elements | Availability |
|---|--------------|
| Need for containerization to run in a cloud | ✗ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 15: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | □ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 16: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✓ | □ | ✓ | □ |
| Amazon AWS | ✓ | □ | □ | □ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | □ | □ | □ | □ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 17: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------------|--|
| System Integrators | As a global organization, Accenture has the SI scale and experience that allows them to address clients' technology and business requirements almost entirely in-house. Accenture is vendor/system-agnostic and chooses the best solution for clients. |
| Fintech Partners | A majority of the ALIP partnership ecosystem operates in fintexh. Fintech partners include AWS, MS Azure, Google Cloud, Salesforce Cloud, Benekiva, Clareto, dacadoo, EIS, Fineos, Fitbit, Majesco, Microsoft Dynamics 365, OpenText, Pegasystems, RGA, SAP, ServiceNow, SundaySky, Sureify, Unqork, and Vitech. |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 18: Implementation, Support, and Pricing

| | |
|---|--|
| Typical Implementation Team Size | 16 to 20 |
| Resource Breakdown | Vendor: 50%; Client: 40%; Third party: 10% |
| Location of Employees | Accenture has 350 employees in North America, 550 employees in EMEA, 100 employees in Latin America |
| Average Time to Implementation | <u>Initial implementation</u> : 1 to 3 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 3 months |
| Pricing Models | SaaS, Other |

Source: Vendor RFI

AGENIUM: NEW BUSINESS AND UNDERWRITING

Company and Product Snapshot

Table 19: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 1988 (Agenium founded in 2023) |
| Headquarters | Milwaukee, WI |
| Number of Employees | 28 |
| Revenues (USD) | Not reported |
| Financial Structure | Not reported |
| VendorMatch Link | https://www.celent.com/vendormatch/discovery/solutions/332073825 |

Source: Vendor RFI

Table 20: Product Snapshot

| | |
|---|--|
| Name | New Business and Underwriting (August 2024) |
| Year Originally Released | 2018 |
| Current Release and Date of Release | Agenium deploys new production code every two weeks. 100% SaaS hosted in MS Azure. Single code instance across all users/customers with no on-premise deployments. |
| Revenue Derived from Product | \$6 million+ |
| R&D Expense (last two years) | 15% of total revenue attributed to this solution |
| FTEs Providing Professional Services for Product | 20 |
| Notable Clients | RGA, American Family, Wellabe |

Source: Vendor RFI

Celent Opinion

Agenium, formerly known as MRS, offers a highly functional new business and underwriting solution with no-code configurability, support for headless applications, and an underwriting / case management workbench. The Agenium platform supports underwriting based on the person rather than the policy. Agenium has 30 clients using the system along with one TPA and one reinsurance company. Smaller insurers tend to buy the system, with 11 new Tier 3 to 5 insurer clients in the last two years.

The rules engine is similar to what we saw in 2022, with some minor changes. Product, workflow, and underwriting rules are configured through the use of Map Keys, which are unique to Agenium. Map keys are used to configure rules and store the results of a rule or calculation, like identifying an impairment and triggering the need for more questions. During implementation, the Agenium platform is configured with a full set of map keys and expressions; specific insurer rules are built with the insurer and the Agenium team using rules templates.

The agent portal includes headless capabilities with internal checks on the application, regardless of the source, to ensure In Good Order applications and point-of-sale calculations for premium quotes. The portal has the same structure of the underwriter workbench and thus includes full case management if allowed by the insurer. Agenium offers true omnichannel experiences for an applicant to start an application and complete it with the call center or agent as needed. The agent portal is used by several of Agenium's clients.

The solution includes the standard third party integrations for obtaining evidence. Recent integrations include Digital Owl and Munich Re's rules engine. The solution already was integrated with RGA, Hannover Re, and Swiss Re.










Most of Agenium's investment over the past 18 months has been on the underwriter workbench. The workbench contains configurable queues that can be set up by role. New to the workbench is "get next case" functionality; cases used to only be assigned automatically. Group assignments are also new, while calendar assignments due to out-of-office needs are being developed. Another new feature is the underwriting information summary in the left panel, which gives the underwriter a quick summary of the case and the areas they should review first. This is very helpful for underwriter efficiency.

















To ensure successful implementation with a growing client base, Agenium has brought on Deloitte as a system integrator. They work closely with clients to make changes to the system, which continues to be very underwriter focused. Both strategies bode well for the platform as it continues to gain traction in the market.

Functionality
















Table 21: Functionality

Legend

-  = Available out of the box
-  = Configurable through a scripting language/coding
-  = Under development / on road map
-  = Configurable using simple tools for business user
-  = Available with integration to a third party solution
-  = Could develop, would be considered customization
-  = Configurable using simple tools for IT user
-  = Available with integration to a separate module provided by this vendor
-  = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---|---------------|
| Desktop | | | |
| eApplication—web-based |  | | |
| eApplication—mobile |  | | |
| Dynamic interviewing |  | | |
| Industry standard application form (such as ACORD) import or upload |  | | |
| Data validation during application data capture |  | | |
| Electronic signature capability |  | | |
| External data systems or services integration for data prefill |  | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management |  | | |
| Reinsurer underwriting manual integration | |  | |
| Product dictionary/repository support |  | | |
| Premium calculations based on underwriting class |  | | |
| Rule validation during add/update based on local regulations and regional restrictions. |  | | |
| Testing, modeling, and product analysis tools |  | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management |  | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) |  | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) |  | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● | | |
| Rules change “what-if” scenario analysis | ● | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | ● | | |
| Forms and evidence access from within the NBUW system | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---|---------------|
| Requirements-specific rule design and management |  | | |
| Non-medical underwriting requirements identification |  | | |
| 3rd party data management (receipt, tracking, and follow-up) |  | | |
| Reporting and Analytics | | | |
| Predictive analytics | |  | |
| Ability to create customized reports and run analytics on captured data |  | | |
| GenAI tools | |  | |
| Legend  = Available out of the box  = Configurable using simple tools for business user  = Configurable using simple tools for IT user  = Configurable through a scripting language/coding  = Available with integration to a third party solution  = Available with integration to a separate module provided by this vendor  = Under development / on road map  = Could develop, would be considered customization  = Not available / not applicable | | | |

Source: Vendor RFI

Lines of Business Supported

Table 22: Lines of Business Supported

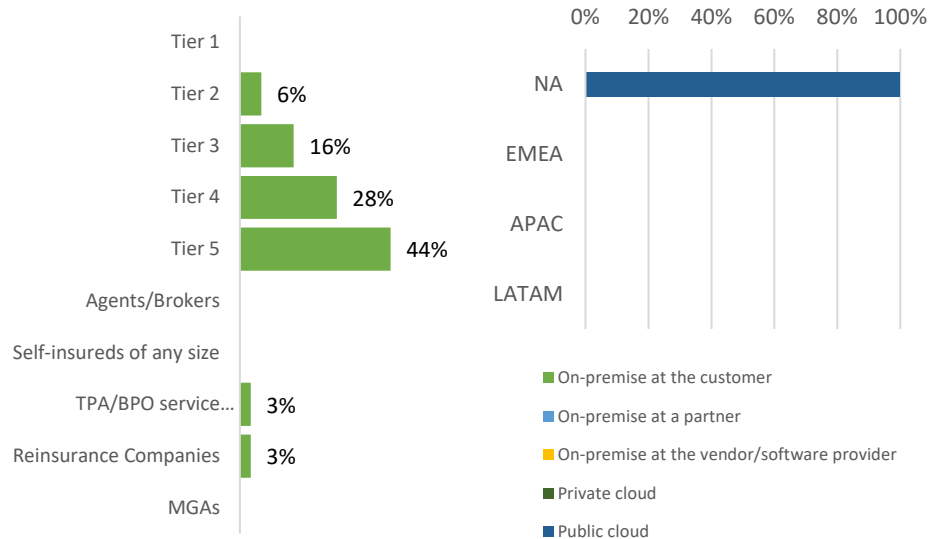
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✗ | ✗ | ✗ |
| Annuity | ✓ | ✗ | ✗ | ✗ |
| Health | ✓ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 23: Client Base by Size and Deployment Option (North America)



Source: Vendor RFI

Table 24: Implementations by Country

| Region | Countries |
|-----------------|---------------|
| North America | United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 25: Technology Options

| Technology Options | Responses |
|---------------------|---|
| Code Base | .Net: 50%; Angular: 50% |
| Integration Methods | Web services; XML (not through web services); RESTful HTTP style services; JSON format; Custom APIs; Flat files |

| Technology Options | Responses |
|--------------------|--|
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✗ API developer portal is available for support and descriptions. |
| | ✓ API testing portal and the ability to use scripts on website is available. |
| | ✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✓ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✗ Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 26: SaaS Capabilities

| Elements | Availability |
|--|--|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Evergreen – all clients are on the same latest version |
| Cadence of upgrades for multi-tenant deployments | More frequent than every 3 months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | 25% to 50% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✗ |

| Elements | Availability |
|---|--------------|
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | × |
| <u>Legend:</u> ✓ = Yes × = No | |
| Source: Vendor RFI | |

Table 27: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; × = Not available | |
| Source: Vendor RFI | |

Table 28: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✓ | □ | □ | □ |
| Amazon AWS | × | × | × | × |
| Google Cloud Platform (GCP) | × | × | × | × |
| Alibaba Cloud | × | × | × | × |
| IBM Cloud / Bluemix | × | × | × | × |
| Oracle Cloud | × | × | × | × |
| Salesforce Cloud, Force.com, AppExchange | × | × | × | × |
| Other | × | × | × | × |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; × = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 29: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|------------------------------|
| System Integrators | Deloitte, NTT Data, Mantissa |

| Type of Partnership | Partner Vendor |
|---------------------|--|
| Fintech Partners | We have integrated with several other fintech providers based on the needs of our clients. These include Cambio, Digital Owl, Amplify, Afficiency, and Friendly. |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 30: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 3%; Client: 7%; Third party: % |
| Location of Employees | Agenium has 27 employees in North America |
| Average Time to Implementation | <u>Initial implementation:</u> 1 to 3 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Term license, Perpetual license, Enterprise license, Subscription-based license, Other |
| Source: Vendor RFI | |

APPIAN: APPIAN CONNECTED UNDERWRITING LIFE WORKBENCH

Company and Product Snapshot

Table 31: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 1999 |
| Headquarters | Tysons, VA |
| Number of Employees | 2,200 |
| Revenues (USD) | \$545 million (2023) |
| Financial Structure | Public - NASDAQ: APPN |
| VendorMatch Link | Appian VendorMatch Link |

Source: Vendor RFI

Table 32: Product Snapshot

| | |
|---|--|
| Name | Appian Connected Underwriting Life Workbench |
| Year Originally Released | 2023 |
| Current Release and Date of Release | 24.2/2024 |
| Revenue Derived from Product | Appian does not report revenue by product. 2023 Total Revenue: \$545.4M Subscription revenue: \$316.7M |
| R&D Expense (last two years) | 28% of total revenue attributed to this solution |
| FTEs Providing Professional Services for Product | 529 |
| Notable Clients | Not provided |

Source: Vendor RFI

Celent Opinion

Connected Underwriting Life Workbench is a prebuilt life underwriting and case management workbench that does not include an underwriting rules engine. It provides a native business rules engine to process STP and exception cases in the workbench. Appian has partnered with Magnum to provide underwriting rules. Two North American life insurers are using the Connected Underwriting Life Workbench.

With the in-built rules engine, Appian Connected Underwriting offers the capability to configure business rules from the front end. The Solutions Hub allows end users to make changes to the workbench functionality. The Appian Designer, which manages workflow, can only be accessed by Appian designers or developers; case assignment workflow configuration by insurers is available via the tool.

Appian's platform can take in application data and third party rules results via APIs direct from third party or insurer tools. Appian is pre-integrated with Swiss Re Magnum PURE, but an insurer's own underwriting rules results can be integrated and shown in the workbench. It has an integration with ReleasePoint for medical records, but it is missing a few key integrations like MIB, LexisNexis, and ExamOne, relying instead on Swiss Re for these integrations today. The Appian platform employs a virtual data fabric layer that connects external data sources without migrating customer data into the platform, so they feel these integrations can be done if an insurer requires it.

The underwriter's workbench has real time access to underwriting results and applicant data. It can filter and prioritize cases for the underwriter based on insurer rules and preferences. Key features are the highlighted risk factors based on third party evidences, details on Swiss Re Magnum decisions, document management, and AI summaries of EHRs and APS files. A chatbot is currently used for internal communications; an external chat bot for agent use is on the road map.

Appian provides an out-of-the-box, preconfigured reporting dashboard. The reports can be tailored to match the customer's needs and can be made accessible to specific team members based on their roles. Insurers can also export the data into their own data lakes and use their own BI tools. The medical data AI case summary could be improved because the data is not detailed enough to be worthwhile to the underwriter today. A GenAI tool that summarizes APS files will be available as part of the platform by 2025.

The core capability of Appian Connected Underwriting is case management. It provides a case manager or underwriter what they need to process cases that are exceptions to an insurer's STP rules. With Appian's 8-week guarantee for implementation and a Swiss Re PURE contract, Connected Underwriting is worth considering for a fast workbench implementation. Non-Swiss Re implementations have not happened yet.

Functionality

Table 33: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | | ● | |
| Reinsurer underwriting manual integration | | ● | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | | ● | |
| Rule validation during add/update based on local regulations and regional restrictions. | | ● | |
| Testing, modeling, and product analysis tools | | ● | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | | ● | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | | ● | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | | ● | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● | | |
| Rules change “what-if” scenario analysis | | ● | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Forms and evidence access from within the NBUW system | ● | | |
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | | ● | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | | ● | |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |
| Source: Vendor RFI | | | |

Lines of Business Supported

Table 34: Lines of Business Supported

| Line of Business | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Life | □ | □ | □ | □ |
| Annuity | ✗ | ✗ | ✗ | ✗ |
| Health | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Customer Base

Appian did not provide details on their customer base size, location, or deployment.

Technology

Table 35: Technology Options

| Technology Options | Responses |
|----------------------------|---|
| Code Base | Java: 5% and 95% SAIL (Self-Assembling Interface Layer), Appian's proprietary language |
| Integration Methods | Web services; XML (not through web services); HTML; HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; Custom APIs; Flat files; Native messaging; Other |
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✓ API developer portal is available for support and descriptions. |
| | ✓ API testing portal and the ability to use scripts on website is available. |
| | ✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✓ Access to the APIs is managed, and use of APIs tracked by developers. |
| | □ ✓ Training in extending the system is offered. |

Legend: ✓ = Available; ✕ = Not available

Source: Vendor RFI

Table 36: SaaS Capabilities

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | ✕ |
| Type of effort required to update the solution | Evergreen – client chooses when to upgrade |
| Cadence of upgrades for multi-tenant deployments | n/a |
| Deployment approach supports elasticity | Yes, within less than a day |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |

| Elements | Availability |
|---|--------------|
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✗ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 37: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 38: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | □ | □ | □ | □ |
| Amazon AWS | ✓ | ✓ | ✓ | ✓ |
| Google Cloud Platform (GCP) | □ | □ | □ | □ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 39: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|--|
| System Integrators | <p>Appian has a global network of 573 delivery partners, including global alliances with KPMG, Accenture, Deloitte, Atos, Wipro, Cognizant, PWC, HCL, Capgemini, TCS, Perficient, Infosys, EPAM, and Persistent.</p> <p>All SIs have dedicated Appian COEs. There are 15,000+ certified individuals in these orgs for Appian implementation and support services.</p> <p>In addition to implementation and support services, all of these partners offer prebuilt solutions created on the Appian platform, engage in joint go-to-market activities, and/or sponsor Appian events. Many of these partner-build solutions are listed on our public AppMarket.</p> |
| Fintech Partners | N/A |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 40: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | <p>NA and EMEA: Vendor: 30%; Client: 30%; Third party: 40%</p> <p>APAC: Vendor: 30%; Client: 70%</p> |
| Location of Employees | Appian has 253 employees in North America, 135 employees in EMEA, and 31 employees in Asia Pacific |

| | |
|---------------------------------------|---|
| Average Time to Implementation | <u>Initial implementation:</u> 1 to 3 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Term license, Enterprise license, Subscription-based license, and Percent of new business premiums |
| Source: Vendor RFI | |

BESTOW: NEW BUSINESS AND UNDERWRITING SYSTEMS

Company and Product Snapshot

Table 41: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 2016 |
| Headquarters | Dallas, TX |
| Number of Employees | 157 |
| Revenues (USD) | Not reported |
| Financial Structure | Not reported |
| VendorMatch Link | Bestow VendorMatch Link |

Source: Vendor RFI

Table 42: Product Snapshot

| | |
|---|--|
| Name | New Business and Underwriting Systems |
| Year Originally Released | 2017 |
| Current Release and Date of Release | Iterative releases of key components of the system, but do not have specific versions of the entire platform |
| Revenue Derived from Product | Not reported |
| R&D Expense (last two years) | Not reported |
| FTEs Providing Professional Services for Product | 90 |
| Notable Clients | Transamerica Life Insurance, USAA Life Insurance, Nationwide Mutual Insurance |

Source: Vendor RFI

Celent Opinion

Founded in 2016, Bestow started as a managing general agent (MGA) before buying Centurian Life in 2021 and selling term insurance in the direct-to-consumer market. In 2024, Bestow sold its life insurance subsidiary to Sammons Financial and now focuses on providing software to insurance companies. Bestow's technology stack, built to support their life insurance products, is now being sold by the vendor. This includes a new business and underwriting platform.

The Bestow new business and underwriting platform is used by five insurers, including Sammons, for term and final expense products. Each client has one product on the system; one insurer is adding a second product later this year. Bestow is investigating adding annuities and IUL to the platform.

The product and underwriting rules configuration tools are only available for Bestow staff. During implementation, Bestow uses a very detailed spreadsheet—which includes all possible underwriting rules, business rule logic, third party data rules, MIB coding, and more for products sold by the clients and reflects their knowledge of underwriting—to gather underwriting requirements from their clients. Bestow is in the process of making the system more configurable, but there are no immediate plans to create a configuration UI for clients. There are currently no predefined templates that can be reused; configuration has been company specific to date. The configuration portal includes a test chassis which also primarily is used by Bestow

Several of the key requirements providers, including Milliman, MIB, LexisNexis, SCOR, and ExamOne, are preconfigured into the underwriting rules engine. The application process allows for the rules engine to trigger requirements gathering at any point in the process.

Bestow's underwriting portal is part of an overall administration portal which pulls data from a variety of systems and data sources as needed. Using role-based privileges, underwriters can audit or underwrite cases from the portal. Because the client's initial products on the system are intended for straight-through processing, the Bestow underwriting portal is not as robust as workbenches that cater to fully underwritten cases, but it is a very functional workbench. Cases hit the underwriter queue on a first-come, first-served basis and Bestow is building out case assignment and reassignment capabilities.

The operations portal is designed to manage documents and notifications related to the policy lifecycle. Like the configuration portal, the ops portal is used by Bestow staff. All documents and notifications are event driven; the associated workflow is also configured by Bestow staff.

Bestow is new to the new business and underwriting technology market. They built a system that catered to a D2C client base that relied on Bestow staff to build products and rules. Their longer-term plans include moving to a more user-friendly UI and tools for the carrier to do more on the system. For now, if an insurer has simple term or SI products and is willing to be on a growth trajectory with the vendor, Bestow's technology can support the insurer.

























Functionality
















Table 43: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | | | ● |
| Data validation during application data capture | | ● | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | | | ● |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | | ● | |
| Testing, modeling, and product analysis tools | | | ● |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---|---|---|
| Complex rule processing via 3rd party rules engines | |  | |
| Underwriter desktop |  | | |
| Underwriting rules changes monitored and audited by date |  | | |
| Global, regional, and local underwriting rules support |  | | |
| Manual underwriting decision audit and update support |  | | |
| Multiple product and multiple lives simultaneous underwriting support | | |  |
| System underwriting decision overwrite support |  | | |
| Automatic creation of algorithmic scores from selected data | | |  |
| Underwriter authorization limit management | | |  |
| Rules change “what-if” scenario analysis | |  | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | |  |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | | |  |
| New business status for agents (APIs to portal) |  | | |
| Demand and capacity management capabilities | | |  |
| Case management correspondence capabilities including expiry, follow-up actions, dates | | |  |
| Automated communication to agents on outstanding requirements via email | | |  |
| Case management workflow-specific rules design and management | | |  |
| Requirements Management | | | |
| Identification of medical underwriting requirements |  | | |
| Medical underwriting requirements ordering |  | | |
| Non-medical underwriting requirements ordering |  | | |
| Requirement rules changes monitoring/audit |  | | |
| Internal underwriting requirements management | |  |  |
| Forms and evidence access from within the NBUW system |  | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---|---|
| Requirements-specific rule design and management |  | | |
| Non-medical underwriting requirements identification |  | | |
| 3rd party data management (receipt, tracking, and follow-up) |  | | |
| Reporting and Analytics | | | |
| Predictive analytics | | |  |
| Ability to create customized reports and run analytics on captured data |  | | |
| GenAI tools | |  | |
| Legend <div>  = Available out of the box  = Configurable through a scripting language/coding  = Under development / on road map </div> <div>  = Configurable using simple tools for business user  = Available with integration to a third party solution  = Could develop, would be considered customization </div> <div>  = Configurable using simple tools for IT user  = Available with integration to a separate module provided by this vendor  = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 44: Lines of Business Supported

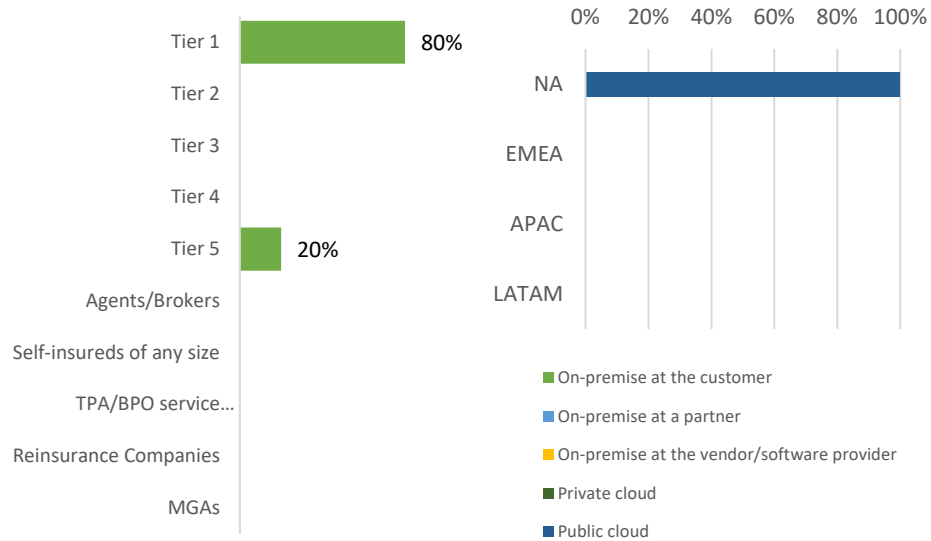
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✗ | ✗ | ✗ |
| Annuity | ✗ | ✗ | ✗ | ✗ |
| Health | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 45: Client Base by Size and Deployment Option (North America)



Source: Vendor RFI

Table 46: Implementations by Country

| Region | Countries |
|-----------------|---------------|
| North America | United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 47: Technology Options

| Technology Options | Responses |
|--------------------|---|
| Code Base | Java: 10%; JavaScript: 30%; Python: 30%; Other: 30% |

| Technology Options | Responses |
|---|--|
| Integration Methods | Web services; XML (not through web services); HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; Custom APIs; Flat files |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✓ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✓ API testing portal and the ability to use scripts on website is available.</div> <div>✗ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✗ Training in extending the system is offered.</div> |
| Legend: ✓ = Available; ✗ = Not available | |
| Source: Vendor RFI | |

Table 48: SaaS Capabilities

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Evergreen – all clients are on the same latest version |
| Cadence of upgrades for multi-tenant deployments | More frequent than every 3 months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |

| Elements | Availability |
|---|--------------|
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✓ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✗ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 49: Change Tooling and Upgrades

| Types of Changes | Availability |
|---|--------------------------|
| Business Rule Definition | <input type="checkbox"/> |
| Data Definition | <input type="checkbox"/> |
| Table Maintenance, List of Values, etc. | <input type="checkbox"/> |
| Interface Definition | <input type="checkbox"/> |
| Product Definition | ✗ |
| Role-Based Security, Access Control, and Authorizations | <input type="checkbox"/> |
| Screen Definition | <input type="checkbox"/> |
| Workflow Definition | <input type="checkbox"/> |
| <u>Legend:</u> ✓ = Configurable via tools for business users; <input type="checkbox"/> = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 50: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|---|----|------|------|-------|
| Microsoft Azure | ✗ | ✗ | ✗ | ✗ |
| Amazon AWS | ✗ | ✗ | ✗ | ✗ |
| Google Cloud Platform (GCP) | ✓ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; <input type="checkbox"/> = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 51: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|--|
| System Integrators | While Bestow has yet to work with a systems integrator, they are currently exploring synergies and opportunities with 3rd party systems integrators. |
| Fintech Partners | Partner and integrate with leading insurance evidence and data providers; in process of executing formal partnership with AgentSync and others. Bestow is open to partnering or collaborating with other complementary fintechs. |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 52: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 40 to 50 |
| Resource Breakdown | Vendor: 50%; Client: 50% |
| Location of Employees | Bestow has 80 employees in North America, 5 employees in EMEA, and 5 employees in Latin America |
| Average Time to Implementation | <u>Initial implementation:</u> 4 to 6 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Enterprise license |

Source: Vendor RFI

C2L BIZ SOLUTIONS PVT. LTD.: SYMBIOSYS NEW BUSINESS AND UNDERWRITING

Company and Product Snapshot

Table 53: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 2008 |
| Headquarters | Mumbai, India |
| Number of Employees | 301 |
| Revenues (USD) | \$8.5 million (2023) |
| Financial Structure | Private |
| VendorMatch Link | C2L Biz VendorMatch Link |

Source: Vendor RFI

Table 54: Product Snapshot

| | |
|---|---|
| Name | SymbioSys New Business and Underwriting |
| Year Originally Released | 2010 |
| Current Release and Date of Release | SymbioSys Underwriting ver 8.0/2021 |
| Revenue Derived from Product | \$2 million |
| R&D Expense (last two years) | R&D expense over the past two years has been approximately 10% of total revenue |
| FTEs Providing Professional Services for Product | 100 |
| Notable Clients | Bharti AXA (India), Manipal Cigna (India), Sun life Malaysia |

Source: Vendor RFI

Celent Opinion

The SymbioSys New Business and Underwriting component is part of the SymbioSys Suite of products, which includes a sale tool, eApplication, illustrations, and auto underwriting. While it is not necessary to purchase the full suite, insurers with the suite benefit from the integrations between the products. Twenty-six insurers in APAC use the C2L Biz SymbioSys New Business and Underwriting component. One customer uses it without the SymbioSys Sales Tool for point-of-sale business.

There were no material differences in the rules engine since our last review. The rules engine includes templated business, workflow, and underwriting rules which can be reused across products, channels, and groups. The expression editor uses formulas like Excel, but the pop-up window looks like a wrap to an older code base, and the wide range of formula options could get confusing as rule complexity increases. All underwriting rules are assigned to products and cloned as new products are built. Detailed medical underwriting rules do not exist today because SymbioSys Auto Underwriting is only used in the APAC region. They could be developed or a third party rules engine could be integrated.

The SymbioSys Sales Tool, which includes the quote and application, uses the same rules engine. C2L Biz investments since 2022 were primarily in the Sales Tool, where they made changes allowing different business flows for different channels. The Sales Tool offers customer-facing processing capabilities as well. An insurer can integrate a third party or their own eApp into the Underwriting component, but that is not the norm. In general, we found the Sales Tool UI easy to use and comparable to the market.

Integrations are primarily within the SymbioSys Suite and with insurers' internal systems. There are no pre-integrations with the primary third party data providers needed for a US market due to not having a client in the US; however, C2L Biz has built a POC with MVR, Rx, and MIB in North America.

The underwriting workbench has a UI that makes the system feel old. It provides the underwriter with basic information about the policy and customer details, coverages, and the underwriting results. Results that need to be reviewed by the underwriter are in a different color. In general, the basic functionality needed in an underwriter workbench is available. C2L Biz plans to move the UI onto Angular, but their concentration has been on the Sales Tool's external UI.

Reporting is available via a download of data to an insurer's data lake. If desired, C2L Biz develops Tableau dashboards for the client using a base template of reports and trains the insurer on how to use the data for their needs. The Tableau license is held by the insurer. There is no AI being used just yet.

The SymbioSys New Business and Underwriting component meets the needs of the current customer base in APAC. There have been no new sales in the last two years, which suggests that the market may be looking for more modern systems. The system is primarily deployed on-premises, and system enhancements are not coming as quickly as cloud-based systems. To compete in markets outside of APAC, C2L Biz should look at their competition in those regions and prepare for the future.
























Functionality

Table 55: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | | ● | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---|---|---|
| Complex rule processing via 3rd party rules engines | | |  |
| Underwriter desktop |  | | |
| Underwriting rules changes monitored and audited by date |  | | |
| Global, regional, and local underwriting rules support |  | | |
| Manual underwriting decision audit and update support |  | | |
| Multiple product and multiple lives simultaneous underwriting support |  | | |
| System underwriting decision overwrite support |  | | |
| Automatic creation of algorithmic scores from selected data | |  | |
| Underwriter authorization limit management |  | | |
| Rules change “what-if” scenario analysis | |  | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | |  |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers |  | | |
| New business status for agents (APIs to portal) |  | | |
| Demand and capacity management capabilities |  | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates |  | | |
| Automated communication to agents on outstanding requirements via email |  | | |
| Case management workflow-specific rules design and management |  | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements |  | | |
| Medical underwriting requirements ordering |  | | |
| Non-medical underwriting requirements ordering |  | | |
| Requirement rules changes monitoring/audit |  | | |
| Internal underwriting requirements management |  | | |
| Forms and evidence access from within the NBUW system |  | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|--|---------------|
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | | | ● |
| Reporting and Analytics | | | |
| Predictive analytics | | | ● |
| Ability to create customized reports and run analytics on captured data | | | ● |
| GenAI tools | | | ● |
| Legend | | | |
| ● = Available out of the box | ● = Configurable through a scripting language/coding | ● = Under development / on road map | |
| ● = Configurable using simple tools for business user | ● = Available with integration to a third party solution | ● = Could develop, would be considered customization | |
| ● = Configurable using simple tools for IT user | ● = Available with integration to a separate module provided by this vendor | ● = Not available / not applicable | |

Source: Vendor RFI

Lines of Business Supported

Table 56: Lines of Business Supported

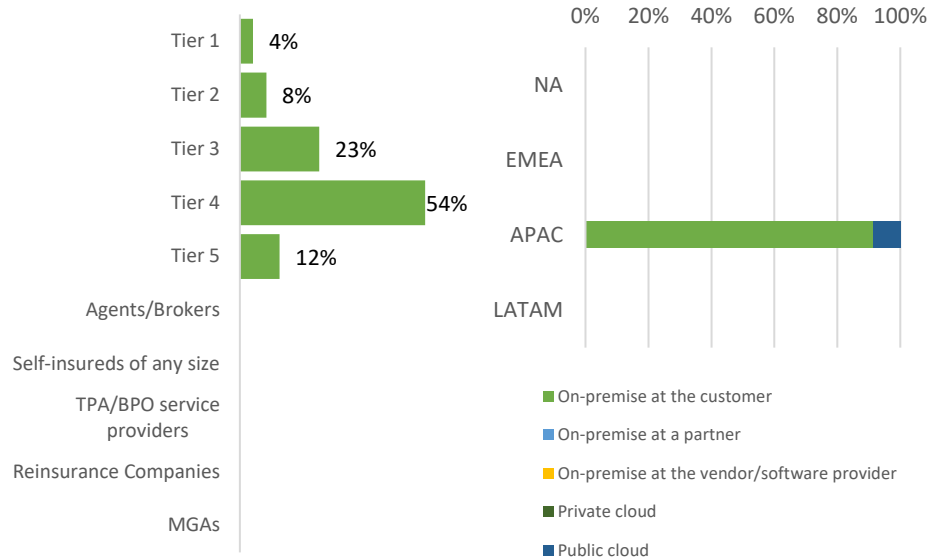
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Life | <input type="checkbox"/> | <input type="checkbox"/> | ✓ | <input type="checkbox"/> |
| Annuity | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Health | <input type="checkbox"/> | <input type="checkbox"/> | ✓ | <input type="checkbox"/> |
| Other | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Legend: ✓ = In production; ☐ = Supported but not in production; x = Not supported

Source: Vendor RFI

Customer Base

Table 57: Client Base by Size and Deployment Option (Global or NA only)



Source: Vendor RFI

Table 58: Implementations by Country

| Region | Countries |
|-----------------|--|
| North America | |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | Hong Kong, India, Indonesia, Malaysia, Philippines, Singapore, Thailand, Vietnam |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 59: Technology Options

| Technology Options | Responses |
|--------------------|--|
| Code Base | JavaScript: 60%; Ruby: 20%; Angular: 20% |

| Technology Options | Responses |
|----------------------------|--|
| Integration Methods | Web services; XML (not through web services); HTML; HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/ Similar queue technology; Custom APIs; Flat files; Native messaging |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✗ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✓ API testing portal and the ability to use scripts on website is available.</div> <div>✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✓ Training in extending the system is offered.</div> |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 60: SaaS Capabilities

| Elements | Availability |
|---|--------------------------------------|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Automated scripts – mostly automated |
| Cadence of upgrades for multi-tenant deployments | Every 3 months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |

| Elements | Availability |
|---|--------------|
| Need for containerization to run in a cloud | ✗ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 61: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | □ |
| Interface Definition | □ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ⊖ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 62: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | □ | □ | □ | □ |
| Amazon AWS | □ | □ | ✓ | □ |
| Google Cloud Platform (GCP) | □ | □ | □ | □ |
| Alibaba Cloud | ✗ | ✗ | □ | □ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 63: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|--|
| System Integrators | Cognizant Technology Solutions Corporation, HCL Technologies |
| Fintech Partners | None currently |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 64: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 11 to 15 |
| Resource Breakdown | Vendor: 30%; Client: 20%; Third party: 50% |
| Location of Employees | C2L BIZ Solutions Pvt. Ltd. has 40 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation</u> : 4 to 6 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 3 months |
| Pricing Models | Perpetual license, Enterprise license, Subscription-based license |

Source: Vendor RFI

COMPOSABLE ANALYTICS, INC.: COMPOSABLE NB UNDERWRITING PLATFORM

Company and Product Snapshot

Table 65: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 2014 |
| Headquarters | Cambridge, MA |
| Number of Employees | 50 |
| Revenues (USD) | Confidential |
| Financial Structure | C Corp., Privately held |
| VendorMatch Link | Composable Analytics VendorMatch Link |

Source: Vendor RFI

Table 66: Product Snapshot

| | |
|---|--|
| Name | Composable NB Underwriting Platform |
| Year Originally Released | 2015 |
| Current Release and Date of Release | 2.0.21921.0/2024 |
| Revenue Derived from Product | \$5 million |
| R&D Expense (last two years) | 40% of total revenue attributed to this solution |
| FTEs Providing Professional Services for Product | 25 |
| Notable Clients | Not provided |

Source: Vendor RFI

Celent Opinion

Composable Analytics, created by MIT technologists, builds data-driven software. Their DataOps platform can be used for life insurance new business and includes the entire acquisition value chain, from electronic application to requirements ordering and receipt, to a machine learning-based underwriting engine. It includes a workflow manager and case management, including supervisor views. The system can also connect to an external underwriting decision engine should the insurer choose.

Composable's underwriting rules are configured uniquely for each client. Unlike other systems with reusable underwriting rules templates within a rules repository, Composable's product, underwriting, and business rules are built directly within the electronic application flow. The eApplication configuration tool is used to develop the questions and track responses, including evidence requests and receipt. The questionnaire responses and evidence results drive which rules and models are used for underwriting decisions. While some algorithmic rules exist, Composable relies more heavily on machine learning (ML) models to make underwriting decisions. Rules and ML models are intertwined. Composable's demo did not show or discuss how the ML rules are managed.

Composable's system can interconnect to multiple external providers, such as RX data, MIB, lab data, and more.

The case management component allocates cases to underwriters through several methods. The underwriter workbench includes a simple summary and more detailed drilldowns, but the use of pop-ups makes it difficult to track which case is being worked on. Underwriting decisions are based on a debit/credit model. Composable has built a very explainable platform so that all rules and models that are triggered are presented with underlying explanations of decisions, providing strong support for the underwriter to make final decisions.

Overall, Composable's platform appears to be quite complete, offering the key areas Celent looks for in a NBUW system. However, from what we saw, it could be a little confusing to use. We also believe that building reusable rules templates would save time and money in system implementations. It could also lead to more insurer self-service post-implementation. We suspect with some training and time, Composable's NB and Underwriting Platform could be a solid system for an insurer with simpler products. We also think there is ample opportunity for Composable to grow.

Functionality

Table 67: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● | | |
| Rules change “what-if” scenario analysis | ● | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | ● | | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | ● | | |
| Forms and evidence access from within the NBUW system | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | | ● | |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 68: Lines of Business Supported

| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | × | × | × |
| Annuity | × | × | × | × |
| Health | × | × | × | × |
| Other | × | × | × | × |

Legend: ✓ = In production; □ = Supported but not in production; × = Not supported

Source: Vendor RFI

Customer Base

Composable Analytics did not provide customer data.

Technology

Table 69: Technology Options

| Technology Options | Responses |
|----------------------------|--|
| Code Base | Cloud-based microservices architecture, utilizing scalable framework and modern languages that support distributed computing, data processing, and integration |
| Integration Methods | Web services; XML (not through web services); HTML; HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/ Similar queue technology; Custom APIs; Flat files; Native messaging; and GraphQL |
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✓ API developer portal is available for support and descriptions. |
| | ✓ API testing portal and the ability to use scripts on website is available. |
| | ✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✓ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✓ Training in extending the system is offered. |

Legend: ✓ = Available; ✕ = Not available

Source: Vendor RFI

Table 70: SaaS Capabilities

Managed cloud and customer hosted on-premises deployments are supported.

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | ✕ |
| Type of effort required to update the solution | Evergreen – client chooses when to upgrade |
| Cadence of upgrades for multi-tenant deployments | n/a |
| Deployment approach supports elasticity | Yes, automatically |

| Elements | Availability |
|---|--|
| Current APIs-related strategy | Pre-connected cloud environment (fully connneced and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | 50% to 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✗ |
| Need for containerization to run in a cloud | ✓ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 71: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 72: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|-----------------------------|----|------|------|-------|
| Microsoft Azure | □ | □ | □ | □ |
| Amazon AWS | □ | □ | □ | □ |
| Google Cloud Platform (GCP) | □ | □ | □ | □ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | □ | □ | □ | □ |

| Providers | NA | EMEA | APAC | LATAM |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| Oracle Cloud | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Salesforce Cloud, Force.com, AppExchange | × | × | × | × |
| Other | × | × | × | × |
| <u>Legend:</u> ✓ = In production; <input type="checkbox"/> = Supported but not in production; × = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 73: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| System Integrators | Not provided |
| Fintech Partners | Not provided |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 74: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 80%; Client: 20% |
| Location of Employees | 30 |
| Average Time to Implementation | <u>Initial implementation:</u> 1 to 3 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Term license, Perpetual license, Enterprise license, and Subscription-based license |
| Source: Vendor RFI | |

DXC TECHNOLOGY: DXC ASSURE NEW BUSINESS

Company and Product Snapshot

Table 75: Company Snapshot

| | |
|----------------------------|------------------------|
| Year Founded | 2017 |
| Headquarters | Ashburn, VA |
| Number of Employees | 130,000 |
| Revenues (USD) | \$14.43 billion (2023) |
| Financial Structure | NYSE: DXC |
| VendorMatch Link | To be included |

Source: Vendor RFI

Table 76: Product Snapshot

| | |
|---|---|
| Name | DXC Assure New Business |
| Year Originally Released | 2023 |
| Current Release and Date of Release | 24.2/2024 |
| Revenue Derived from Product | DXC is a publicly traded company and does not report revenue at a product level. For reported revenue information, please access: https://investors.dxc.com/investor-relations/default.aspx |
| R&D Expense (last two years) | Confidential |
| FTEs Providing Professional Services for Product | 100 |
| Notable Clients | No current clients |

Source: Vendor RFI

Celent Opinion

DXC's Assure New Business component is a new entry to the North American market. It is powered by DXC's Assure Digital Suite. The component is primarily built for insurers who use DXC's existing policy administration systems and need a workbench for exception processing of underwriting results from third party rules or their own rules engines. According to DXC it can be stand-alone without DXC Assure PAS, but it does require the use of DXC Assure Product. The system is not in production with any clients; however, a proof of concept with a current DXC client is underway.

DXC Assure New Business does not offer an underwriting rules engine. DXC has focused on developing partnerships with third party underwriting engines to execute rules and determine underwriting outcomes. DXC's road map includes creating some of the Part 2 questionnaire rules and the rules needed to evaluate third party underwriting requirement data.

For business and workflow rules, DXC uses an open source business process tool, JBPM. The tool's capabilities do not offer access to rules within the visual workflow diagram, making this configuration cumbersome. Most of the rules are in decision tables which are easy to modify; these rules are designed to trigger next steps. All product rules are built in the DXC Assure Product.

DXC offers a new business portal for D2C and agent eApplication completion. Today, they integrate with RGA AURA Next or Swiss RE Magnum to present the Part 2 questionnaire. An insurer could use their own Part 2 questionnaire, but as mentioned earlier, DXC Assure New Business doesn't include rules to evaluate the responses to these questions. The ability to present case status to the agent during the life cycle of an application is in development.

The system is pre-integrated with other DXC systems, several reinsurance rules engines, and a growing set of external data providers for underwriting requirements. DXC is moving many ACORD transactions used in their DXC legacy products into APIs; today the system offers a catalog with over 600 APIs. While it integrates with Human API and other third party data sources, the system doesn't evaluate the results; it relies on a third party rules engine to do so.

The case manager and underwriter workbench gives case status for a case manager and details about the underwriting results generated by the integrated rules engine for the underwriter. While there are some nice features like communication tools between the underwriter and case managers, the workbench is missing some key functionality. For example, underwriting results from the reinsurers are only available in PDF form in a separate window instead of as digital data. It also requires the underwriter to hover over or open a window to get specific details about the case. A summary of risks, impairments, and non-disclosures would be a nice addition to the workbench main page. Replacing the hover-overs with widgets would also be nice.










Within the workbench, reporting is currently limited to case status. DXC is working on integrating the data to their data lake, which would give them more reporting flexibility and allow the customer to configure different report types. Otherwise, it requires a client to license an external data and analytics tool from DXC. DXC Assure Answers is a new feature within the workbench. The AI copilot returns answers to questions about underwriting rules, product information, or any other text-based documents.

















Current DXC clients can benefit from this system because of its preintegrations with other DXC systems as an underwriting workbench for simple products that rely on reinsurance rules engines for underwriting decisions. Expanded input from underwriters and users should help the system develop further.

Functionality

Table 77: Functionality

Legend

-  = Available out of the box
-  = Configurable through a scripting language/coding
-  = Under development / on road map
-  = Configurable using simple tools for business user
-  = Available with integration to a third party solution
-  = Could develop, would be considered customization
-  = Configurable using simple tools for IT user
-  = Available with integration to a separate module provided by this vendor
-  = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---|---|
| Desktop | | | |
| eApplication—web-based | |  | |
| eApplication—mobile | | |  |
| Dynamic interviewing | |  | |
| Industry standard application form (such as ACORD) import or upload | |  | |
| Data validation during application data capture | |  | |
| Electronic signature capability | |  | |
| External data systems or services integration for data prefill | |  | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | |  | |
| Reinsurer underwriting manual integration | | |  |
| Product dictionary/repository support |  | | |
| Premium calculations based on underwriting class | |  | |
| Rule validation during add/update based on local regulations and regional restrictions. | |  | |
| Testing, modeling, and product analysis tools | |  | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | | |  |
| Rule-based underwriting for less complex / low face amount cases (no touch) | | |  |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | | |  |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | | ● | |
| Underwriter desktop | | ● | |
| Underwriting rules changes monitored and audited by date | | ● | |
| Global, regional, and local underwriting rules support | | ● | |
| Manual underwriting decision audit and update support | | ● | |
| Multiple product and multiple lives simultaneous underwriting support | | ● | |
| System underwriting decision overwrite support | | ● | |
| Automatic creation of algorithmic scores from selected data | | ● | |
| Underwriter authorization limit management | | ● | |
| Rules change “what-if” scenario analysis | | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | | ● | |
| New business status for agents (APIs to portal) | | | ● |
| Demand and capacity management capabilities | | ● | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | | ● | |
| Automated communication to agents on outstanding requirements via email | | | ● |
| Case management workflow-specific rules design and management | | ● | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | | ● | |
| Medical underwriting requirements ordering | | ● | |
| Non-medical underwriting requirements ordering | | ● | |
| Requirement rules changes monitoring/audit | | | ● |
| Internal underwriting requirements management | | ● | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|--|---------------|
| Forms and evidence access from within the NBUW system | | ● | |
| Requirements-specific rule design and management | | ■ | |
| Non-medical underwriting requirements identification | | ● | |
| 3rd party data management (receipt, tracking, and follow-up) | | ● | |
| Reporting and Analytics | | | |
| Predictive analytics | | | ● |
| Ability to create customized reports and run analytics on captured data | | | ● |
| GenAI tools | | | ● |
| Legend | | | |
| ● = Available out of the box | ● = Configurable through a scripting language/coding | ● = Under development / on road map | |
| ● = Configurable using simple tools for business user | ● = Available with integration to a third party solution | ● = Could develop, would be considered customization | |
| ● = Configurable using simple tools for IT user | ● = Available with integration to a separate module provided by this vendor | ● = Not available / not applicable | |

Source: Vendor RFI

Lines of Business Supported

Table 78: Lines of Business Supported

| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | □ | × | × | × |
| Annuity | □ | × | × | × |
| Health | × | × | × | × |
| Other | × | × | × | × |

Legend: ✓ = In production; □ = Supported but not in production; × = Not supported

Source: Vendor RFI

Customer Base

There are no clients currently in production with the system. DXC is an a proof of concept stage with a client using another DXC system.

Technology

Table 79: Technology Options

| Technology Options | Responses |
|----------------------------|--|
| Code Base | Java: 90%; Node JS: 5%; React JS: 5% |
| Integration Methods | Web services; XML (not through web services); HTML; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; Custom APIs; and Flat files |
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✓ API developer portal is available for support and descriptions. |
| | ✗ API testing portal and the ability to use scripts on website is available. |
| | ✗ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✗ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✓ Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 80: SaaS Capabilities

| Elements | Availability |
|--|--|
| Supports a multi-tenant architecture | ✗ |
| Type of effort required to update the solution | Automated scripts – fully automated |
| Cadence of upgrades for multi-tenant deployments | n/a |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |

| Elements | Availability |
|---|--------------|
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✗ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| Legend: ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 81: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ● |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | □ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | □ |
| Screen Definition | □ |
| Workflow Definition | ✓ |
| Legend: ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 82: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✗ | ✗ | ✗ | ✗ |
| Amazon AWS | □ | ✗ | ✗ | ✗ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 83: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|--|
| System Integrators | DXC has no formal relationships with third party system integrators. |
| Fintech Partners | DXC has a specific group of insurance partnerships for functions such as analytics, visualization, robotics, and underwriter requirements. DXC has an ever-increasing group of partnerships which include fintech firms. |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 84: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 50%; Client: 50% |
| Location of Employees | DXC Technology has 50 employees in North America |
| Average Time to Implementation | <u>Initial implementation</u> : 4 to 6 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 3 months |
| Pricing Models | Term license, Enterprise license, and Subscription-based license |

Source: Vendor RFI

EXL SERVICE: LIFE DIGITAL SUITE

Company and Product Snapshot

Table 85: Company Snapshot

| | |
|----------------------------|--------------------------------------|
| Year Founded | 1999 |
| Headquarters | New York, NY |
| Number of Employees | 55,000 |
| Revenues (USD) | \$1.63 billion (2023) |
| Financial Structure | NASDAQ: EXLS |
| VendorMatch Link | EXL VendorMatch Link |

Source: Vendor RFI

Table 86: Product Snapshot

| | |
|---|--|
| Name | Life Digital Suite |
| Year Originally Released | 2010 |
| Current Release and Date of Release | 2.6.0/2024 |
| Revenue Derived from Product | Not disclosed |
| R&D Expense (last two years) | 20% of total revenue attributed to this solution |
| FTEs Providing Professional Services for Product | 50 |
| Notable Clients | Not disclosed |

Source: Vendor RFI

Celent Opinion

The Life Digital Suite (LDS) is a modern, low-code, highly configurable new business and underwriting solution. LDS offers an electronic application (eApp), a complete underwriting rules engine, and a case management and underwriting workbench along with robust reporting tools. With 12 clients in production in North America and 9 in EMEA, and 6 new clients across both regions over the past two years, LDS is a strong contender in the North American and European markets.

The system has 15,000 preconfigured rules developed by clients and an underwriting consultant. Clients can configure the LDS rule book or use a reinsurer rule book. Over 300 medical conditions are prebuilt in LDS.

The rules are configured using a no-code/low-code approach with a visual designer that allows for building workflows and underwriting decision rules in a simple, visual way. The integrated test harness is built on the same visual tool, allowing the execution and testing of the rule right from the designer tool. The rules are set up during implementation by EXL. Post-implementation, the rules are maintained by the clients, typically without IT help. There is a full audit trail for change.

New in 2024 is the ability to change the language in the UI. The UI includes low-code/no-code formatting and has a consistent look and feel across the platform.

The system comes preconfigured with dozens of interfaces to external providers. LDS also allows for the simple definition and interconnection to new providers.

The LDS underwriter workbench shows the full underwriting journey in a process flow. Within the pages, the underwriter is notified of an area to review by a yellow triangle flag, including risk disclosures and missing data, and within the requirements it highlights the areas in need of review. Notes allow for smart tagging so that others will receive the note if they were tagged. EXL is working on automation of pre- and post-issue data comparisons for auditing.

New to the system in the latest release is Underwriter Assist, a summarization and query tool using generative AI (GenAI). Through this tool, unstructured data can be queried and searched by the underwriter in an efficient manner. This is quite powerful.










Embedded machine learning allows managers to track cases on three parameters: cost, volume, and time-to-execute. The system provides visualization via a flowchart of where inefficiencies are occurring and provides the ability to drill down into the rules. Data can be extrapolated to show how similar cases were underwritten as well as the cost of the historical case. AB testing is available to test rules changes to see what is most efficient.


















Overall, LDS is one of the most user-friendly systems reviewed. Insurers who have selected it are happy with their choice and with EXL. EXL LDS should be on an insurer's short list when considering best-of-breed new business and underwriting systems.

Functionality















Table 87: Functionality

Legend

-  = Available out of the box
-  = Configurable through a scripting language/coding
-  = Under development / on road map
-  = Configurable using simple tools for business user
-  = Available with integration to a third party solution
-  = Could develop, would be considered customization
-  = Configurable using simple tools for IT user
-  = Available with integration to a separate module provided by this vendor
-  = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based |  | | |
| eApplication—mobile |  | | |
| Dynamic interviewing |  | | |
| Industry standard application form (such as ACORD) import or upload |  | | |
| Data validation during application data capture |  | | |
| Electronic signature capability |  | | |
| External data systems or services integration for data prefill |  | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management |  | | |
| Reinsurer underwriting manual integration |  | | |
| Product dictionary/repository support |  | | |
| Premium calculations based on underwriting class |  | | |
| Rule validation during add/update based on local regulations and regional restrictions. |  | | |
| Testing, modeling, and product analysis tools |  | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management |  | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) |  | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) |  | | |
| Complex rule processing via 3rd party rules engines |  | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● | | |
| Rules change “what-if” scenario analysis | | ● | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | ● | | |
| Forms and evidence access from within the NBUW system | ● | | |
| Requirements-specific rule design and management | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---------------------------------|---------------|
| Non-medical underwriting requirements identification |  | | |
| 3rd party data management (receipt, tracking, and follow-up) |  | | |
| Reporting and Analytics | | | |
| Predictive analytics |  | | |
| Ability to create customized reports and run analytics on captured data |  | | |
| GenAI tools |  | | |
| Legend  = Available out of the box  = Configurable using simple tools for business user  = Configurable using simple tools for IT user  = Configurable through a scripting language/coding  = Available with integration to a third party solution  = Available with integration to a separate module provided by this vendor  = Under development / on road map  = Could develop, would be considered customization  = Not available / not applicable | | | |
| Source: Vendor RFI | | | |

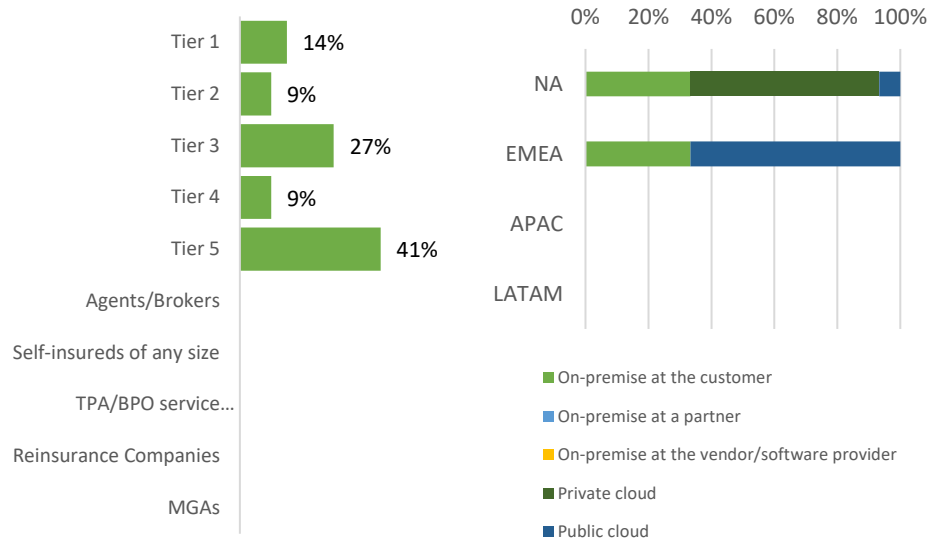
Lines of Business Supported

Table 88: Lines of Business Supported

| Line of Business | NA | EMEA | APAC | LATAM |
|---|--------------------------|--------------------------|--------------------------|--------------------------|
| Life | ✓ | ✓ | <input type="checkbox"/> | <input type="checkbox"/> |
| Annuity | ✓ | <input type="checkbox"/> | ✓ | <input type="checkbox"/> |
| Health | ✓ | ✓ | <input type="checkbox"/> | <input type="checkbox"/> |
| Other | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Legend: ✓ = In production; <input type="checkbox"/> = Supported but not in production; x = Not supported | | | | |
| Source: Vendor RFI | | | | |

Customer Base

Table 89: Client Base by Size and Deployment Option (Global or NA only)



Source: Vendor RFI

Table 90: Implementations by Country

| Region | Countries |
|-----------------|------------------------|
| North America | United States, Canada |
| Europe | Greece, United Kingdom |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 91: Technology Options

| Technology Options | Responses |
|---------------------|--|
| Code Base | Java: 70%; JavaScript: 10%; Angular: 20% |
| Integration Methods | Web services; XML (not through web services); HTML; HTTP; RESTful HTTP style services; JSON format |

| Technology Options | Responses |
|--------------------|--|
| | MQSeries/JMS/Similar queue technology; Custom APIs; Flat files; and GraphQL |
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✗ API developer portal is available for support and descriptions. |
| | ✗ API testing portal and the ability to use scripts on website is available. |
| | ✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✗ API version management is available. |
| | ✓ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✓ Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 92: SaaS Capabilities

| Elements | Availability |
|--|--|
| Supports a multi-tenant architecture | ✗ |
| Type of effort required to update the solution | Automated scripts – fully automated |
| Cadence of upgrades for multi-tenant deployments | Not reported |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Under 25% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |

| Elements | Availability |
|---|--------------|
| Need for containerization to run in a cloud | ✓ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> a= Yes r = No | |
| Source: Vendor RFI | |

Table 93: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; x = Not available | |
| Source: Vendor RFI | |

Table 94: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | □ | ✓ | x | x |
| Amazon AWS | ✓ | □ | □ | □ |
| Google Cloud Platform (GCP) | x | x | x | x |
| Alibaba Cloud | x | x | x | x |
| IBM Cloud / Bluemix | x | x | x | x |
| Oracle Cloud | x | x | x | x |
| Salesforce Cloud, Force.com, AppExchange | x | x | x | x |
| Other | x | x | x | x |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; x = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 95: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| System Integrators | None |
| Fintech Partners | None |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 96: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 50%; Client: 50% |
| Location of Employees | EXL Service has 10 employees in North America, 10 employees in EMEA, and 20 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation</u> : 4 to 6 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 2 weeks |
| Pricing Models | Term license, Perpetual license, Enterprise license, Subscription-based license, and Other |

Source: Vendor RFI

HANNOVER RE: HR | REFLEX

Company and Product Snapshot

Table 97: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 1966 |
| Headquarters | Hanover, Germany (Global) Orlando, FL (US) |
| Number of Employees | 3,000 |
| Revenues | €24.5 billion (2023) |
| Financial Structure | DAX (HNR1.DE) |
| VendorMatch Link | Hannover Re VendorMatch Link |
| Source: Vendor RFI | |

Table 98: Product Snapshot

| | |
|---|--|
| Name | hr ReFlex |
| Year Originally Released | 2015 |
| Current Release and Date of Release | 24/2024 |
| Revenue Derived from Product | Confidential |
| R&D Expense (last two years) | Confidential |
| FTEs Providing Professional Services for Product | 51 |
| Notable Clients | <u>North America</u> : Penn Mutual, Fidelity Life Association, AAA Life Insurance <u>EMEA</u> : El Corte Ingles (Spain), Group April (France), Vordur (Iceland) |
| Source: Vendor RFI | |

Celent Opinion

Hr | ReFlex (ReFlex) is an on-premise solution that provides immediate risk decisions directly at the point of sale by calling out to a Hannover Re rule set for each application. Underwriting rules exist in a preconfigured Knowledgebase that can be modified to suit an insurer's risk appetite. The ReFlex software is separate from the rule set, which makes updating the software very easy. Insurers may opt to deploy the software in their own cloud or non-cloud server. There are 6 insurers in North America using ReFlex and 18 globally; 16 are within EMEA. ReFlex has seen great momentum globally, with 17 new sales in the last two years.

All Hannover Re underwriting rules reside in the ReFlex Knowledgebase, which is maintained by Hannover Re. Knowledgebase releases happen every two weeks and are part of the maintenance agreement. The rules engine is a web service. Clients can propose changes to the Knowledgebase, but Hannover Re will implement them after extensive testing to ensure existing rules are not disrupted. Recent changes to the Knowledgebase included adding rules to account for changes in lab results due to pregnancy. A nice new feature is the Compare function, which shows recent changes to the Knowledgebase for testing and audit purposes.

If using their own questions and rules, clients can manage changes using the Knowledge Workbench and Application Form Editor. Drag-and-drop tools are used to modify or reorder rules and questions. The advanced search tool can find every place where specific terms or wording is used within a question or rule detail, offering a whole picture of how the questions and rules interact.

ReFlex is headless and accepts data from all channels. The insurer may use the complete ReFlex questionnaire, or they can import Part I questions from an existing application. The ReFlex questionnaire gets populated as needed with the imported data.

Since our last review, Hannover Re developed a customer service portal to allow underwriters to communicate with the customer service departments or agents and brokers. They have also developed a claims module that is used by insurers outside of the United States.

ReFlex is integrated with the standard third party evidence providers. Cases that fail the rules for accelerated underwriting will be referred to the underwriter and visible on ReFlex's underwriter workbench. All rules may be run each time new data is received or updated, and if non-disclosures are found, new questions are added to the application. ReFlex Select, a tool that provides automated assessments of lab tests and offers recommendations based on Hannover Re historical data via an API, is also available for a fee on each application assessed.

Clients can use the Hannover Re underwriting workbench or integrate with a third party workbench. The reinsurer's workbench provides the ability to order and review evidence, add debits and credits, order additional requirements, refer cases, and make the underwriting decision. The system provides an easy-to-view assessment of how it determined the underwriting class, and the system decision can be overridden by the underwriter. Access to the underwriting manual is also available. The communication capabilities between underwriters and case managers are strong. The workbench also has an administration portal that allows managers to assign cases and manage SLAs.

ReFlex's reporting dashboard includes data visualization in the form of 120 preset charts and filtering capabilities. Insurers can use it to analyze their own data or, for the same fee, they can get the data and use their own BI tools. Hannover Re is considering the use of AI but has no immediate plans to launch an AI product.

Insurers who are interested in accelerated underwriting will find the ReFlex system provides a quick start with preconfigured rules and a very usable workbench.

Functionality

Table 99: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | | | ● |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | | ● | |
| Multiple product and multiple lives simultaneous underwriting support | | ● | |
| System underwriting decision overwrite support | | ● | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | | ● | |
| Rules change “what-if” scenario analysis | | ● | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | | | ● |
| New business status for agents (APIs to portal) | | | ● |
| Demand and capacity management capabilities | | | ● |
| Case management correspondence capabilities including expiry, follow-up actions, dates | | | ● |
| Automated communication to agents on outstanding requirements via email | | | ● |
| Case management workflow-specific rules design and management | | | ● |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | | | ● |
| Requirement rules changes monitoring/audit | | ● | |
| Internal underwriting requirements management | | | ● |
| Forms and evidence access from within the NBUW system | | ● | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | | | ● |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | | | ● |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 100: Lines of Business Supported

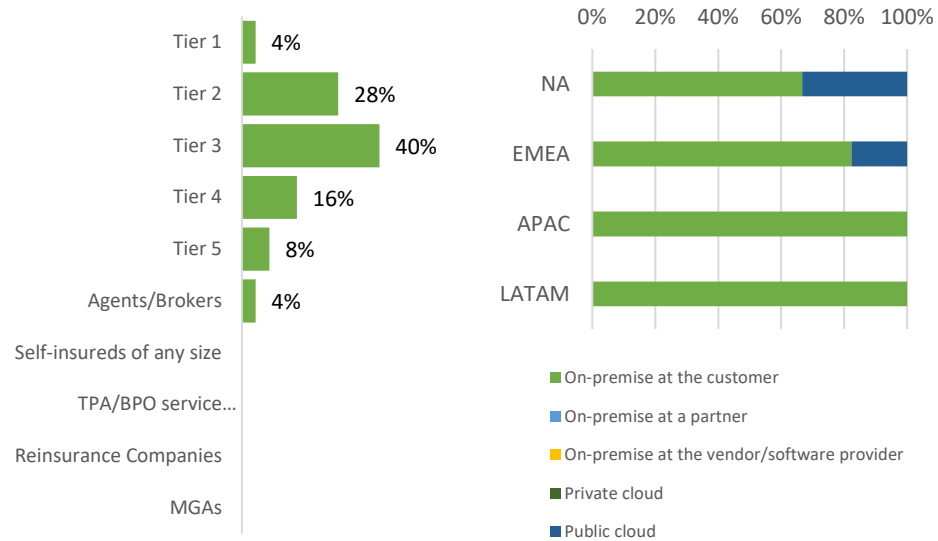
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✓ | ✓ | ✓ |
| Annuity | □ | □ | □ | □ |
| Health | ✗ | ✗ | ✗ | □ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 101: Client Base by Size and Deployment Option (Global)



Source: Vendor RFI

Table 102: Implementations by Country

| Region | Countries |
|-----------------|--|
| North America | United States |
| Europe | Finland, France, Germany, Iceland, Norway, Russia, Slovakia, Spain, Sweden |
| Middle East | Qatar |
| Africa | |
| Asia-Pacific | Pakistan |
| Central America | |
| South America | Peru |
| Caribbean | |

Source: Vendor RFI

Technology

Table 103: Technology Options

| Technology Options | Responses |
|--------------------|---------------------------------------|
| Code Base | Java: 80%; JavaScript: 5%; Other: 15% |

| Technology Options | Responses | |
|----------------------------|---|--|
| Integration Methods | Web services; HTML; RESTful HTTP style services; JSON format; Custom APIs | |
| API Details | ✓ | The API is documented. |
| | ✓ | External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✗ | API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ | API sample codes are available to clients. |
| | ✗ | API developer portal is available for support and descriptions. |
| | ✗ | API testing portal and the ability to use scripts on website is available. |
| | ✓ | System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ | API version management is available. |
| | ✗ | Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✗ | Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 104: SaaS Capabilities

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | Yes |
| Type of effort required to update the solution | Evergreen – client chooses when to upgrade |
| Cadence of upgrades for multi-tenant deployments | More frequent than every 3 months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | Yes |
| Ability to enable independent services (microservices) | Yes |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | Yes |
| Ability to run and deploy under containers to improve the application deployment | Yes |
| Need for containerization to run in a cloud | No |

| Elements | Availability |
|---|--------------|
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | Yes |
| <u>Legend:</u> ✓ = Yes x = No | |
| Source: Vendor RFI | |

Table 105: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ⊖ |
| Data Definition | ■ |
| Table Maintenance, List of Values, etc. | □ |
| Interface Definition | ⊖ |
| Product Definition | ⊖ |
| Role-Based Security, Access Control, and Authorizations | ⊖ |
| Screen Definition | □ |
| Workflow Definition | □ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; x = Not available | |
| Source: Vendor RFI | |

Table 106: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | □ | □ | □ | □ |
| Amazon AWS | ✓ | ✓ | □ | □ |
| Google Cloud Platform (GCP) | ✓ | □ | □ | □ |
| Alibaba Cloud | □ | □ | □ | □ |
| IBM Cloud / Bluemix | □ | □ | □ | □ |
| Oracle Cloud | □ | □ | □ | □ |
| Salesforce Cloud, Force.com, AppExchange | □ | □ | □ | □ |
| Other | x | x | x | x |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; x = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 107: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| System Integrators | Not applicable |

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| Fintech Partners | Not provided |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 108: Implementation, Support, and Pricing

| | |
|---|---|
| Typical Implementation Team Size | 16 to 20 |
| Resource Breakdown | Vendor: 75%; Client: 15%; Third party: 10% |
| Location of Employees | Hannover Re has 12 employees in North America and 40 employees in EMEA |
| Average Time to Implementation | <u>Initial implementation:</u> 4 to 6 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Term license, Perpetual license, Subscription-based license, and Transaction fee or flat annual fee for unlimited volume |
| Source: Vendor RFI | |

INFOSYS BPM LTD: INFOSYS MCCAMISH NEW BUSINESS & UNDERWRITING SOLUTION

Company and Product Snapshot

Table 109: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 1982 |
| Headquarters | Bengaluru, India (Global) Atlanta, GA (North America) |
| Number of Employees | 335,186 |
| Revenues (USD) | \$18.55 billion (2023) |
| Financial Structure | Public – NYSE: INFY |
| VendorMatch Link | Infosys VendorMatch Link |
| Source: Vendor RFI | |

Table 110: Product Snapshot

| | |
|---|---|
| Name | Infosys McCamish New Business & Underwriting Solution |
| Year Originally Released | 2019 |
| Current Release and Date of Release | 2024 - P11/2024 |
| Revenue Derived from Product | Not Disclosed |
| R&D Expense (last two years) | Over 15% of revenue is spent on R&D expense. A significant portion of that is invested in the Infosys McCamish New Business and Underwriting product. |
| FTEs Providing Professional Services for Product | 100 |
| Notable Clients | Not provided |
| Source: Vendor RFI | |

Celent Opinion

A very new entrant to the market, Infosys has been developing an underwriter workbench and rules engine since their acquisition of Dillon Kane's STEP Solutions in 2021. Infosys New Business and Underwriting currently supports the annuity market; life insurance protection products are in development. Infosys currently has one client using the platform for annuity new business.

The automated underwriting rules engine consists of three primary components: the configuration tool, rules sets, and question sets. Underwriters can create medical or non-medical rules categories based on their underwriting guidelines. The configuration process for each category—including mapping it to a product, assigning risk types and weights, categorizing it as active or inactive, defining attributes, and triggering next actions—is all completed in a very user-friendly UI. The question sets are mapped to categories and attributes and include evaluation rules for third party data. Infosys has created a full set of reusable rule and question set templates.

The system's UIs are very clean and modern. The configuration UIs for underwriting rules, questionnaires, and products all have a similar look and feel. The workflow uses VPM 2.0 where they use activity plug-ins to create and maintain the workflow; workflow configuration may require technical knowledge. Application IGO rule configuration is still being developed.

Infosys New Business underwriting is preintegrated with RGA Aura's medical questionnaire. Infosys is in conversations with Swiss Re to present their questionnaire. Infosys offers an underlying evidence management service for third party data collection. Infosys can integrate with any commercial off-the-shelf workflow application.

The agent portal, a separate Infosys solution, has a microservices-based architecture with APIs. Infosys can integrate with and provide data to insurer portals or third party portals as needed. Other Infosys systems, like PMACs and VPAS or NGIN PAS as well as DocuSign, are pre-integrated.

The case management and underwriting workbench offers color-coded case status to show which cases are in good order and which need attention. Once again, the UI is easy to follow. The underwriter workbench has a card-driven UI that includes a timeline of the events on the case. While it is a user-friendly UI, what is missing is an easy way to identify what an underwriter should review or a summary of the risks. According to Infosys, both are on the road map. Overall, this is a very nice underwriter workbench, and their development is ongoing.

The case manager's hub within the underwriter workbench provides reporting and analytics. KPIs widgets are provided as visual interactive charts and are based on time-stamped events triggered in the system. Infosys is working on expanding their standard operational reports and making them available within the new business and underwriting system as an out-of-the-box feature. Infosys can export this data for clients and partners to use in their own data lakes and BI tools.

Although a new system, Infosys has developed a nice NBUW system; this three-year effort has paid off. Infosys is coming to market with a very competitive system, albeit with a pretty hefty road map. They are worth considering if you are willing to be part of the development process.

Functionality

Table 111: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------------------------------|---------------------------------------|---------------------------------------|
| Desktop | | | |
| eApplication—web-based | | ● | |
| eApplication—mobile | | | ● |
| Dynamic interviewing | | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | | ● | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | | ● | |
| Reinsurer underwriting manual integration | | ● | |
| Product dictionary/repository support | | ● | |
| Premium calculations based on underwriting class | | ● | |
| Rule validation during add/update based on local regulations and regional restrictions. | | ● | |
| Testing, modelling, and product analysis tools | | | ● |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | | ● | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Rule-based underwriting for less complex / low face amount cases (no touch) | | ● | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | | ● | |
| Complex rule processing via 3rd party rules engines | | ● | |
| Underwriter desktop | | ● | |
| Underwriting rules changes monitored and audited by date | | ● | |
| Global, regional, and local underwriting rules support | | ● | |
| Manual underwriting decision audit and update support | | ● | |
| Multiple product and multiple lives simultaneous underwriting support | | ● | |
| System underwriting decision overwrite support | | ● | |
| Automatic creation of algorithmic scores from selected data | | ● | |
| Underwriter authorization limit management | | ● | |
| Rules change “what-if” scenario analysis | | | ● |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|--|---------------|
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | ● | |
| Identification of medical underwriting requirements | | ● | |
| Medical underwriting requirements ordering | | ● | |
| Non-medical underwriting requirements ordering | | ● | |
| Requirement rules changes monitoring/audit | | | ● |
| Internal underwriting requirements management | | ● | |
| Forms and evidence access from within the NBUW system | ● | | |
| Requirements-specific rule design and management | | ● | |
| Non-medical underwriting requirements identification | | ● | |
| 3rd party data management (receipt, tracking, and follow-up) | | ● | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | | ● | |
| GenAI tools | | ● | |
| Legend | | | |
| ● = Available out of the box | ● = Configurable through a scripting language/coding | ● = Under development / on road map | |
| ● = Configurable using simple tools for business user | ● = Available with integration to a third party solution | ● = Could develop, would be considered customization | |
| ● = Configurable using simple tools for IT user | ● = Available with integration to a separate module provided by this vendor | ● = Not available / not applicable | |
| Source: Vendor RFI | | | |

Lines of Business Supported

Table 112: Lines of Business Supported

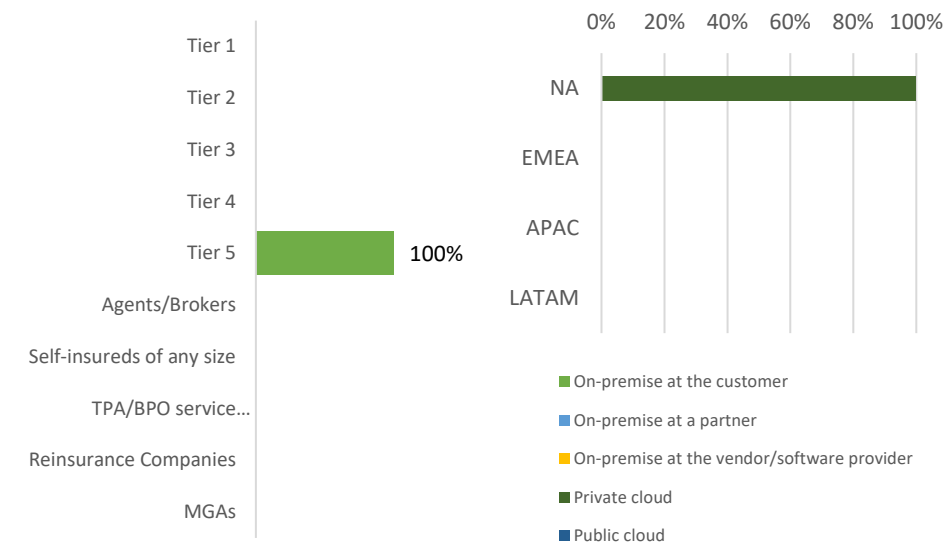
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Life | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Annuity | ✓ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Health | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; ☐ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 113: Client Base by Size and Deployment Option (NA)



Source: Vendor RFI

Table 114: Implementations by Country

| Region | Countries |
|-----------------|---------------|
| North America | United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | |

| Region | Countries |
|--------------------|-----------|
| South America | |
| Caribbean | |
| Source: Vendor RFI | |

Technology

Table 115: Technology Options

| Technology Options | Responses |
|---------------------|--|
| Code Base | Java: 75%; Angular: 25% |
| Integration Methods | Web services; HTTP; RESTful HTTP style services; JSON format; WebSocket API; Kafka/JMS/Similar queue technology; Flat files; and GraphQL |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✓ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✓ API testing portal and the ability to use scripts on website is available.</div> <div>✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✓ Training in extending the system is offered.</div> |

Legend: ✓ = Available; □ = Not available

Source: Vendor RFI

Table 116: SaaS Capabilities

| Elements | Availability |
|--|--------------------------------------|
| Supports a multi-tenant architecture | ✗ |
| Type of effort required to update the solution | Automated scripts – mostly automated |
| Cadence of upgrades for multi-tenant deployments | 0 |
| Deployment approach supports elasticity | ✗ |

| Elements | Availability |
|---|----------------------------|
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✓ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes; x = No | |
| Source: Vendor RFI | |

Table 117: Change Tooling and Upgrades

| Types of Changes | Availability |
|---|--------------------------|
| Business Rule Definition | <input type="checkbox"/> |
| Data Definition | ⊖ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | <input type="checkbox"/> |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ● |
| Workflow Definition | <input type="checkbox"/> |
| <u>Legend:</u> ✓ = Configurable via tools for business users; <input type="checkbox"/> = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; x = Not available | |
| Source: Vendor RFI | |

Table 118: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|-----------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Microsoft Azure | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Amazon AWS | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Google Cloud Platform (GCP) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alibaba Cloud | x | x | x | x |
| IBM Cloud / Bluemix | x | x | x | x |
| Oracle Cloud | x | x | x | x |

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Salesforce Cloud, Force.com, AppExchange | × | × | × | × |
| Other | × | × | × | × |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; × = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 119: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------------|---|
| System Integrators | Infosys Limited is one of the largest system integrators with presence across all major regions, countries, and locations. They are open to work with others based on client preferences but have not found the need. |
| Fintech Partners | Multiple insurtech partnerships are at various stages of progress. |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 120: Implementation, Support, and Pricing

| | |
|---|---|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 50%; Client: 50% |
| Location of Employees | Infosys BPM Ltd has 3,000 employees in North America, 1,300 employees in EMEA, and 4,400 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation:</u> 1 to 3 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Term license, Perpetual license, Enterprise license, and Subscription-based license |

Source: Vendor RFI

IPIPELINE: RESONANT NEW BUSINESS & UNDERWRITING

Company and Product Snapshot

Table 121: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 1995 Acquired by Roper Technologies in 2019 |
| Headquarters | Exton, PA |
| Number of Employees | 845 |
| Revenues (USD) | \$6.2 billion (2023 – Roper Technologies) |
| Financial Structure | Public - NYSE ROP |
| VendorMatch Link | iPipeline VendorMatch Link |
| Source: Vendor RFI | |

Table 122: Product Snapshot

| | |
|---|--|
| Name | Resonant New Business & Underwriting |
| Year Originally Released | 2005 |
| Current Release and Date of Release | Version 4.4/2022 |
| Revenue Derived from Product | Do not disclose revenues by product line |
| R&D Expense (last two years) | Do not disclose R&D expense; however, like most SaaS companies, iPipeline spends 10% to 20% of our annual budget on R&D. |
| FTEs Providing Professional Services for Product | 300 |
| Notable Clients | Navy Mutual, Farm Bureau Financial Services, Security Mutual, and Foresters |
| Source: Vendor RFI | |

Celent Opinion

Resonant can be deployed as a full-service underwriting and new business system, as an underwriting or case management workbench, or as a headless underwriting decision engine. Resonant supports fully underwritten to accelerated underwriting

cases using third party evidence. In the last two years, Resonant has mostly updated the back end, visible by iPipeline. It is virtually unchanged to the insurer or end user. Resonant is in production with 21 clients in North America, with 6 new deals in the last two years.

The Guideline Manager rules engine is the repository of an insurer's product, business, and underwriting rules. It is a self-service tool for insurers, although many rely on iPipeline for initial setup and more complex rules configuration. Only a few clients do rules changes themselves. The tool produces an XML output that Resonant consumes to drive rules and validations. Guideline Manager is very easy to use because it is set up like a continuous Word document and acts both as documentation of the rules and the rules themselves.

iPipeline doesn't offer a producer portal with Resonant. It provides data feeds like Acord 1125s as needed to supply an insurer's portal or a distributor's agency management system with pending case status updates. iPipeline now integrates with its own AMS Agency Integrator, a fairly recent development. The demo didn't show any eApplication examples to demonstrate how rules and third party integrations with Resonant are processed. Chat bots are available via an API between agents and underwriters.

Resonant offers standard integrations with leading industry vendors for requirements gathering and provides the capability to determine decisions at the point of sale. It includes real time automatic ordering, receipt, decisioning, and routing of an application and medical evidence. Resonant integrates with iPipeline's eApp iGO for point-of-sale decisioning. Resonant also integrates with DocFast, iPipeline's eDelivery solution. New this year is the ability for insurers to manage and track their integrations and APIs.

The workbench for case management and underwriting is virtually unchanged from our last review; it is still tabular and workflow based. It offers a full case summary as well as case data, document storage, and consolidated notes in several places within the sheet. The activities tab summarizes all the exception-based work that an underwriter should be reviewing on the case. The decision tab shows all product restrictions and underwriting data that has been evaluated.

iPipeline offers preconfigured reporting dashboards within Resonant with signal and operational reports. Clients can also access the data via Snowflake for their own internal use. iPipeline offers a PowerBI dashboard as a separate system.

In terms of the road map, iPipeline is looking at inbox redesigns and replacement of the Guideline Manager with a more modern rules engine, to name a few. Generative AI for underwriting evaluation is not yet on their road map; they are relying on partners for medical data summarizations.

Celent continues to believe Resonant is a strong short-list contender for any insurers looking for a new business and underwriting system, however it seems that it has not changed much in the last four years. Insurers may want to evaluate the road map against their needs to be sure Resonant will meet requirements today and in the future.
























Functionality
















Table 123: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------------------------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---|---|---------------|
| Complex rule processing via 3rd party rules engines |  | | |
| Underwriter desktop |  | | |
| Underwriting rules changes monitored and audited by date |  | | |
| Global, regional, and local underwriting rules support |  | | |
| Manual underwriting decision audit and update support |  | | |
| Multiple product and multiple lives simultaneous underwriting support |  | | |
| System underwriting decision overwrite support |  | | |
| Automatic creation of algorithmic scores from selected data |  | | |
| Underwriter authorization limit management |  | | |
| Rules change “what-if” scenario analysis | |  | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data |  | | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers |  | | |
| New business status for agents (APIs to portal) |  | | |
| Demand and capacity management capabilities |  | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates |  | | |
| Automated communication to agents on outstanding requirements via email |  | | |
| Case management workflow-specific rules design and management |  | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements |  | | |
| Medical underwriting requirements ordering |  | | |
| Non-medical underwriting requirements ordering |  | | |
| Requirement rules changes monitoring/audit |  | | |
| Internal underwriting requirements management |  | | |
| Forms and evidence access from within the NBUW system |  | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---------------------------------|---|
| Requirements-specific rule design and management |  | | |
| Non-medical underwriting requirements identification |  | | |
| 3rd party data management (receipt, tracking, and follow-up) |  | | |
| Reporting and Analytics | | | |
| Predictive analytics |  | | |
| Ability to create customized reports and run analytics on captured data |  | | |
| GenAI tools | | |  |
| Legend <div>  = Available out of the box  = Configurable through a scripting language/coding  = Under development / on road map </div> <div>  = Configurable using simple tools for business user  = Available with integration to a third party solution  = Could develop, would be considered customization </div> <div>  = Configurable using simple tools for IT user  = Available with integration to a separate module provided by this vendor  = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 124: Lines of Business Supported

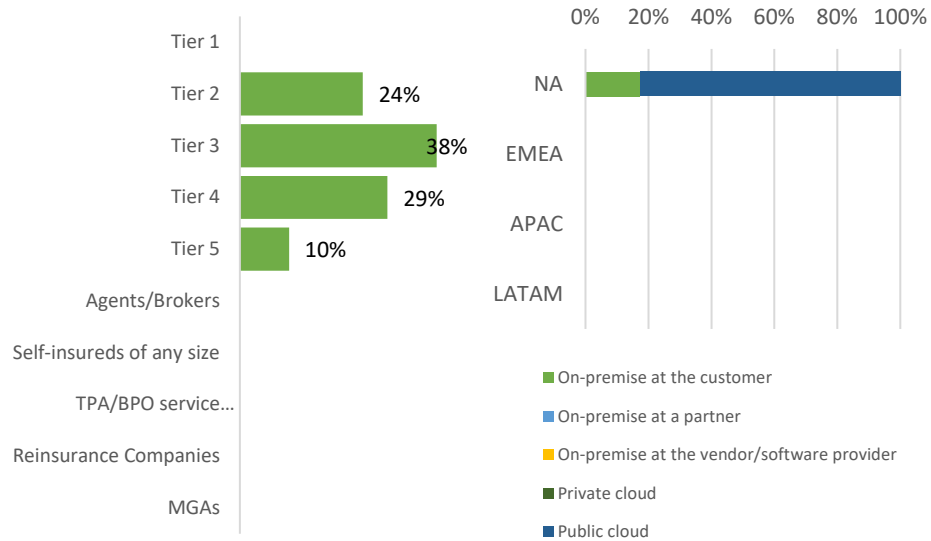
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✗ | ✗ | ✗ |
| Annuity | ✓ | ✗ | ✗ | ✗ |
| Health | ✓ | ✗ | ✗ | ✗ |
| Other | ☐ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; ☐ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 125: Client Base by Size and Deployment Option (North America)



Source: Vendor RFI

Table 126: Implementations by Country

| Region | Countries |
|-----------------|--------------------------------|
| North America | Bermuda, Canada, United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 127: Technology Options

| Technology Options | Responses |
|---------------------|---|
| Code Base | .Net: 90%; Java: 10% |
| Integration Methods | Web services; XML (not through web services); RESTful HTTP style services; JSON format; Custom APIs; Flat files |

| Technology Options | Responses |
|--------------------|--|
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✗ API developer portal is available for support and descriptions. |
| | ✓ API testing portal and the ability to use scripts on website is available. |
| | ✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✓ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✓ Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 128: SaaS Capabilities

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Evergreen – client chooses when to upgrade |
| Cadence of upgrades for multi-tenant deployments | iPipeline doesn't offer multi-tenant code deployments. They have multiple product releases each year, but each client has their own deployment schedule. |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✗ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Under 25% |

| Elements | Availability |
|---|--------------|
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✓ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✗ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 129: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ⊖ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 130: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✗ | ✗ | ✗ | ✗ |
| Amazon AWS | ✓ | ✗ | ✗ | ✗ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 131: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------------|--|
| System Integrators | iPipeline regularly works with SIs that customers bring to implementations. Resonant does not itself OEM any components. Via partnership, Resonant is the OEM or resold new business and underwriting component of the Infosys McCamish solution suite and has similar partnerships with Cognizant and se2. |
| Fintech Partners | iPipeline sees its biggest impact to the industry coming from its SSG end-to-end client acquisition platform. iPipeline integrates Resonant with its Illustration, iGO eApp, and DocFast electronic policy delivery solutions. In addition to its internal product ecosystem, Resonant also offers as part of the standard product integrations to all of the leading evidence vendors in North America, and they have strategic partnerships with companies such as Formotiv, Atidot, Proformex, and other providers of ancillary fintech capabilities. |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 132: Implementation, Support, and Pricing

| | |
|---|---|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 10%; Client: 10%; Third party: 2% |
| Location of Employees | iPipeline has 300 employees in North America and 100 employees in EMEA |
| Average Time to Implementation | <u>Initial implementation:</u> 4 to 6 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Subscription-based license |

Source: Vendor RFI

MUNICH RE AUTOMATION SOLUTIONS: ALLFINANZ NOVA AND ALLFINANZ SPARK

Company and Product Snapshot

Table 133: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 1986 |
| Headquarters | Dublin, Ireland |
| Number of Employees | 178 |
| Revenues (USD) | \$28.1 million (2023) |
| Financial Structure | Munich Re Automation Solutions Ltd. is a wholly-owned subsidiary of the Munich Re Group. Munich Re Group is publicly traded on all German stock exchanges under the symbol MUV2. |
| VendorMatch Link | Munich Re VendorMatch Link |
| Source: Vendor RFI | |

Table 134: Product Snapshot

| | |
|---|--|
| Name | ALLFINANZ NOVA is targeted at insurers that require complete flexibility in the configuration and adaption of the solution to specific customer requirements, including extensive integration with upstream and downstream systems. ALLFINANZ SPARK is targeted at insurers who want a standardized platform with rich features and fast speed to market. |
| Year Originally Released | 1997 |
| Current Release and Date of Release | 4.29/2024 |
| Revenue Derived from Product | Confidential |
| R&D Expense (last two years) | Confidential |
| FTEs Providing Professional Services for Product | 40 |
| Notable Clients | <u>North America</u> : Pacific Life, Lincoln Financial, Transamerica, Brighthouse Financial, SunLife Canada |

EMEA: Vitality UK, Fremtind Norway, Old Mutual, Sanlam, Liberty

APAC: HSBC Hong Kong, Manulife Hong Kong, Aflac Japan, Gibraltar Japan, Daido Japan, Prudential Thailand, Thai Life, Sun Life Philippines, Singlife Singapore

LATAM: Prudential Brazil, Binaria Argentina, Asesuisa El Salvador

Source: Vendor RFI

Celent Opinion

Similar to Celent's review in 2022, Munich Re is profiling two solutions together: NOVA and SPARK. Each specializes in point-of-sale underwriting, but can handle full underwriting across a broad range of products. The difference between the two offerings is that ALLFINANZ SPARK offers a more standardized configuration approach where rules may be modified as needed with the Rules Designer, but the goal is to take them out of the box. ALLFINANZ NOVA enables a more bespoke approach offering flexibility to configure and adapt the solution to meet insurer requirements, including extensive integration with upstream and downstream systems.

The Munich Re solutions are widely used across the globe, with 147 insurers in production and 11 deals signed in the last two years.

The SaaS solutions come with a starter rule book that is made available to clients in the Rule Designer. The tool is very user friendly and looks quite similar to what we saw in 2022. A nice feature is the ability to see a comparison of the rules changes made before locking in the new rules or during an audit. NOVA and SPARK are integrated with the standard third party evidence providers. The rules-based process of data collection and evaluation of medical records and pharmacy data is used to identify non-disclosures and risks and ask follow-up questions as needed.

In addition to the normal evidence collected, the solutions have a module called Predictor which enables machine learning models to be used in real time as part of the underwriting process. It can be used to override rules-based underwriting decisions.

The Underwriter Workbench is configurable by the insurer as to what is presented to the underwriters. Rules that fail on the case are highlighted to draw attention for the underwriter's review. Along with strong notes capabilities, NOVA and SPARK offer functionality like the ability to order new prescription records, manage third party data, and write rules based on various data points from the workbench. Munich Re is working on bulk case assignment and automated notifications and reminders, expanding the current pull-only case assignment capability. Data integration to notify the producers of case status or missing requirements is done via an integration to the insurer's portal.

Reporting is available through Insight, a link that allows underwriters to review data analysis tools and historical underwriting decisions. The Insight tool comes standard with the offerings, and a more customizable version, Full Insight, is available for an additional fee. Insight reporting includes 70 dashboards. The data can also be sent to a data lake instead of using Munich Re reporting.

ALLFINANZ NOVA provides the ability to increase the number of point-of-sale decisions with customized rules and predictive analytics. ALLFINANZ SPARK provides a way to enter the direct-to-consumer market quickly. A large client base shows the solutions are effective at meeting the needs of a point-of-sale market and exception processing.

Functionality

Table 135: Functionality

Legend

- = Available out of the box
- = Configurable using simple tools for business user
- = Configurable using simple tools for IT user
- = Configurable through a scripting language/coding
- = Available with integration to a third party solution
- = Available with integration to a separate module provided by this vendor
- = Under development / on road map
- = Could develop, would be considered customization
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | | | ● |
| eApplication—mobile | | | ● |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | | | ● |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | | | ● |
| Reinsurer underwriting manual integration | | | ● |
| Product dictionary/repository support | | | ● |
| Premium calculations based on underwriting class | | | ● |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|-------------------|---------------------------------|---------------|
| Rule validation during add/update based on local regulations and regional restrictions | | | ● |
| Testing, modeling, and product analysis tools | | | ● |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |
| Complex rule processing via third-party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● ● NOVA/SPARK | | |
| Rules change “what-if” scenario analysis | ● | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | | ● |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | | | ● |
| New business status for agents (APIs to portal) | | | ● |
| Demand and capacity management capabilities | | | ● |
| Case management correspondence capabilities including expiry, follow-up actions, dates | | | ● |
| Automated communication to agents on outstanding requirements via email | | | ● |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Case management workflow-specific rules design and management | | | ● |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | | | ● |
| Forms and evidence access from within the NBUW system | ● | | |
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | | ● | |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |
| Source: Vendor RFI | | | |

Lines of Business Supported

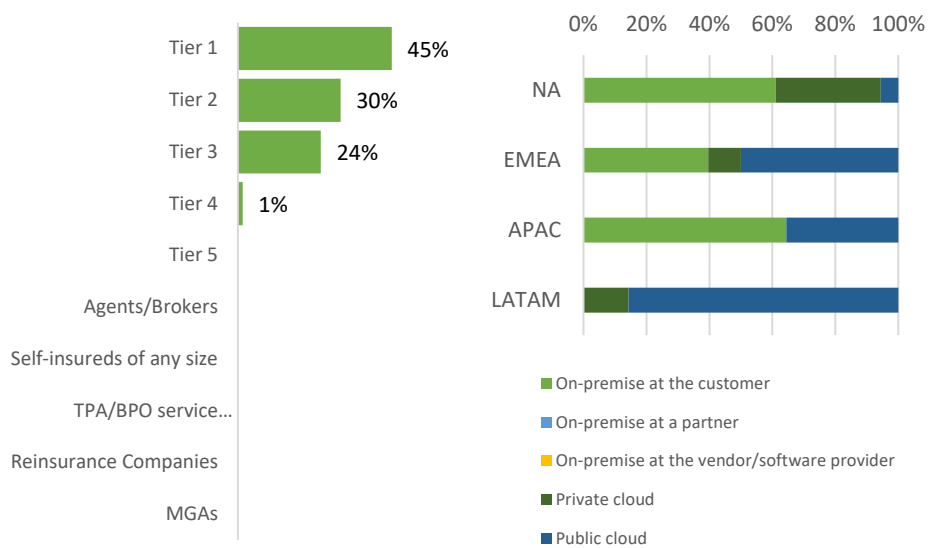
Table 136: Lines of Business Supported

| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✓ | ✓ | ✓ |
| Annuity | ✗ | ✗ | ✗ | ✗ |

| Line of Business | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Health | ✓ | ✓ | ✓ | ✓ |
| Other | □ | □ | □ | □ |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; ✕ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Customer Base

Table 137: Client Base by Size and Deployment Option (Global) – Not separated by solution



Source: Vendor RFI

Table 138: Implementations by Country

| Region | Countries |
|-----------------|--|
| North America | Canada, United States |
| Europe | Austria, Belgium, Cyprus, France, Germany, Iceland, Ireland, Italy, Malta, Netherlands, Norway, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom |
| Middle East | Bahrain, Kuwait, Lebanon, Oman, Qatar, Saudi Arabia, United Arab Emirates, Yemen, Other Middle Eastern country |
| Africa | Egypt, South Africa |
| Asia-Pacific | Australia, Cambodia, China, Hong Kong, India, Indonesia, Japan, Malaysia, Myanmar (Burma), New Zealand, Philippines, Singapore, Taiwan, Thailand, Vietnam |
| Central America | El Salvador |
| South America | Argentina, Brazil, Peru |

| Region | Countries |
|--------------------|-----------|
| Caribbean | |
| Source: Vendor RFI | |

Technology

Table 139: Technology Options

| Technology Options | Responses |
|---------------------|--|
| Code Base | Java: 80%; JavaScript: 20% |
| Integration Methods | Web services: RESTful and SOAP; HTML; HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; Custom APIs; Flat files; and Native messaging Federated and non-federated logins options are available. |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✓ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✓ API testing portal and the ability to use scripts on website is available.</div> <div>✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✓ Training in extending the system is offered.</div> |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 140: SaaS Capabilities

| Elements | Availability |
|--------------------------------------|--|
| Supports a multi-tenant architecture | Part of the application delivery supports multi-tenant; however, for security and compliance reasons MRAS delivers its main application to customers in a single tenant model. |

| Elements | Availability |
|---|--|
| Type of effort required to update the solution | Automated scripts – mostly automated |
| Cadence of upgrades for multi-tenant deployments | Every six months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | In-house expertise and experience to build with confidence |
| Ability of the deployment model to leverage a serverless approach | ✗ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Under 25% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✗ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |

Legend: ✓ = Yes ✗ = No

Source: Vendor RFI

Table 141: Change Tooling and Upgrades

| Types of Changes | Availability |
|---|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | □ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | □ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |

Legend: ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available

Source: Vendor RFI

Table 142: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|-----------------|----|------|------|-------|
| Microsoft Azure | □ | ✓ | ✓ | □ |
| Amazon AWS | ✓ | ✓ | ✓ | ✓ |

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Partnership

Table 143: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|--|
| System Integrators | iPipeline, Unqork, Sureify, PolicyGenius, alitheia |
| Fintech Partners | N/A |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 144: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 11 to 15 |
| Resource Breakdown | Vendor: 65%; Client: 35% |
| Location of Employees | Munich Re Automation Solutions has 7 employees in North America, 23 employees in EMEA, and 10 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation:</u> 7 to 12 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 4 to 6 months |
| Pricing Models | Term license, Enterprise license, and Subscription-based license |

Source: Vendor RFI

NEUTRINOS: NEUTRINOS LIFE & ANNUITY NEW BUSINESS & UNDERWRITING

Company and Product Snapshot

Table 145: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 2016 |
| Headquarters | Singapore |
| Number of Employees | 250 |
| Revenues (USD) | Confidential |
| Financial Structure | Privately owned |
| VendorMatch Link | Neutrinos VendorMatch Link |

Source: Vendor RFI

Table 146: Product Snapshot

| | |
|---|--|
| Name | Neutrinos Life & Annuity New Business & Underwriting |
| Year Originally Released | 2019 |
| Current Release and Date of Release | v24.2 |
| Revenue Derived from Product | Confidential |
| R&D Expense (last two years) | Confidential |
| FTEs Providing Professional Services for Product | 90 |
| Notable Clients | Not provided |

Source: Vendor RFI

Celent Opinion

Neutrinos Life and Annuity New Business and Underwriting is a cloud-native, low-code platform. It includes intelligent document processing, rules-driven straight-through processing, case management and workflow, an underwriting workbench, and reporting. Neutrinos currently has four clients (two in EMEA and two in APAC) in production with the NBUW solution for term, whole life, and fixed annuity products as well as disability and other ancillary health products. They are working with two companies in the Philippines to implement the underwriting solution for annuities.

The underwriting engine holds the rules for decision management. It includes prepackaged workflow rules and a business and underwriting rules repository for

scoring risk, assessing documents, and evaluating applicants with eligibility and KYC checks. Bespoke product rules are built during implementations. The UI is very intuitive, allowing insurers to make changes to rules easily within the platform or via an Excel import/export function.

Acting as a master data management tool, the rules engine includes master tables that can be consumed as an API in other parts of the platform or external systems. The master tables are consumed by rules that are defined using a visual data mapping tool. The non-medical rules predefined in the platform are defined as decision tables, formulas, APIs, scripting for complex rules, decision trees for case allocations and reflexive questions, nearest match mapping, phonetics, and sentiment analysis within emails and communications. On the road map is the ability to trace the relationship of the master tables and individual rules in terms of which workflows are consuming them.

In terms of medical underwriting risk assessments, Neutrinos will integrate a reinsurance company's or other third party rules engine as needed. They do not have medical rules preconfigured into their platform; however, it is on their long term roadmap. They have worked with Munich Re.

The external portal for agents includes both graphics and data about cases and is configurable at the role level. The agent portal capabilities shown during the demo were disjointed, but using APIs and generative AI, electronic and paper applications can be sent to the rules engine and case status can be communicated back to the agents. Paper application and uploaded document processing utilizes AI tools to digitize the data so it can be ingested into the rules engine.

For the North American market, they have not yet integrated with any of the North American data or evidence providers, which also means they have not yet built rules around this data in their rules engine.

A roles-based underwriting workbench provides a tool kit for the underwriters. The workbench shows an overview of the case, documents, declarations, case comments, and other parameters used by the underwriter to evaluate risks. The workbench is configurable based on role. Unique to this workbench is a Q Learning AI-based propensity analysis that uses the insurer's own past data to evaluate the applicant's propensity to buy a policy, lapse, or have a claim in the near future. In the workbench road map, Neutrinos is building in rules to summarize and highlight what an underwriter must know about the case to evaluate it. Notes are available, but they are not searchable.

The platform provides a default set of reports and dashboards for performance monitoring at the user and process level. The reports and dashboard can be customized to the insurer's needs.

Neutrinos has built an underwriting platform for the EMEA and APAC markets. The current rules and underwriting flows are targeted toward simple suitability and underwriting rules. Insurers in this market would do well to consider Neutrinos to digitize their new business and underwriting processes. They would like to enter the US market, but are still localizing the platform to meet the needs of US life insurers.























Functionality

Table 147: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines |  | | |
| Underwriter desktop |  | | |
| Underwriting rules changes monitored and audited by date |  | | |
| Global, regional, and local underwriting rules support |  | | |
| Manual underwriting decision audit and update support |  | | |
| Multiple product and multiple lives simultaneous underwriting support |  | | |
| System underwriting decision overwrite support |  | | |
| Automatic creation of algorithmic scores from selected data |  | | |
| Underwriter authorization limit management |  | | |
| Rules change “what-if” scenario analysis |  | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data |  | | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers |  | | |
| New business status for agents (APIs to portal) |  | | |
| Demand and capacity management capabilities |  | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates |  | | |
| Automated communication to agents on outstanding requirements via email |  | | |
| Case management workflow-specific rules design and management |  | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements |  | | |
| Medical underwriting requirements ordering |  | | |
| Non-medical underwriting requirements ordering |  | | |
| Requirement rules changes monitoring/audit |  | | |
| Internal underwriting requirements management |  | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Forms and evidence access from within the NBUW system | ● | | |
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | ● | | |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 148: Lines of Business Supported

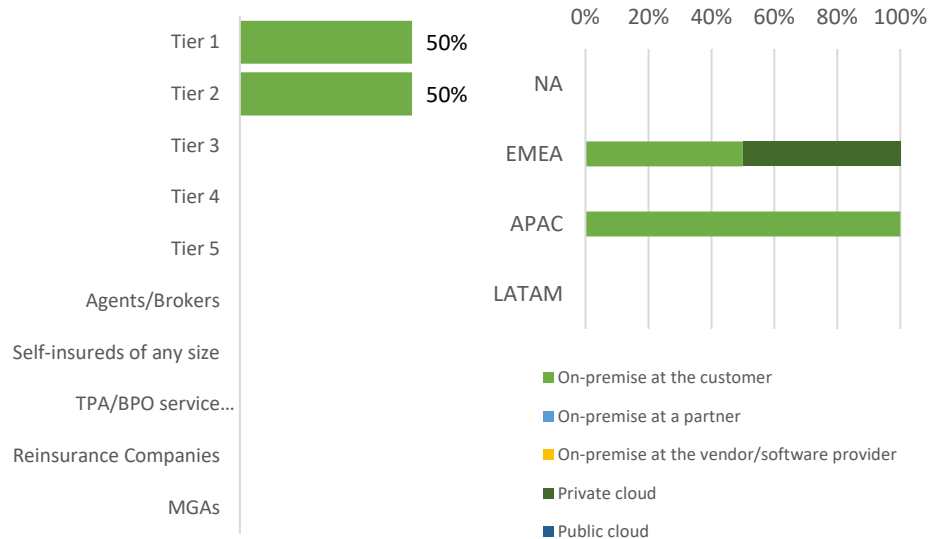
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✓ | ✓ | □ |
| Annuity | □ | □ | ✓ | □ |
| Health | □ | ✓ | ✓ | □ |
| Other | □ | □ | □ | □ |

Legend: ✓ = In production; □ = Supported but not in production; ✕ = Not supported

Source: Vendor RFI

Customer Base

Table 149: Client Base by Size and Deployment Option (Global)



Source: Vendor RFI

According to Neutrinos, they have one small US client for whom they are enabling the "front office buy" STP journey. Neutrinos is "tailoring the platform to address the specific needs of the U.S. life insurance market. This includes integrating with North American data and evidence providers to support efficient underwriting and decision-making processes suited to the region. Additionally, Neutrinos is developing rules around these data sources to ensure compliance with local regulations and underwriting practices."

Table 150: Implementations by Country

| Region | Countries |
|-----------------|--|
| North America | United States |
| Europe | |
| Middle East | Saudi Arabia, United Arab Emirates |
| Africa | South Africa |
| Asia-Pacific | Philippines, Vietnam, Hong Kong, India, Indonesia, Singapore |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 151: Technology Options

| Technology Options | Responses |
|----------------------------|---|
| Code Base | JavaScript: 100% |
| Integration Methods | Web services; XML (not through web services); HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; Custom APIs; Flat files; Native messaging; and GraphQL |
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✓ API developer portal is available for support and descriptions. |
| | ✓ API testing portal and the ability to use scripts on website is available. |
| | ✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✓ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✓ Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 152: SaaS Capabilities

| Elements | Availability |
|--|--|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Evergreen – client chooses when to upgrade |
| Cadence of upgrades for multi-tenant deployments | Every 6 months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |

| Elements | Availability |
|---|--------------|
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✓ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes x = No | |
| Source: Vendor RFI | |

Table 153: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; x = Not available | |
| Source: Vendor RFI | |

Table 154: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✓ | ✓ | ✓ | □ |
| Amazon AWS | □ | □ | ✓ | □ |
| Google Cloud Platform (GCP) | □ | □ | □ | □ |
| Alibaba Cloud | x | x | x | x |
| IBM Cloud / Bluemix | x | x | x | x |
| Oracle Cloud | □ | □ | □ | □ |
| Salesforce Cloud, Force.com, AppExchange | x | x | x | x |
| Other | x | x | x | x |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; x = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 155: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|---|
| System Integrators | Capgemini, Infosys, Cognizant, EY, EPAM, Quess GTS, TCS, Zensar, LTIM |
| Fintech Partners | Salesforce, Azure, Google, Oracle, SSP, AWS, InsureMo, Vonage, H2O, Datarobot, Datadog, C3.ai |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 156: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor:25 %; Client:25 %; Third party (Partner): 50% |
| Location of Employees | Neutrinos has 10 employees in North America, 50 employees in EMEA, and 150 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation:</u> 1 to 3 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Perpetual license, Enterprise license, and Subscription-based license; Consumption-based and usage-based pricing |

Source: Vendor RFI

RGA: AURA NEXT UNDERWRITING DECISION MANAGEMENT

Company and Product Snapshot

Table 157: Company Snapshot

| | |
|----------------------------|--------------------------------------|
| Year Founded | 1973 |
| Headquarters | St. Louis, MO |
| Number of Employees | 3,300 |
| Revenues (USD) | Not reported |
| Financial Structure | Public Company - NYSE: RGA |
| VendorMatch Link | RGA VendorMatch Link |

Source: Vendor RFI

Table 158: Product Snapshot

| | |
|---|--|
| Name | Aura Next Underwriting Decision Management |
| Year Originally Released | 2002 |
| Current Release and Date of Release | Re-architected in 2015, since Jan 2016 AURA is offered exclusively as Software as a Service. All customers are on the latest version and code base with 4 releases scheduled per year. |
| Revenue Derived from Product | See above |
| R&D Expense (last two years) | 20% of total revenue attributed to this solution |
| FTEs Providing Professional Services for Product | 120 |
| Notable Clients | RGA prefers to keep clients confidential. |

Source: Vendor RFI

Celent Opinion

Aura Next is a SaaS-based automated digital underwriting platform that offers insurers an underwriting rules engine (Rules Service), an interview framework (Disclosure Engine), and an Evidence Framework that evaluates requirements data at point of sale for life and health insurance. Forty-two insurers across the globe use Aura Next; three-quarters are in North America and EMEA. Eleven new insurers became clients in the last two years. The solution supports 13 languages. A reinsurance relationship is expected to use Aura Next.

The Aura Next Rules Service, built in Blaze Advisor, comes pre-embedded with RGA's underwriting rules manual. Insurers can choose to use these standard RGA underwriting rule sets or they can customize them to fit their needs. Most changes to rules are made in tables. RGA continues to expand their multivariate rules calculations and "super comorbidity rules."

The interview questionnaire configuration UI remains very easy to use due to its similarity to online survey tools. It includes a prebuilt, reusable master disclosure list with associated question options, all in common and medical terminology as needed. The Part 2 interviews can be reflexive and are based on behavioral science, which RGA has worked on heavily over the last two years. If an insurer chooses to use its own eApplication and questionnaires, RGA's Rules Service is triggered once the application data hits Aura Next. The Rules Service runs three layers of rules: 1) disclosures and evidences; 2) multivariate checks for non-disclosures; and 3) a review of follow-up responses if reflexive and new questions are asked. Regardless of eApplication used, Aura Next can provide immediate decisions on cases.

Aura Next's Evidence Framework evaluates data from industry-accepted evidence sources. It can integrate predictive models and electronic health records. RGA has worked with Digital Owl, but they have not integrated it yet. They also do not have integrations or rules around wellness tools.

The system comes with a data visualization insight tool for metrics and key performance indicators that can help an insurer analyze demographic trends, refine underwriting rules, monitor decision frequency, and maintain decision quality, to name a few. At this point, RGA does not have any plans to incorporate generative AI tools into Aura Next.

Aura Next is a point-of-sale underwriting decision platform. It does not include a case management and underwriter workbench but it integrates with several in this report. The ease of use and the experience that RGA brings to the rules engine satisfies current customers. It's a platform to consider when looking at reinsurance rules engines if you are an RGA reinsurance client.

Functionality

Table 159: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---------------------------------|---------------------------------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | | | ● |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | | | ● |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | | ● | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | | | ● |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | | ● | |
| Underwriter authorization limit management | | | ● |
| Rules change “what-if” scenario analysis | | | ● |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | | ● |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | | | ● |
| New business status for agents (APIs to portal) | | | ● |
| Demand and capacity management capabilities | | | ● |
| Case management correspondence capabilities including expiry, follow-up actions, dates | | | ● |
| Automated communication to agents on outstanding requirements via email | | | ● |
| Case management workflow-specific rules design and management | | | ● |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | | | ● |
| Non-medical underwriting requirements ordering | | | ● |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | | | ● |
| Forms and evidence access from within the NBUW system | | | ● |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Requirements-specific rule design and management | | | ● |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | | | ● |
| Reporting and Analytics | | | |
| Predictive analytics | | | ● |
| Ability to create customized reports and run analytics on captured data | | ● | |
| Gen AI tools under review and consideration | | | |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 160: Lines of Business Supported

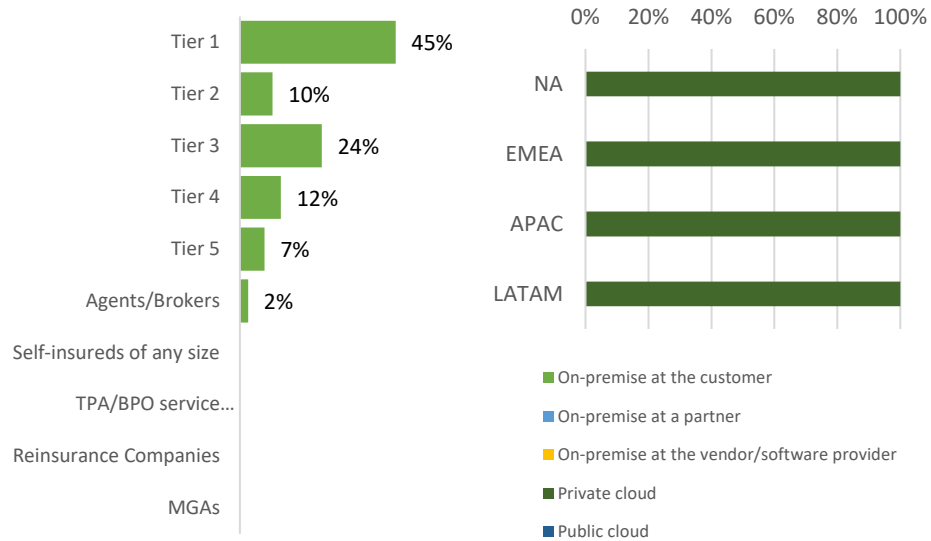
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✓ | ✓ | ✓ |
| Annuity | ✗ | ✓ | ✗ | ✗ |
| Health | ✓ | ✓ | ✓ | ✓ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 161: Client Base by Size and Deployment Option (Global)



Source: Vendor RFI

Table 162: Implementations by Country

| Region | Countries |
|-----------------|---|
| North America | Canada, United States |
| Europe | Belgium, Czech Republic, France, Germany, Italy, Portugal, Slovakia, Spain, Switzerland |
| Middle East | United Arab Emirates |
| Africa | South Africa |
| Asia-Pacific | Australia, Hong Kong, Japan, New Zealand, Singapore, Thailand |
| Central America | Mexico |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 163: Technology Options

| Technology Options | Responses |
|--------------------|---|
| Code Base | JavaScript: 50%; Angular: 50% (moving to React) |

| Technology Options | Responses |
|---|--|
| Integration Methods | Web services; RESTful HTTP style services |
| API Details | <div>✓ The API is documented.</div> <div>✗ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✗ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✗ API sample codes are available to clients.</div> <div>✗ API developer portal is available for support and descriptions.</div> <div>✗ API testing portal and the ability to use scripts on website is available.</div> <div>✗ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✗ API version management is available.</div> <div>✗ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✗ Training in extending the system is offered.</div> |
| Legend: ✓ = Available; ✗ = Not available Source: Vendor RFI | |

Table 164: SaaS Capabilities

| Elements | Availability |
|--|--|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Evergreen – all clients are on the same latest version |
| Cadence of upgrades for multi-tenant deployments | Every 3 months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Over 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✓ |

| Elements | Availability |
|---|--------------|
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✗ |

Legend: ✓ = Yes ✗ = No

Source: Vendor RFI

Table 165: Change Tooling and Upgrades

| Types of Changes | Availability |
|---|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ⊖ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | □ |
| Screen Definition | □ |
| Workflow Definition | ✗ |

Legend: ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available

Source: Vendor RFI

Table 166: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✗ | ✗ | ✗ | ✗ |
| Amazon AWS | ✓ | ✓ | ✓ | ✓ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Partnership

Table 167: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|---|
| System Integrators | RGA does not have any formal partnerships; however, we are agnostic to all third party systems. |
| Fintech Partners | RGA works with several fintech partners including Infosys, Hexure, DXC, Accenture, and Sapiens. |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 168: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 11 to 15 |
| Resource Breakdown | Vendor: 50%; Client: 50% |
| Location of Employees | RGA Reinsurance Company has 75 employees in North America, 10 employees in EMEA, 15 employees in Asia Pacific, 4 employees in Latin America |
| Average Time to Implementation | <u>Initial implementation</u> : 7 to 12 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 3 months |
| Pricing Models | Enterprise license, Subscription-based license |

Source: Vendor RFI

S.360 LIFE UNDERWRITING: S.360 LIFE UNDERWRITING SAAS

Company and Product Snapshot

Table 169: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 2022 |
| Headquarters | São Paulo, Brazil |
| Number of Employees | 29 |
| Revenues (USD) | \$1.5 million (2023) |
| Financial Structure | Private, a subsidiary of Samplemed |
| VendorMatch Link | s.360 VendorMatch Link |

Source: Vendor RFI

Table 170: Product Snapshot

| | |
|---|--|
| Name | s.360 Life Underwriting SaaS |
| Year Originally Released | 2022 |
| | Spin off from Samplemed |
| Current Release and Date of Release | 1.59.0/2024 |
| Revenue Derived from Product | 1,5M |
| R&D Expense (last two years) | 50% of total revenue attributed to this solution |
| FTEs Providing Professional Services for Product | 33 |
| Notable Clients | <p>s.360 clients in South America: Austral RE, Caixa Vida, Icatu, and BNP Paribas Cardif Brasil</p> <p>In North America, the following clients are using the SampleMed's API-integrated lab exams and medical report collection services: American Fidelity, Manhattan Life, State Trust, and Virgin Group</p> |

Source: Vendor RFI

Celent Opinion

Samplemed, s.360's parent, offers medical services for life insurance underwriting as well as technology, predictive models, and s.360 Life Underwriting SaaS ("s.360"). The s.360 SaaS has an API-first and model-based design and includes RisksBank, a rules bank based on Samplemed's proprietary underwriting manual. Of Brazilian descent, s.360 has targeted the Latin American market and is expanding their SaaS platform into other geographies.

Today, s.360 has a total of 17 clients, with 12 in Latin America and 5 in North America. In North America, clients are using a previous version of the system focused on paramedical exams and medical reports. The company hopes to migrate them to s.360 SaaS at contract renewal.

The rules bank contains over 14,000 health, profession, and financial risk rules that are used to automate the decision. While the rules are maintained by a specialist team at s.360, they also allow the insurer to make changes to rule parameters using a configuration tool. This means the rules themselves are not changed, but the level of risk accepted by the insurer can be changed in a very easy-to-use configuration UI. The rules, also known as axioms, are utilized within the questionnaire, which includes the ability to ask reflexive questions based on responses. In general, the configuration of the product, the type of questionnaire to be used, the requirements required, and the rules to be applied is one of the easiest we have seen during this review of NBUW solutions.

The UI is very nice and easy to follow. There is consistency across the modules. The way the data is presented is clear and concise. Case assignments and time-off scheduling is under development.

API integrations with insurer technologies, like Salesforce exist today. The company provides clients with an API reference documentation to create cases, applicants, and other areas that require integration with other systems. Data can be synchronously or asynchronously integrated. Today they can accept third party documentation, but it is not analyzed digitally; the ability to apply rules to the third party data is on the road map. Similarly, integration with the third party requirements expected for the US market is also on the road map. Integrations with reinsurers for questionnaires and rules are possible, but s.360 has not had any requests from clients to do so.

The underwriter workbench has a similar UI to the rest of the solution. All the expected data is available including access to the application responses, supporting documentation, and case notes. The workbench provides access to the underwriting manual directly so the underwriter can review the data and ask more questions or request new evidence from the applicant in a very simple manner. For some clients, s.360 has built a chatbot to search the rules engine as needed to make decisions. Like other Latin American vendors, doctors have access to the underwriting workbench and can make decisions on cases. A nice feature is the predictive model for lower ticket cases that don't require underwriter analysis










s.360 provides a dashboard for data analysis and can extract data to its centralized data lakes through pre-integrated AWS QuickSight or other BI tools. The system is often customized to meet clients' specific needs. Most analytics are on conditions being seen and KPIs. A new underwriting assistant large language model (LLM) called Vida was launched in October 2024.













The s.360 solution is a maturing system. The company has made headway in Latin America and has plans to move to the US and other regions. With some more experience with clients in other regions, this can become a system worth watching.

Functionality

Table 171: Functionality

Legend

| | | |
|---|---|--|
|  = Available out of the box |  = Configurable through a scripting language/coding |  = Under development / on road map |
|  = Configurable using simple tools for business user |  = Available with integration to a third party solution |  = Could develop, would be considered customization |
|  = Configurable using simple tools for IT user |  = Available with integration to a separate module provided by this vendor |  = Not available / not applicable |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---------------------------------|---|
| Desktop | | | |
| eApplication—web-based |  | | |
| eApplication—mobile | | |  |
| Dynamic interviewing |  | | |
| Industry standard application form (such as ACORD) import or upload |  | | |
| Data validation during application data capture |  | | |
| Electronic signature capability |  | | |
| External data systems or services integration for data prefill |  | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management |  | | |
| Reinsurer underwriting manual integration |  | | |
| Product dictionary/repository support |  | | |
| Premium calculations based on underwriting class |  | | |
| Rule validation during add/update based on local regulations and regional restrictions. | | |  |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● | | |
| Rules change “what-if” scenario analysis | | | ● |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | | ● |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | | | ● |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | | | ● |
| Case management workflow-specific rules design and management | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|--|---------------|
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | ● | | |
| Forms and evidence access from within the NBUW system | ● | | |
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | ● | | |
| Legend | | | |
| ● = Available out of the box | ● = Configurable through a scripting language/coding | ● = Under development / on road map | |
| ● = Configurable using simple tools for business user | ● = Available with integration to a third party solution | ● = Could develop, would be considered customization | |
| ● = Configurable using simple tools for IT user | ● = Available with integration to a separate module provided by this vendor | ● = Not available / not applicable | |

Source: Vendor RFI

Lines of Business Supported

Table 172: Lines of Business Supported

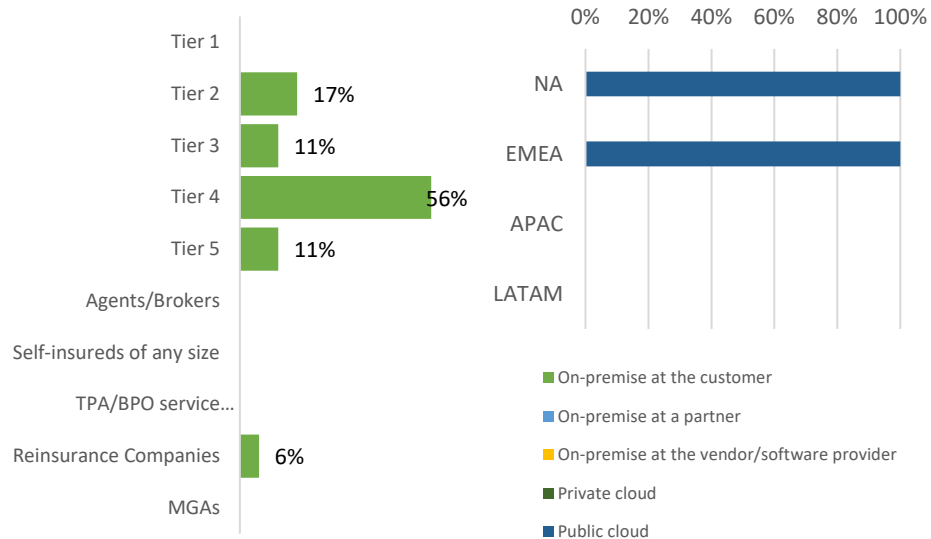
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✗ | ✗ | ✓ |
| Annuity | ✗ | ✗ | ✗ | ✗ |
| Health | ✓ | ✗ | ✗ | ✓ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 173: Client Base by Size and Deployment Option (Global or NA only)



Source: Vendor RFI

Table 174: Implementations by Country

| Region | Countries |
|-----------------|---------------|
| North America | United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | Mexico |
| South America | Brazil |
| Caribbean | |

Source: Vendor RFI

Technology

Table 175: Technology Options

| Technology Options | Responses |
|---------------------|--|
| Code Base | JavaScript: 20%; Python: 80% |
| Integration Methods | HTTP; RESTful HTTP style services; and JSON format |

| Technology Options | Responses |
|--------------------|--|
| API Details | ✓ The API is documented. |
| | ✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✓ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ API sample codes are available to clients. |
| | ✓ API developer portal is available for support and descriptions. |
| | ✓ API testing portal and the ability to use scripts on website is available. |
| | ✗ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✓ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✓ Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 176: SaaS Capabilities

| Elements | Availability |
|--|--|
| Supports a multi-tenant architecture | ✗ |
| Type of effort required to update the solution | Project-based with expert professional services |
| Cadence of upgrades for multi-tenant deployments | More frequent than every 3 months |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | In-house expertise and experience to build with confidence |
| Ability of the deployment model to leverage a serverless approach | ✗ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Under 25% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✗ |

| Elements | Availability |
|---|--------------|
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 177: Change Tooling and Upgrades

| Types of Changes | Availability |
|---|--------------------------|
| Business Rule Definition | ✓ |
| Data Definition | <input type="checkbox"/> |
| Table Maintenance, List of Values, etc. | <input type="checkbox"/> |
| Interface Definition | <input type="checkbox"/> |
| Product Definition | <input type="checkbox"/> |
| Role-Based Security, Access Control, and Authorizations | <input type="checkbox"/> |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; <input type="checkbox"/> = Configurable via tools for IT users; ■ = Configurable via the vendor; ☹ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 178: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|---|--------------------------|--------------------------|------|--------------------------|
| Microsoft Azure | <input type="checkbox"/> | <input type="checkbox"/> | ✗ | <input type="checkbox"/> |
| Amazon AWS | ✓ | ✓ | ✗ | <input type="checkbox"/> |
| Google Cloud Platform (GCP) | <input type="checkbox"/> | <input type="checkbox"/> | ✗ | <input type="checkbox"/> |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; <input type="checkbox"/> = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 179: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| System Integrators | Not provided |

| Type of Partnership | Partner Vendor |
|---------------------|---|
| Fintech Partners | Dacadoo, Clearspeed, Lexis Nexis, and others, for offering their modules within s.360 Life Underwriting SaaS. |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 180: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 11 to 15 |
| Resource Breakdown | Vendor: 80%; Client: 20% |
| Location of Employees | s.360 life underwriting has 2 employees in North America, 1 employee in EMEA, and 10 employees in Latin America |
| Average Time to Implementation | <u>Initial implementation</u> : 1 to 3 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 3 months |
| Pricing Models | Term license, Enterprise license, and Subscription-based license |
| Source: Vendor RFI | |

SAPIENS: SAPIENS UNDERWRITINGPRO FOR L&A

Company and Product Snapshot

Table 181: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 1982 |
| Headquarters | Holon, Israel |
| Number of Employees | 5,300 |
| Revenues (USD) | \$514.6 million (2023) |
| Financial Structure | Public - NASDAQ: SPNS |
| VendorMatch Link | Sapiens VendorMatch Link |
| Source: Vendor RFI | |

Table 182: Product Snapshot

| | |
|---|--|
| Name | Sapiens UnderwritingPro for L&A |
| Year Originally Released | 1995 |
| Current Release and Date of Release | The current GA release is Sapiens UnderwritingPro version 13 with version 14 expected in Q1 2025 |
| Revenue Derived from Product | As a public company, Sapiens does not disclose revenue breakdown by product. However, all financials are available as public information via SEC Filings and can be found in published financial statements at https://www.sapiens.com/investor-relations/ |
| R&D Expense (last two years) | Approximately 15% of total revenue attributed to this solution |
| FTEs Providing Professional Services for Product | 110 |
| Notable Clients | Due to contractual limitations, Sapiens has elected not to publicly name clients at this time. |
| Source: Vendor RFI | |

Celent Opinion

Sapiens' investment in UnderwritingPro has concentrated on improving system usability for insurers. It continues to rely on its very active user group to guide the

system's enhancements. Since we last saw the system, Sapiens has modernized the UI across all modules, improved the rules engine capabilities, changed the application/interview flow to allow for immediate requirements gathering and point-of-sale straight-through processing, and added AI insights and an agent communication portal. The data and analytics capabilities within the system have been enhanced greatly.

The system is currently in use by 26 insurers in North America as a stand-alone system. Five new deals were made in the last two years. Seven insurers are on the system's most current version.

The rules engine was revised to provide search capability, and the UI across all rules engine components makes configuration much simpler. Most Sapiens clients are self-sufficient and manage their rules with non-technical staff. While reinsurance rules engines are still heavily used, some insurers are working with Sapiens to bring their rules into UnderwritingPro and are asking for more user-friendly ways to manage their rules. A new feature this year is the ability to re-underwrite the pending cases when there are rule changes. Also new are a workflow for immediate requirement ordering and a significant architecture change to improve the process at the point of sale.

Two years ago, Sapiens updated the underwriter desktop and the rules engine UI to HTML 5 and Angular. The latest version brings the rest of the modules including security, reporting, screen configuration, and others on the same technology. All have a search capability that didn't exist before, including within the rules engine. The new UI is a definite improvement.

A new feature is direct messaging with agents within the UnderwritingPro system, where underwriters can add case notes and request specific documents from agents, which are then visible in the agent's portal.

UnderwritingPro is integrated with Formotiv for application behavior analytics. With signals set on certain application questions, Formotiv notifies the underwriter if the question is flagged due to applicant activity on that question.

The system's case management and underwriting features provide end-to-end functionality for the full underwriting process. Because UnderwritingPro provides exception-based underwriting, only cases that fail automated underwriting are displayed on the underwriter workbench. Each case displays the exceptions or risks at the top of the page, making it easy for an underwriter to see what must be done to move the case to the next stage.

Sapiens enhanced its Data Suite self-service capabilities and the ability to provide insights into bottlenecks and predict future performance. Upcoming features in V14 include a rules impact analysis feature and a "what if" scenario analysis. Sapiens UnderwritingPro can be implemented with Sapiens Data Suite to provide out-of-the-box business analytics across the entire data set at no additional cost.

UnderwritingPro's client base has helped this become a strong new business and underwriting solution targeted at making the underwriting process more effective

and efficient for any line of business. Celent believes it should be on an insurer's short list if they are looking for a new business and underwriting system.

Functionality

Table 183: Functionality

Legend

- = Available out of the box
- = Configurable using simple tools for business user
- = Configurable through a scripting language/coding
- = Available with integration to a third party solution
- = Available with integration to a separate module provided by this vendor
- = Under development / on road map
- = Could develop, would be considered customization
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | ● | | |
| Rules change “what-if” scenario analysis | ● | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|--|---------------|
| Internal underwriting requirements management | ● | | |
| Forms and evidence access from within the NBUW system | ● | | |
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | | ● | |
| Legend | | | |
| ● = Available out of the box | ● = Configurable through a scripting language/coding | ● = Under development / on road map | |
| ● = Configurable using simple tools for business user | ● = Available with integration to a third party solution | ● = Could develop, would be considered customization | |
| ● = Configurable using simple tools for IT user | ● = Available with integration to a separate module provided by this vendor | ● = Not available / not applicable | |

Source: Vendor RFI

Lines of Business Supported

Table 184: Lines of Business Supported

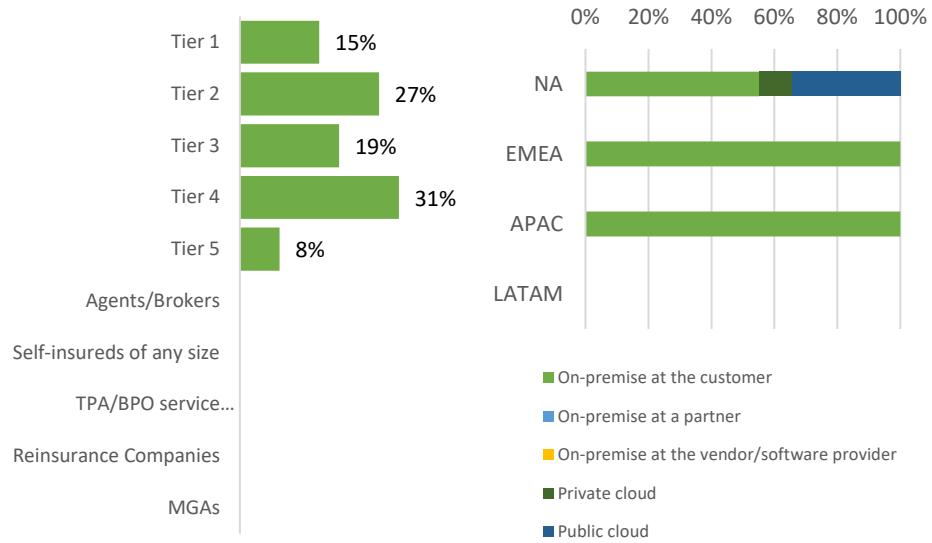
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✗ | ✗ | ✗ |
| Annuity | ✓ | □ | □ | □ |
| Health | ✓ | ✓ | ✗ | ✗ |
| Other | □ | □ | □ | □ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 185: Client Base by Size and Deployment Option (North America)



Source: Vendor RFI

Table 186: Implementations by Country

| Region | Countries |
|-----------------|-----------------------|
| North America | Canada, United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | |
| South America | |
| Caribbean | Trinidad and Tobago |

Source: Vendor RFI

Technology

Table 187: Technology Options

| Technology Options | Responses |
|--------------------|-----------------------|
| Code Base | C#: 60%; Angular: 40% |

| Technology Options | Responses |
|---|---|
| Integration Methods | Web services; XML (not through web services); HTML; HTTP; RESTful HTTP style services; JSON format; Custom APIs; and Flat files |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✓ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✓ API testing portal and the ability to use scripts on website is available.</div> <div>✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div> <input type="checkbox"/> Training in extending the system is offered. </div> |
| Legend: ✓ = Available; ✕ = Not available | |
| Source: Vendor RFI | |

Table 188: SaaS Capabilities

| Elements | Availability |
|---|----------------------------|
| Supports a multi-tenant architecture | ✕ |
| Type of effort required to update the solution | Other |
| Cadence of upgrades for multi-tenant deployments | n/a |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | ✕ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | 25% to 50% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✕ |

| Elements | Availability |
|---|--------------|
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 189: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ● |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | □ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 190: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✓ | □ | □ | □ |
| Amazon AWS | □ | □ | □ | □ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 191: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| System Integrators | Deloitte, PWC |

| Type of Partnership | Partner Vendor |
|---------------------|---|
| Fintech Partners | Sapiens Digital Ecosystem helps carriers integrate quickly with innovative partners that improve customer experience and create operational efficiencies. Sapiens has partnerships with LifeScore Labs, DigitalOwl, HealthGorilla, Binah.ai, Atidot, and ForMotiv |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 192: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 11 to 15 |
| Resource Breakdown | Vendor: 50%; Client: 50% |
| Location of Employees | Sapiens has 72 employees in North America, 5 employees in EMEA, and 33 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation:</u> 4 to 6 months <u>2nd and subsequent lines of business:</u> 1 to 3 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Term license, Perpetual license, Enterprise license, Subscription-based license, and Other |
| Source: Vendor RFI | |

SWISS RE: MAGNUM PURE

Company and Product Snapshot

Table 193: Company Snapshot

| | |
|----------------------------|--|
| Year Founded | 1863 |
| Headquarters | <u>Global</u> : Zurich, Switzerland <u>North America</u> : Armonk, NY |
| Number of Employees | 14,700 |
| Revenues (USD) | \$50 billion (2023) |
| Financial Structure | Public – SSREY: SREN |
| VendorMatch Link | Swiss Re VendorMatch Link |

Source: Vendor RFI

Table 194: Product Snapshot

| | |
|---|---|
| Name | Magnum Pure |
| Year Originally Released | 1995 |
| Current Release and Date of Release | 1.22/2024 |
| Revenue Derived from Product | Swiss Re does not disclose revenue by product. All solutions are part of the reinsurance business unit. |
| R&D Expense (last two years) | Swiss Re does not disclose R&D expense. All solutions are part of the reinsurance business unit. |
| FTEs Providing Professional Services for Product | 100 |
| Notable Clients | Upon request |

Source: Vendor RFI

Celent Opinion

Magnum Pure is a rule-driven configurable system that is primarily available to insurers who reinsure with SwissRe. Today 71 insurers across the globe use Magnum Pure for their underwriting rules engine. Almost half are in EMEA (33), followed by North America and APAC (18 each) and LATAM (2).

Swiss Re's Life Guide, the basis for the rules engine, includes regional underwriting variations. A starter kit of rules and impairment risk factors allows insurers to forego the development of their own underwriting rules in the system. Rules typically only

require slight adjustments from carriers. Rule modifications are possible and often done by Swiss Re (time and materials charge), but Magnum's Control Center Component offers client self-service for rule changes. While Swiss Re does the initial rules configuration during implementation, insurers are increasingly doing more rule changes and maintenance once they are trained by Swiss Re. Magnum's Control Center Component is unchanged from our last review; it is still primarily a low-code configuration.

Magnum Pure's only UI is the the Life Guide configuration website. The platform does not include an eApplication, workflow, or a case management or underwriter workbench. Swiss Re has partners who offer these tools or additional proprietary solutions in the case of Automated EHR and 2nd level evidence summarisation. In the case of the eApp, Magnum Pure Part 2 questionnaire can be integrated via their interview display component into the flow of a third party or insurer application to gather the necessary data to evaluate the case. Magnum Pure includes an extensive set of Part 2 user-friendly reflexive questions that use behavioral analysis to enhance disclosures. Identified non-disclosures from third party data can trigger new questions at the end of the questionnaire to ensure Magnum Pure can make a risk decision at point of sale.

Magnum Pure has the expected industry standard integrations with internal systems and external data providers. ExamOne LabPiqture is a new integration since our last review. A partnership with Appian has continued the development of a workbench that works with Magnum Pure and includes a Magnum Decision tab in the workbench. The first joint customer went live this quarter.

Magnum Analytics, a Tableau-developed site, is provided to Magnum Pure clients. It provides prepopulated dashboards with a wide range of interactive reports and the ability for a client to build their own reports and analyses. A new set of reports on comorbidities and co-occurrences of risk factors was recently added. Insurers can also download the data for use in their own data lakes.

Swiss Re is investing in AI to improve end-user functionality. Some POCs include helping to write code and rules development, imbedding a smart dictionary for medical terminology in eApps to reduce unstructured data, and adding more dynamic interviewing based on third party data.

Magnum Pure is an instant-decision underwriting rules engine. Swiss Re looks to partners for areas that are not their subject matter expertise, like the Appian workbench which keeps Swiss Re from veering too far from their strengths. They continue to receive strong customer feedback. Their investments in AI tools will make the system easier to use and more efficient for all who interact with it.

Functionality
















Table 195: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|--|---------------------------------|------------------------------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | | | ● |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | ● | | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | | | ● |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | ● | | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | ● | | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | | | ● |
| Rules change “what-if” scenario analysis | ● | | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | ● | |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | ● | | |
| New business status for agents (APIs to portal) | ● | | |
| Demand and capacity management capabilities | ● | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates | ● | | |
| Automated communication to agents on outstanding requirements via email | ● | | |
| Case management workflow-specific rules design and management | ● | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | ● | | |
| Internal underwriting requirements management | ● | | |
| Forms and evidence access from within the NBUW system | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---------------------------------|---|
| Requirements-specific rule design and management |  | | |
| Non-medical underwriting requirements identification |  | | |
| 3rd party data management (receipt, tracking, and follow-up) |  | | |
| Reporting and Analytics | | | |
| Predictive analytics |  | | |
| Ability to create customized reports and run analytics on captured data |  | | |
| GenAI tools | | |  |
| Legend | | | |
|  = Available out of the box  = Configurable through a scripting language/coding  = Under development / on road map | | | |
|  = Configurable using simple tools for business user  = Available with integration to a third party solution  = Could develop, would be considered customization | | | |
|  = Configurable using simple tools for IT user  = Available with integration to a separate module provided by this vendor  = Not available / not applicable | | | |

Source: Vendor RFI

Lines of Business Supported

Table 196: Lines of Business Supported

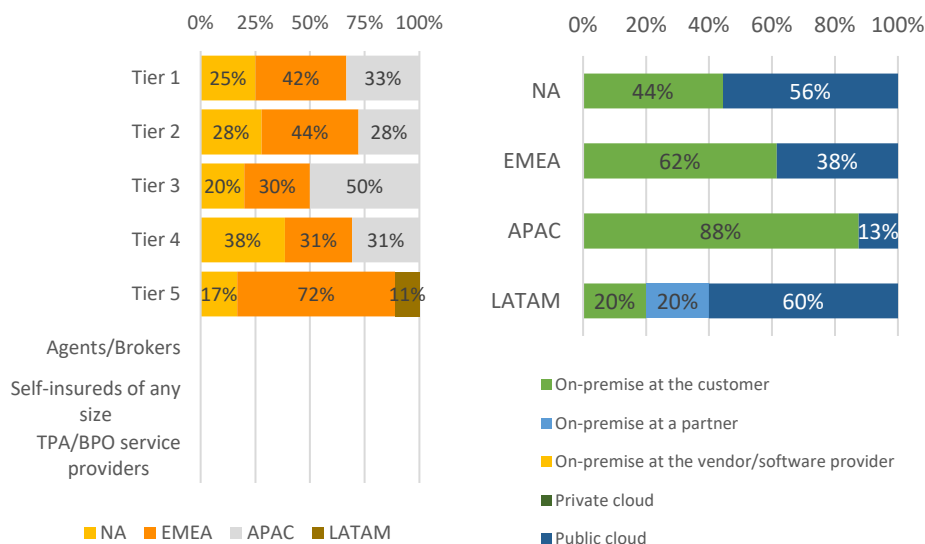
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✓ | ✓ | ✓ |
| Annuity | □ | ✓ | □ | □ |
| Health | ✓ | ✓ | ✓ | □ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 197: Client Base by Size and Deployment Option (Global)



Source: Vendor RFI

Table 198: Implementations by Country

| Region | Countries |
|-----------------|---|
| North America | Canada, United States |
| Europe | Austria, Belgium, Finland, France, Germany, Iceland, Ireland, Portugal, Slovakia, Spain, Sweden, United Kingdom |
| Middle East | United Arab Emirates |
| Africa | South Africa |
| Asia-Pacific | Australia, China, Hong Kong, India, Indonesia, Malaysia, New Zealand, Philippines, Singapore, Taiwan, Thailand, Vietnam |
| Central America | Mexico |
| South America | Brazil, Ecuador |
| Caribbean | Trinidad and Tobago |

Source: Vendor RFI

Technology

Table 199: Technology Options

| Technology Options | Responses |
|--------------------|----------------------------|
| Code Base | Java: 80%; JavaScript: 20% |

| Technology Options | Responses |
|---|---|
| Integration Methods | Web services; XML (not through web services); HTML; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; and Custom APIs |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✓ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✗ API testing portal and the ability to use scripts on website is available.</div> <div>✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓✗ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✓ Training in extending the system is offered.</div> |
| Legend: ✓ = Available; ✗ = Not available | |
| Source: Vendor RFI | |

Table 200: SaaS Capabilities

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | ✗ |
| Type of effort required to update the solution | Project-based with expert professional services |
| Cadence of upgrades for multi-tenant deployments | n/a |
| Deployment approach supports elasticity | Yes, within less than a day |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Under 25% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |

| Elements | Availability |
|---|--------------|
| Need for containerization to run in a cloud | ✓ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✗ |
| <u>Legend:</u> ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 201: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | ✓ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 202: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✓ | ✓ | ✓ | ✓ |
| Amazon AWS | ✗ | ✗ | ✗ | ✗ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✓ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 203: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|---|
| System Integrators | All services performed by Swiss Re staff |
| Fintech Partners | Appian - Workbench, pre-integrated to Magnum; Diameter Health <u>EMEA</u> : EIS and Instanda |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 204: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 11 to 15 |
| Resource Breakdown | Vendor: 50%; Client: 50% |
| Location of Employees | Swiss Re Magnum has 16 employees in North America, 10 employees in EMEA, 15 employees in Asia Pacific, and 3 employees in Latin America |
| Average Time to Implementation | <u>Initial implementation</u> : 4 to 6 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 3 months |
| Pricing Models | Enterprise license, Subscription-based license, and Transactional (per application) |

Source: Vendor RFI

SWISS RE: UNDERWRITING EASE

Company and Product Snapshot

Table 205: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 1863 |
| Headquarters | Zurich, Switzerland |
| Number of Employees | 14,000 |
| Revenues (USD) | Not reported |
| Financial Structure | Not reported |
| VendorMatch Link | UnderwritingEase VendorMatch Link |

Source: Vendor RFI

Table 206: Product Snapshot

| | |
|---|---|
| Name | Underwriting Ease |
| Year Originally Released | 2023 |
| Current Release and Date of Release | 1.1/2024 |
| Revenue Derived from Product | Swiss Re does not disclose revenue by product. All solutions are part of the reinsurance business unit. |
| R&D Expense (last two years) | Swiss Re does not disclose. All solutions are part of the reinsurance business unit. |
| FTEs Providing Professional Services for Product | 32 |
| Notable Clients | Not provided |

Source: Vendor RFI

Celent Opinion

Swiss Re's Underwriting Ease fits a very specific niche. Essentially, the product provides underwriters with a SaaS-based portal that combines all the data sources that are useful for underwriting and provides a high-level highlights view of the risk in each case. It is most useful on cases kicked out of an underwriting engine. According to Swiss Re, it was designed by underwriters for underwriters to fill in gaps they see in the underwriting workbench market. To date, two insurers are using the system for their term insurance products. They are Swiss Re Magnum clients.

There is no underwriting engine, product or underwriting rules configuration, or case management capabilities within the system.

The UI is well-designed and easy to use. As Swiss Re describes it, “Underwriting Ease is a one-stop-shop for all the underwriting information, organized by impairment.” Swiss Re does not offer tools to configure the UI. Any UI configuration that might be needed is done by Swiss Re during their implementation.

Underwriting Ease integrates via APIs with external data providers, such as EHR providers, MIB, RX providers, lab data, and more, to display the most recent information. The system comes preloaded with Swiss Re’s underwriting manual as a reference tool, making it available within Underwriting Ease for the benefit of the underwriter. It consolidates the output from all of those potential data sources and centralizes it in one place. For EHRs, the system can take the raw XML file data, normalize it, and then connect it to the impairments in the case. The system cannot extract data from PDF files at this time.

Information is displayed in a clear, concise manner within the portal, and for each major section, the underwriter is given the opportunity to accept or review the information in more depth. While Underwriting Ease is designed to accept cases that are referred to the underwriter from automated engines, it works equally well for cases that are entirely underwritten manually. Because the system is primarily review-only, the underwriter cannot order new requirements, add notes out of the box, or even make a final decision within the system. Notes can be configured, but they wouldn’t remain on Underwriting Ease since it is not a workbench. The primary purpose is a better view of the data for the underwriter.

Reporting and analytics look very similar to the reporting available from Swiss Re Magnum. Basic reporting will include key metrics. They are also working with data science teams to build models based on the data. In both cases the reporting is still in development. Data can be made available to insurers for their own use.

While some automated engines come with underwriting workbenches that display similar information, Underwriting Ease is designed for a very specific spot in the acquisition chain. It works as a companion to an underwriting engine or even a workbench that is not suiting the needs of the underwriters. If an insurer is looking for better underwriting efficiency, it may want to consider adding Underwriting Ease as a tool.

Functionality

Table 207: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | | | ● |
| Dynamic interviewing | | | ● |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | | | ● |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | | | ● |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | | ● | |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | | ● | |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | | ● | |
| Automatic creation of algorithmic scores from selected data | ● | | |
| Underwriter authorization limit management | | | ● |
| Rules change “what-if” scenario analysis | | | ● |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | | ● |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | | | ● |
| New business status for agents (APIs to portal) | | | ● |
| Demand and capacity management capabilities | | | ● |
| Case management correspondence capabilities including expiry, follow-up actions, dates | | | ● |
| Automated communication to agents on outstanding requirements via email | | | ● |
| Case management workflow-specific rules design and management | | ● | |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | ● | | |
| Requirement rules changes monitoring/audit | | | ● |
| Internal underwriting requirements management | | | ● |
| Forms and evidence access from within the NBUW system | | | ● |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Requirements-specific rule design and management | ● | | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | ● | | |
| Reporting and Analytics | | | |
| Predictive analytics | ● | | |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | | | ● |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 208: Lines of Business Supported

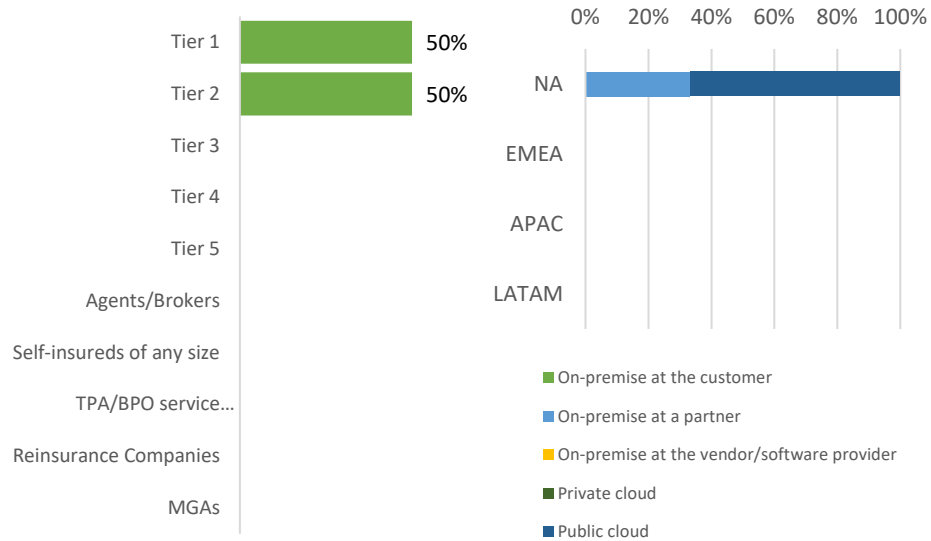
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✗ | ✗ | ✗ |
| Annuity | ✗ | ✗ | ✗ | ✗ |
| Health | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 209: Client Base by Size and Deployment Option (Global or NA only)



Source: Vendor RFI

Table 210: Implementations by Country

| Region | Countries |
|-----------------|---------------|
| North America | United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 211: Technology Options

| Technology Options | Responses |
|---------------------|---|
| Code Base | Java: 60%; JavaScript: 10%; Angular: 30% |
| Integration Methods | Web services; XML (not through web services); RESTful HTTP style services; JSON format; and custom APIs |

| Technology Options | Responses |
|--------------------|--|
| API Details | ✓ The API is documented. |
| | ✗ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✗ API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✗ API sample codes are available to clients. |
| | ✗ API developer portal is available for support and descriptions. |
| | ✗ API testing portal and the ability to use scripts on website is available. |
| | ✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ API version management is available. |
| | ✗ Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✗ Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 212: SaaS Capabilities

| Elements | Availability |
|--|--|
| Supports a multi-tenant architecture | ✓ |
| Type of effort required to update the solution | Evergreen – all clients are on the same latest version |
| Cadence of upgrades for multi-tenant deployments | Every 3 months |
| Deployment approach supports elasticity | ✓ |
| Current APIs-related strategy | Pre-connected cloud environment (fully connected and ready to use) |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | 50% to 80% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✗ |

| Elements | Availability |
|---|--------------|
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✗ |

Legend: ✓ = Yes ✗ = No

Source: Vendor RFI

Table 213: Change Tooling and Upgrades

| Types of Changes | Availability |
|---|--------------------------|
| Business Rule Definition | ✓ |
| Data Definition | <input type="checkbox"/> |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | <input type="checkbox"/> |
| Product Definition | <input type="checkbox"/> |
| Role-Based Security, Access Control, and Authorizations | <input type="checkbox"/> |
| Screen Definition | <input type="checkbox"/> |
| Workflow Definition | <input type="checkbox"/> |

Legend: ✓ = Configurable via tools for business users; ☐ = Configurable via tools for IT users; ■ = Configurable via the vendor; ☹ = Configurable via scripting; ● = Coding required; ✗ = Not available

Source: Vendor RFI

Table 214: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✓ | ✗ | ✗ | ✗ |
| Amazon AWS | ✗ | ✗ | ✗ | ✗ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; ☐ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Partnership

Table 215: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| System Integrators | Not provided |

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| Fintech Partners | Not provided |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 216: Implementation, Support, and Pricing

| | |
|----------------------------------|---|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 90%; Client: 9%; Third party: 1% |
| Location of Employees | Swiss Re - Official has 7 employees in North America, 5 employees in EMEA, and 20 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation</u> : 10 to 12 weeks |
| Pricing Models | Term license and Subscription-based license |
| Source: Vendor RFI | |

UNDERWRITEME: UNDERWRITING ENGINE

Company and Product Snapshot

Table 217: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 2012 |
| Headquarters | London, UK |
| Number of Employees | 135 |
| Revenues (USD) | Confidential |
| Financial Structure | Limited Company |
| VendorMatch Link | UnderwriteMe VendorMatch Link |

Source: Vendor RFI

Table 218: Product Snapshot

| | |
|---|---|
| Name | Underwriting Engine |
| Year Originally Released | 2013 |
| Current Release and Date of Release | Not applicable; SaaS platform |
| Revenue Derived from Product | Confidential |
| R&D Expense (last two years) | Confidential |
| FTEs Providing Professional Services for Product | 20 |
| Notable Clients | EMEA: North Western Mutual, Royal London, FWD |

Source: Vendor RFI

Celent Opinion

UnderwriteMe started in 2012 as an underwriting rules engine, with Pacific Life Re being a majority shareholder since its founding. The base rule set is based on Pacific Life Re's Ocean. There is no requirement that an insurer have a reinsurance relationship with Pacific Life Re to license UnderwriteMe Underwriting Engine. Currently there is no underwriting or case management workbench available, although integrations are possible. UnderwriteMe now has 34 clients in US, Canada, UK, Ireland, Hong Kong, Southeast Asia, Australia, and New Zealand.

The Underwriter Editor within the platform is used by development underwriters to create and modify underwriting rule sets. Insurers can adapt the base rules set or create a customized rule set as necessary to reflect their underwriting philosophy. The Editor includes a simple dashboard that includes over 600 specific rules for

specific disclosures, or inquiry lines. The rules are visualized in a graphical interface with rules paths which are very easy to manage. Each inquiry line can have its own repository of bespoke questions that can be dragged and dropped into the rule flow. The questionnaire, underwriting, and business rules are all built at the same time. In addition to the inquiry lines, the Asset Repository holds wrap-up lines which include comorbidity and business logic rules. Many of these are already prebuilt as well. It is a very powerful but easy to use rules engine that underwriters are actively using.

A very nice feature is the Inquiry Shell which tests the entire end to end reflexive journey based on the rules that were built. Once the rules are triggered, the Inquiry Shell presents the outcomes including any requirements that need to be ordered. This helps speed up rule development. Another nice feature is the user documentation Wiki pages. And for the editor, there are select areas of information that insurers can use as a resource to build inquiry lines from scratch.

The UI for the agent demonstrated to Celent was a separate product called Protection Platform. It is available for agents in the UK and includes a quoting screen and eApplication that is integrated with Decision Studio and Underwriting Engine.

Through the Decision Studio tool, UnderwriteMe can order and receive data from third party data providers. Data intake can be asynchronous or synchronous. It turns the external data into usable entities by interrogating the returned data formats (XML or other) and extracting the data points required for the rules to generate decisions. Celent rarely sees exactly how this happens in such depth; the tool used to run the rules showed how easy it is to tie the resulting outcomes back to the rules that determined them.

An additional tool offered by UnderwriteMe is AssessMe, a post policy audit tool available in the UK. It is being tested in the North American market. Today it can assess life protection, critical illness, income protection, and disability products. It's on the roadmap for expansion to other regions

UnderwriteMe Underwriting Engine includes a data analytics tool for reporting and business analytics. There are 20 bespoke reports, but the tool allows insurers to build their own reports in a variety of ways. The reports are interactive and can be adjusted as needed. Insurers can also extract the data into their own data lakes and use their own BI tools.

Underwrite Me allows insurers to incorporate predictive models to increase STP or streamline the customer journey. Using Decision Studio, the system can ingest the output of models into the rules, and then adapt the rules outcome and journey based on the model output.

UnderwriteMe was built initially for the UK market. With 31 of its 34 customers in the UK, Ireland, Australia and New Zealand it is well suited to expand in those markets. It desires to expand its presence in North America; currently they have three clients in the US. The UnderwriteMe Rules Engine is extremely easy to use and adapt and should be on an insurer's short list if they are not in need a full underwriting workbench. Looking forward, UnderwriteMe has sold a claims system using a similar rules engine for life and disability product.

Functionality

Table 219: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|--|---------------------------------------|------------------------------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | | ● | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | | | ● |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | | | ● |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | | | ● |
| Testing, modeling, and product analysis tools | | | ● |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---------------|---------------------------------|---------------|
| Complex rule processing via 3rd party rules engines | ● | | |
| Underwriter desktop | ● | | |
| Underwriting rules changes monitored and audited by date | ● | | |
| Global, regional, and local underwriting rules support | ● | | |
| Manual underwriting decision audit and update support | | | ● |
| Multiple product and multiple lives simultaneous underwriting support | ● | | |
| System underwriting decision overwrite support | | | ● |
| Automatic creation of algorithmic scores from selected data | | ● | |
| Underwriter authorization limit management | | ● | |
| Rules change “what-if” scenario analysis | | | ● |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | | ● |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers | | | ● |
| New business status for agents (APIs to portal) | | | ● |
| Demand and capacity management capabilities | | | ● |
| Case management correspondence capabilities including expiry, follow-up actions, dates | | | ● |
| Automated communication to agents on outstanding requirements via email | | | ● |
| Case management workflow-specific rules design and management | | | ● |
| Requirements Management | | | |
| Identification of medical underwriting requirements | ● | | |
| Medical underwriting requirements ordering | ● | | |
| Non-medical underwriting requirements ordering | | ● | |
| Requirement rules changes monitoring/audit | | | ● |
| Internal underwriting requirements management | | ● | |
| Forms and evidence access from within the NBUW system | | | ● |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Requirements-specific rule design and management | | ● | |
| Non-medical underwriting requirements identification | ● | | |
| 3rd party data management (receipt, tracking, and follow-up) | | ● | |
| Reporting and Analytics | | | |
| Predictive analytics | | | ● |
| Ability to create customized reports and run analytics on captured data | ● | | |
| GenAI tools | | | ● |
| Legend <div> ● = Available out of the box ● = Configurable through a scripting language/coding ● = Under development / on road map </div> <div> ● = Configurable using simple tools for business user ● = Available with integration to a third party solution ● = Could develop, would be considered customization </div> <div> ● = Configurable using simple tools for IT user ● = Available with integration to a separate module provided by this vendor ● = Not available / not applicable </div> | | | |

Source: Vendor RFI

Lines of Business Supported

Table 220: Lines of Business Supported

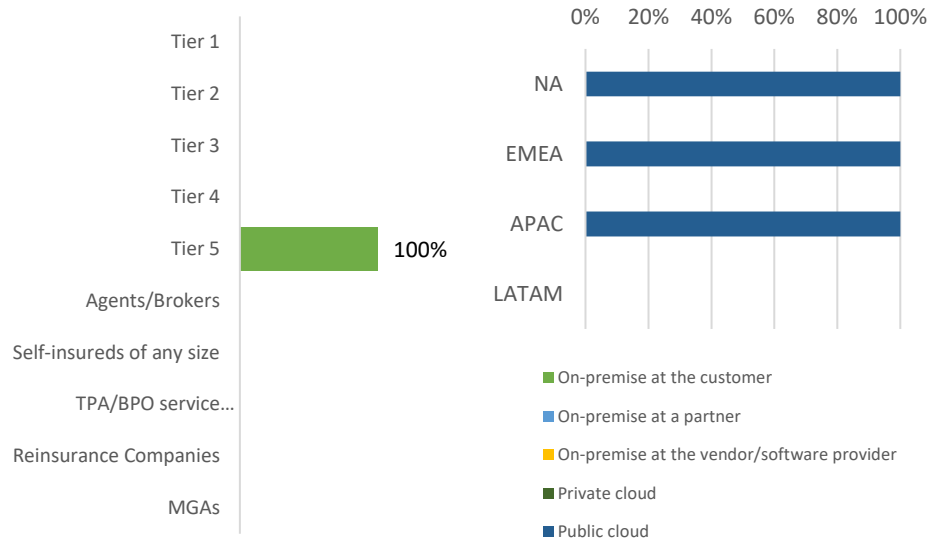
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|------|------|-------|
| Life | ✓ | ✓ | ✓ | ✗ |
| Annuity | ✗ | ✗ | ✗ | ✗ |
| Health | ✓ | ✓ | ✓ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 221: Client Base by Size and Deployment Option (Global)



Source: Vendor RFI

Table 222: Implementations by Country

| Region | Countries |
|-----------------|--|
| North America | United States |
| Europe | United Kingdom |
| Middle East | |
| Africa | |
| Asia-Pacific | Australia, Hong Kong, Malaysia, Philippines, Singapore, Thailand, Vietnam, New Zealand |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 223: Technology Options

| Technology Options | Responses |
|--------------------|--------------|
| Code Base | Not provided |

| Technology Options | Responses | |
|---------------------|--|--|
| Integration Methods | Web services; HTTP; RESTful HTTP style services; and JSON format | |
| API Details | ✓ | The API is documented. |
| | ✓ | External systems can trigger an event in the system, which can be responded to by a workflow or business rules system. |
| | ✗ | API management supports local or global standards, such as ACORD application creation and rendering. |
| | ✓ | API sample codes are available to clients. |
| | ✗ | API developer portal is available for support and descriptions. |
| | ✗ | API testing portal and the ability to use scripts on website is available. |
| | ✗ | System allows API publishing in SOAP, REST, JSON, and XML style services as APIs. |
| | ✓ | API version management is available. |
| | ✗ | Access to the APIs is managed, and use of APIs tracked by developers. |
| | ✓ | Training in extending the system is offered. |

Legend: ✓ = Available; ✗ = Not available

Source: Vendor RFI

Table 224: SaaS Capabilities

| Elements | Availability |
|---|--|
| Supports a multi-tenant architecture | ✗ |
| Type of effort required to update the solution | UnderwriteMe upgrades the solution on a regular cadence. Evergreen – client chooses when to upgrade |
| Cadence of upgrades for multi-tenant deployments | Core engine: 6 to 12 months Editor UI and related services: multiple times a quarter |
| Deployment approach supports elasticity | ✗ |
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | ✗ |
| Ability to enable independent services (microservices) | ✗ |

| Elements | Availability |
|---|--------------|
| Proportion of the system architected as microservices | 100% |
| Supports automation of development and deployment processes (DevOps) | ✗ |
| Ability to run and deploy under containers to improve the application deployment | ✗ |
| Need for containerization to run in a cloud | ✗ |
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✗ |
| Legend: ✓ = Yes ✗ = No | |
| Source: Vendor RFI | |

Table 225: Change Tooling and Upgrades

| Types of Changes | Availability |
|---|--------------|
| Business Rule Definition | ⊖ |
| Data Definition | ⊖ |
| Table Maintenance, List of Values, etc. | ⊖ |
| Interface Definition | ⊖ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | ✓ |
| Screen Definition | ✓ |
| Workflow Definition | ✓ |
| Legend: ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; ✗ = Not available | |
| Source: Vendor RFI | |

Table 226: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|---|----|------|------|-------|
| Microsoft Azure | ✗ | ✗ | ✗ | ✗ |
| Amazon AWS | ✓ | ✓ | ✓ | □ |
| Google Cloud Platform (GCP) | ✗ | ✗ | ✗ | ✗ |
| Alibaba Cloud | ✗ | ✗ | ✗ | ✗ |
| IBM Cloud / Bluemix | ✗ | ✗ | ✗ | ✗ |
| Oracle Cloud | ✗ | ✗ | ✗ | ✗ |
| Salesforce Cloud, Force.com, AppExchange | ✗ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |
| Legend: ✓ = In production; □ = Supported but not in production; ✗ = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 227: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|-------------------|
| System Integrators | None at this time |
| Fintech Partners | None at this time |

Source: Vendor RFI

Implementation, Support, and Pricing

Table 228: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 6 to 10 |
| Resource Breakdown | Vendor: 35%; Client: 65% |
| Location of Employees | UnderwriteMe has 2 employees in North America, 10 employees in EMEA, and 8 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation</u> : 1 to 3 months <u>2nd and subsequent lines of business</u> : 1 to 3 months <u>2nd and subsequent states/jurisdictions</u> : 1 to 3 months |
| Pricing Models | Term license, Perpetual license, Enterprise license, and Subscription-based license |

Source: Vendor RFI

ZINNIA: THE POLICY PROCESSOR (TPP)

Company and Product Snapshot

Table 229: Company Snapshot

| | |
|----------------------------|---|
| Year Founded | 2005 |
| Headquarters | Topeka, KS |
| Number of Employees | 2,600 |
| Revenues (USD) | Confidential |
| Financial Structure | Private with outside investors, acquired by Eldridge Industries in 2017 |
| VendorMatch Link | Zinnia VendorMatch Link |

Source: Vendor RFI

Table 230: Product Snapshot

| | |
|---|--|
| Name | The Policy Processor (TPP) |
| Year Originally Released | 2004 |
| Current Release and Date of Release | 7.6/2023 |
| Revenue Derived from Product | Confidential |
| R&D Expense (last two years) | Zinnia generally targets 15% of revenue toward R&D |
| FTEs Providing Professional Services for Product | 500 |
| Notable Clients | <u>North America</u> : John Hancock, ManuLife, Nationwide, Sun Life, Gen Re <u>APAC</u> : Max India |

Source: Vendor RFI

Celent Opinion

TPP was purchased along with other Ebix life and annuity software assets by Zinnia in February 2024. TPP is now part of Zinnia's L&A Exchange Solutions, a suite of distribution tools. Zinnia has made few material changes to TPP itself since the Ebix acquisition, and, given the circumstances Ebix faced before the sale, Celent sees little change in the system since our review of TPP in 2020.

Zinnia has concentrated on integrating the existing system into their suite of distribution tools. They have also built an overall workflow layer above TPP to drive business rules across their suite. While the UI is very easy to use, this workflow layer is only useful if the insurer relies on Zinnia for its workflow architecture.

TPP's client base consists of 13 clients from prior to the acquisition and two new Tier 5 clients using their system as part of a TPA arrangement.

The product and underwriting rules configuration tool can be managed by a business user. While Zinnia will do the initial configuration as part of implementation, training is offered by the vendor so clients can make changes post-implementation. As with most systems, complex or multi-tiered rules may require an IT skill set. Two and three levels of comorbidity rules are available.

Zinnia has built an overlying rules orchestration layer for workflow, with thousands of rules prebuilt in the new layer. Built on DMN technology, this new workflow layer has a different user interface than TPP and is better and easier to use. Zinnia has also integrated TPP into Zinnia Live, an external portal for agents and distribution channels.

Similar to our last two reviews, the underwriter workbench provides the expected case management and underwriting support to view cases, follow up on outstanding evidence and requirements, view evidence, add debits and credits, and make an underwriting decision. Communication tools between the agent, policyholder, and the underwriter are available.

Zinnia offers an analytics solution with an external portal (Sisense) as part of the product offering. The client can choose to export the data into their data warehouse or use the TPP analytics portal. Additionally, an embedded analytics solution is on the road map. AI or generative AI tools are not available.

TPP is a highly functional system with a navigable user interface for configuration and capabilities expected in this market. To stay competitive, Zinnia should make investments in the TPP product. Integrating into their own suite of tools is beneficial if the client uses the other tools, but as a stand-alone underwriting system, clients may not be interested in the suite of tools.
























Functionality
















Table 231: Functionality

Legend

- = Available out of the box
- = Configurable through a scripting language/coding
- = Under development / on road map
- = Configurable using simple tools for business user
- = Available with integration to a third party solution
- = Could develop, would be considered customization
- = Configurable using simple tools for IT user
- = Available with integration to a separate module provided by this vendor
- = Not available / not applicable

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---------------|---------------------------------|---------------|
| Desktop | | | |
| eApplication—web-based | ● | | |
| eApplication—mobile | ● | | |
| Dynamic interviewing | ● | | |
| Industry standard application form (such as ACORD) import or upload | ● | | |
| Data validation during application data capture | ● | | |
| Electronic signature capability | ● | | |
| External data systems or services integration for data prefill | ● | | |
| Product Rules Management | | | |
| Product and rate rules maintained separately from underwriting rule definition and management | ● | | |
| Reinsurer underwriting manual integration | ● | | |
| Product dictionary/repository support | ● | | |
| Premium calculations based on underwriting class | ● | | |
| Rule validation during add/update based on local regulations and regional restrictions. | ● | | |
| Testing, modeling, and product analysis tools | | | ● |
| Underwriting Rules Management | | | |
| Underwriting-specific rules design/management | ● | | |
| Rule-based underwriting for less complex / low face amount cases (no touch) | ● | | |
| Complex rule processing based on internal rules capabilities for medically underwritten products including underwriting decision (no touch) | ● | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|--|---|---|---|
| Complex rule processing via 3rd party rules engines |  | | |
| Underwriter desktop |  | | |
| Underwriting rules changes monitored and audited by date | | |  |
| Global, regional, and local underwriting rules support |  | | |
| Manual underwriting decision audit and update support |  | | |
| Multiple product and multiple lives simultaneous underwriting support | |  | |
| System underwriting decision overwrite support |  | | |
| Automatic creation of algorithmic scores from selected data |  | | |
| Underwriter authorization limit management |  | | |
| Rules change “what-if” scenario analysis | |  | |
| Post Issue Underwriting | | | |
| Continuous underwriting support using ongoing fitness tracker or other biometric data | | |  |
| Case Management | | | |
| Correspondence tools between underwriter and agents/producers |  | | |
| New business status for agents (APIs to portal) |  | | |
| Demand and capacity management capabilities |  | | |
| Case management correspondence capabilities including expiry, follow-up actions, dates |  | | |
| Automated communication to agents on outstanding requirements via email |  | | |
| Case management workflow-specific rules design and management |  | | |
| Requirements Management | | | |
| Identification of medical underwriting requirements |  | | |
| Medical underwriting requirements ordering |  | | |
| Non-medical underwriting requirements ordering |  | | |
| Requirement rules changes monitoring/audit | |  | |
| Internal underwriting requirements management |  | | |
| Forms and evidence access from within the NBUW system |  | | |

| Function | In Production | Supported but Not in Production | Not Supported |
|---|---|---|---|
| Requirements-specific rule design and management |  | | |
| Non-medical underwriting requirements identification |  | | |
| 3rd party data management (receipt, tracking, and follow-up) |  | | |
| Reporting and Analytics | | | |
| Predictive analytics | |  | |
| Ability to create customized reports and run analytics on captured data | |  | |
| GenAI tools | | |  |
| Legend | | | |
|  = Available out of the box  = Configurable through a scripting language/coding  = Under development / on road map | | | |
|  = Configurable using simple tools for business user  = Available with integration to a third party solution  = Could develop, would be considered customization | | | |
|  = Configurable using simple tools for IT user  = Available with integration to a separate module provided by this vendor  = Not available / not applicable | | | |

Source: Vendor RFI

Lines of Business Supported

Table 232: Lines of Business Supported

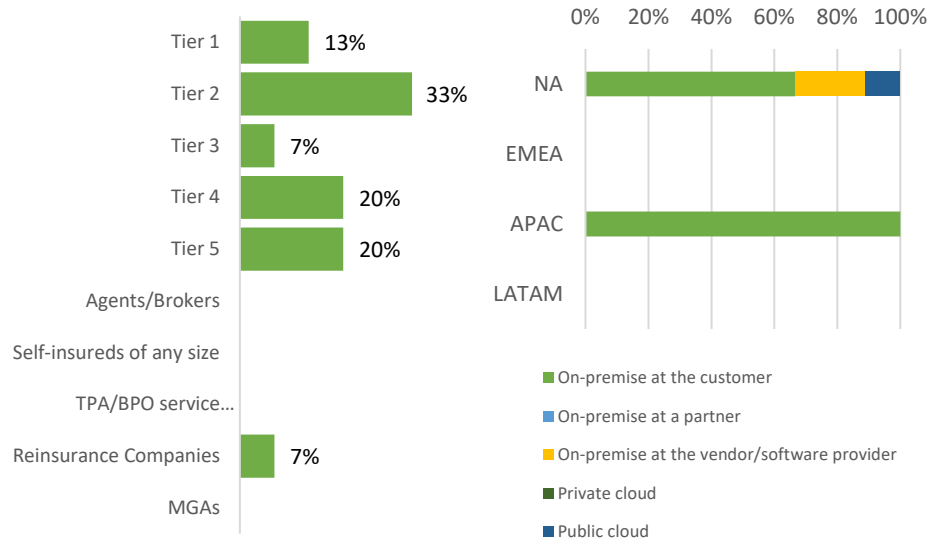
| Line of Business | NA | EMEA | APAC | LATAM |
|------------------|----|--------------------------|--------------------------|--------------------------|
| Life | ✓ | <input type="checkbox"/> | ✓ | <input type="checkbox"/> |
| Annuity | ✓ | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Health | ✓ | ✗ | ✗ | ✗ |
| Other | ✗ | ✗ | ✗ | ✗ |

Legend: ✓ = In production; ☐ = Supported but not in production; ✗ = Not supported

Source: Vendor RFI

Customer Base

Table 233: Client Base by Size and Deployment Option (Global or NA only)



Source: Vendor RFI

Table 234: Implementations by Country

| Region | Countries |
|-----------------|--------------------------------|
| North America | Bermuda, Canada, United States |
| Europe | |
| Middle East | |
| Africa | |
| Asia-Pacific | India |
| Central America | |
| South America | |
| Caribbean | |

Source: Vendor RFI

Technology

Table 235: Technology Options

| Technology Options | Responses |
|--------------------|--|
| Code Base | Java: 70%; JavaScript: 20%; Other (xml, xpath, xslt, html, sql scripting): 10% |

| Technology Options | Responses |
|----------------------------|--|
| Integration Methods | Web services; XML (not through web services); HTML; HTTP; RESTful HTTP style services; JSON format; MQSeries/JMS/Similar queue technology; Custom APIs; Flat files; and Native messaging |
| API Details | <div>✓ The API is documented.</div> <div>✓ External systems can trigger an event in the system, which can be responded to by a workflow or business rules system.</div> <div>✓ API management supports local or global standards, such as ACORD application creation and rendering.</div> <div>✓ API sample codes are available to clients.</div> <div>✓ API developer portal is available for support and descriptions.</div> <div>✓ API testing portal and the ability to use scripts on website is available.</div> <div>✓ System allows API publishing in SOAP, REST, JSON, and XML style services as APIs.</div> <div>✓ API version management is available.</div> <div>✓ Access to the APIs is managed, and use of APIs tracked by developers.</div> <div>✓ Training in extending the system is offered.</div> |

Legend: ✓ = Available; ✕ = Not available

Source: Vendor RFI

Table 236: SaaS Capabilities

| Elements | Availability |
|---|----------------------------|
| Supports a multi-tenant architecture | ✕ |
| Type of effort required to update the solution | Not provided |
| Cadence of upgrades for multi-tenant deployments | n/a |
| Deployment approach supports elasticity | Yes, automatically |
| Current APIs-related strategy | Enabled by consumable APIs |
| Ability of the deployment model to leverage a serverless approach | ✓ |
| Ability to enable independent services (microservices) | ✓ |
| Proportion of the system architected as microservices | Under 25% |
| Supports automation of development and deployment processes (DevOps) | ✓ |
| Ability to run and deploy under containers to improve the application deployment | ✓ |
| Need for containerization to run in a cloud | ✕ |

| Elements | Availability |
|---|--------------|
| Ability of the system's functions and capabilities to be distributed between a private cloud and a public cloud | ✓ |
| <u>Legend:</u> ✓ = Yes x = No | |
| Source: Vendor RFI | |

Table 237: Change Tooling and Upgrades

| Types of Changes | Availability |
|--|--------------|
| Business Rule Definition | ✓ |
| Data Definition | ✓ |
| Table Maintenance, List of Values, etc. | ✓ |
| Interface Definition | □ |
| Product Definition | ✓ |
| Role-Based Security, Access Control, and Authorizations | □ |
| Screen Definition | ● |
| Workflow Definition | ✓ |
| <u>Legend:</u> ✓ = Configurable via tools for business users; □ = Configurable via tools for IT users; ■ = Configurable via the vendor; ⊖ = Configurable via scripting; ● = Coding required; x = Not available | |
| Source: Vendor RFI | |

Table 238: Public Cloud Options

| Providers | NA | EMEA | APAC | LATAM |
|--|----|------|------|-------|
| Microsoft Azure | ✓ | x | x | x |
| Amazon AWS | ✓ | x | x | x |
| Google Cloud Platform (GCP) | □ | x | x | x |
| Alibaba Cloud | x | x | x | x |
| IBM Cloud / Bluemix | □ | x | x | x |
| Oracle Cloud | x | x | x | x |
| Salesforce Cloud, Force.com, AppExchange | x | x | x | x |
| Other | x | x | x | x |
| <u>Legend:</u> ✓ = In production; □ = Supported but not in production; x = Not supported | | | | |
| Source: Vendor RFI | | | | |

Partnership

Table 239: Implementation and Support

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| System Integrators | Not Applicable |

| Type of Partnership | Partner Vendor |
|---------------------|----------------|
| Fintech Partners | Not Applicable |
| Source: Vendor RFI | |

Implementation, Support, and Pricing

Table 240: Implementation, Support, and Pricing

| | |
|----------------------------------|--|
| Typical Implementation Team Size | 16 to 20 |
| Resource Breakdown | Vendor: 80%; Client: 20% |
| Location of Employees | Zinnia has 50 employees in North America and 400 employees in Asia Pacific |
| Average Time to Implementation | <u>Initial implementation:</u> 7 to 12 months <u>2nd and subsequent lines of business:</u> 4 to 6 months <u>2nd and subsequent states/jurisdictions:</u> 1 to 3 months |
| Pricing Models | Term license, Perpetual license, Enterprise license, and Subscription-based license |
| Source: Vendor RFI | |

PATH FORWARD

As insurers continue to digitize their operations, it is not surprising that the underwriting process will be one of the major transformations they will undertake. Understanding the automated underwriting solutions available from vendors is very important. Insurers have choices in the market. The systems presented in this report enable an insurer to rely on a reinsurer for underwriting rules, build their own rules and processes in a vended solution, or use a hybrid of the two. We believe these vendors offer options that insurers need to transform their underwriting processes.

The market for new business and underwriting systems remains strong in North America. Today's NBUW system can perform many repetitive risk scoring activities for simple cases with minimal human support. The NBUW systems can help bring forth more "fluidless" underwriting and a better experience for the applicant.

While there are risks associated with a more streamlined, standardized, digitized underwriting process—such as mortality experience due to less evidence being used, and persistency issues or lack of growth if competitor's processes are also improved—not transforming the process is a bigger risk in Celent's opinion. The market is moving forward with simplified products underwritten via automated solutions. In addition to staying competitive, Celent's research has shown that, once the system is implemented, insurers can expect reductions in key metrics like cost per policy issued, cycle time, and case manager / underwriter productivity.

For Insurers

There is no single best new business and underwriting system for all insurers. There are several good choices to meet almost any set of insurer requirements. An insurer seeking an automated underwriting system should begin the process by looking both inward and outward. Every insurer has its own mix of products, existing channels, underwriting processes, staff capabilities, business objectives, and financial resources. This unique combination of factors, along with the organization's risk appetite, will influence the list of vendors meriting consideration.

Some vendors are a better fit for an insurance company with a large IT group that is deeply proficient with the most modern platforms and tools. Other vendors are a better fit for a company that has a small IT group and wants a vendor to take a leading role in maintaining and supporting its applications.

We recommend that insurers looking for a new business and underwriting system narrow their choices by focusing on four areas:

- *The art of the possible:* What can be done with advanced tools? Look at whether functionalities that the business needs are available out of the box for the lines of business and states desired. Check to see what is actually in production.
- *The technology:* Consider both the overall architecture and the configuration tools and environment. Perform proof-of-concept exercises with shortlisted vendors. This is a chance for providers to show what they can do.
- *The vendor's stability, knowledge, and investment in the solution:* Consider the partnership dimension carefully. Key functional gaps are quickly closed by leading vendors.
- *Implementation and support capabilities and experience:* The relationship between an insurer and its underwriting system vendor will likely last years. Celent can help with selection projects; we know the vendors and the markets well.

For Vendors

As a group, new business and underwriting systems are expanding their capabilities rapidly through significant investments. The solutions are delivering a great deal of customer acquisition functionality with improved configuration tools. They're also more connected, with APIs and RESTful web services becoming the de facto standard. Although these trends are all excellent news for insurers, they make the competitive challenges facing vendors that much more daunting.

Celent recommends vendors differentiate themselves by:

- Focusing on improving usability for both new and experienced users and managers.
- Continuing to build out configuration environments to put change controls in the hands of the insurers. Configuration tools that business analysts can use get high scores from insurers assessing these solutions.
- Making implementation faster and less expensive.
- Continuing to expand functionality—especially in different lines of business and in the use of AI and analytics capabilities.
- Embedding cloud-native capabilities into the product.

Was this report useful to you? Please send any comments, questions, or suggestions for upcoming research topics to info@celent.com.

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Support for Financial Institutions

Typical projects we support include:

Vendor short listing and selection. We perform discovery specific to you and your business to better understand your unique needs. We then create and administer a custom RFI to selected vendors to assist you in making rapid and accurate vendor choices.

Business practice evaluations. We spend time evaluating your business processes and requirements. Based on our knowledge of the market, we identify potential process or technology constraints and provide clear insights that will help you implement industry best practices.

IT and business strategy creation. We collect perspectives from your executive team, your front line business and IT staff, and your customers. We then analyze your current position, institutional capabilities, and technology against your goals. If necessary, we help you reformulate your technology and business plans to address short-term and long-term needs.

Support for Vendors

We provide services that help you refine your product and service offerings.

Examples include:

Product and service strategy evaluation. We help you assess your market position in terms of functionality, technology, and services. Our strategy workshops will help you target the right customers and map your offerings to their needs.

Market messaging and collateral review. Based on our extensive experience with your potential clients, we assess your marketing and sales materials—including your website and any collateral.

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