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XCELENT Awards 2020

POLICY ADMINISTRATION SYSTEMS: NORTH AMERICA PROPERTY CASUALTY EDITION:

2020 xCELENT AWARDS, POWERED BY VENDOR MATCH

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EXECUTIVE SUMMARY

This report provides an overview of the policy administration systems available in North America for property and casualty insurance carriers. The report profiles 31 policy administration solutions, providing an overview of their functionality, customer base, lines of business supported, technology, implementation, pricing, and support. Of those solutions, 14 qualified for Celent's ABCD rankings. Their profiles include customer references and a Celent opinion of the solution. Those solutions are also ranked in the ABCD Vendor View. Another 20 solutions did not qualify to be ranked in the ABCD Vendor View, and those profiles do not include a customer reference or a Celent opinion.

Some vendors also appear in companion reports profiling these systems in Asia Pacific, Europe/Middle East/Africa, and Latin America. Vendors that qualified are ranked in the ABCD Vendor View grids.

Majesco received the following XCelent designations:

- XCelent Service for the leading Depth of Service score:
  Majesco

INTRODUCTION

This report is part of a series on policy administration systems (PAS) in North America, Latin America, EMEA, and the Asia-Pacific. It profiles the majority of the property casualty policy administration systems available in North America today. It uses Celent's ABCD vendor view, which is our standard representation of a vendor marketplace, designed to show at a glance the relative positions of each vendor in four categories: **A**dvanced Technology, **B**readth of Functionality, **C**ustomer Base, and **D**epth of Client Services. Insurers should consider which of these factors are most important to them and review the detailed profiles in this report to assess vendor suitability.

This report includes 14 systems that fully met the inclusion criteria for Celent's ABCD Vendor View as described in the "Report Methodology" section of this report. It also profiles 17 additional vendors that did not meet the ABCD criteria. These vendors are either new market entrants or, for a variety of reasons, did not fully meet the inclusion criteria.

This report should help insurers define their core systems requirements and, where appropriate, create a short list of vendors for evaluation. Expanded PAS functionality and improved technology mean that insurers continue to have a wide spectrum of systems and vendors to consider when they are looking for a solution to fit their needs. Insurers should leverage their access to the authors through analyst access calls to learn more about the vendors.

POLICY ADMINISTRATION SYSTEMS: DEFINITION AND FUNCTIONALITY

DEFINITION

In one sense, the definition of a policy administration system (PAS) is very simple—it is the system of record for all policies that an insurance company has written. At this most basic level, a PAS is a repository of policy-level data related to objects of insurance, coverages, limits, conditions, exclusions, duration of the policy, endorsements, and so forth. A permanent policy record is created at the time a policy is issued, and it includes the complete history of the policy through renewal, termination, cancellation, and/or reinstatement.

In actual practice, an insurer uses a PAS—either by itself or closely integrated with specific point solutions—to execute a number of core processes, and relies on several types of supporting capabilities. All modern core policy systems provide basic functionality for the most standard processes of quoting, issuing, endorsing, and renewing a policy. However, there is significant variation in the way the solutions handle these functions.

TRANSACTIONAL SERVICING FEATURES

A variety of features are available to handle the day-to-day transactional activities of quoting, issuance, endorsements, renewals and cancellations.

Scheduling/calendar/diary: A wide variety of tools are available to help the underwriter manage their workload. Underwriter desktops typically include an area where new business quotes, policies needing issuance or renewal, endorsements, and other assigned tasks are easily found. User interfaces can vary widely but often include features such as the ability to sort by clicking on columns, to filter columns, and to drag and drop and rearrange columns. All solutions include search, but some include sounds-like search, partial word search, Boolean search, or wildcards. Most systems allow underwriters to create manual diaries, tasks, and notes and to easily see their work in a calendar format. Many are integrated with email, allowing an underwriter to send an email from the desktop. Many include a policy or account summary that contains the most important information about a policy or account and is available at a glance from any location within the policy. Some solutions allow the underwriter to customize their own workspace, choosing which modules they want displayed, selecting a color scheme, or adding links to commonly used third-party websites. Other capabilities such as configurable help text, hover-overs, and wizards can help an underwriter easily navigate through the task.

Quick quote and full quote. Agents and underwriters often want to get a quick indication of risk acceptability and price and to compare the price of different options. Quick quote functionality allows a price to be generated with minimal data entry. The data entry screen contains only those questions needed to calculate a rate or to determine the basic terms and conditions of the policy. Sometimes the questions will include basic risk acceptability questions, but quick quote is not usually intended to handle the full underwriting of the policy. Many solutions support dynamic questions that expand and change based on the answers to specific questions, allowing the system to prompt the broker or underwriter to get more detailed information based on insured's responses. Multiple versions of the quote can be generated to see the impact of different terms, conditions, and product choices. Some solutions handle side-by-side quoting by opening separate windows. Some allow different quote versions to be saved. More and more are offering side-by-side quoting in a single window. Once a quote is generated, some solutions allow for multiple side-by-side views of different options. The user can change a

deductible in version one, or a limit in version two. Some solutions use drop downs to show the different available options, with the price difference for each option shown next to the label within the drop down itself. Most solutions include the ability to create and display rating worksheets (a detailed listing of how the premium was calculated). Some have the ability to show simplified versions to the brokers and detailed versions to the underwriters.

ACORD upload: ACORD applications are the most commonly utilized form of application in the industry. The data is commonly contained in the agents' or brokers' agency management systems. Rather than requiring the broker to reenter the data on the application, many systems allow brokers to upload an ACORD application and have the data prepopulate the appropriate fields, retaining a copy of the ACORD application elsewhere in the system.

Data upload: specialty and commercial lines policies often include large schedules of drivers, locations, vehicles, or equipment. Many systems allow these schedules to be imported or uploaded from an Excel spreadsheet. Some systems require that the spreadsheet be formatted in a particular order. Some allow mapping of the spreadsheet as the spreadsheet is being uploaded.

Data services: Underwriters rely heavily on third-party data or reports from external data services. Most systems have some level of pre-integration with the most common data service vendors. Some require the underwriter to manually request the external data. Others use business rules to automatically send the data request and retrieve the data or report. Some can take the data retrieved and populate the specific field; others store the data as a record that the underwriter can review, and the underwriter can then enter the data into the correct field in the policy record.

Automated underwriting: Many solutions have the ability to use business rules to automate the underwriting process. The solutions use business rules to determine if the transaction can proceed without human intervention, or if intervention is required, a task is generated for the underwriter to review and act on. Some solutions can handle basic yes/no questions only. Others can perform very sophisticated underwriting. The capabilities are heavily influenced by the level of sophistication of business rules and workflow capabilities.

Underwriter assignment: While some carriers still assign work manually, more and more carriers are looking for automated support in the underwriting process. Solutions handle underwriter assignment in a variety of ways, for example the ability to assign policies/quotes to a team or individual using a round-robin capability, or the ability to assign tasks to specific individuals based on specific criteria. Some solutions can assign a transaction very granularly, based on line of business, agent, geography, and workload. Most systems allow multiple underwriters to be assigned to work on a single account handling different policies. Carriers also look for capabilities for manual assignment or reassignment for both bulk transactions and single policies or accounts.

Automated renewals: Most solutions have the ability to handle no-touch automated renewals. If the policy meets the carrier's defined requirements, the information from the original policy carries over to the renewal, and the policy is issued. Some allow business rules to be used to apply an inflation factor automatically or to make other bulk changes on policies as they renew. Those policies that do not meet the requirements are popped out of the renewal cycle and assigned to an underwriter for intervention. Along with automated renewals, look for automated non-renewals. Some solutions allow a policy to be marked for non-renewal. Others allow business rules to be used to determine whether an underwriter will allow the policy to renew. In the case of an automated non-renewal, the system can generally send out the appropriate documents in the right time frame according to the jurisdictional requirements of the policy.

Endorsements: All systems can handle endorsements. Almost all systems can handle out-of-sequence endorsements as well. When it comes to out-of-sequence endorsements, there are a variety of techniques in place. Some alert the underwriter to the fact that the policy change is out of sequence. Each affected endorsement is identified, and the underwriter can select which to back off and which to roll back on. Others handle the back off and roll on automatically, only highlighting conflicts for an underwriter's intervention. At least one solution can handle multiple policy changes with different dates on a single endorsement. Mid-term broker of record changes can often be handled as a bulk transaction, but some systems require the changes to be implemented policy by policy. Some allow a lot of flexibility as to when commission changes occur, and some allow the commission to begin accruing to the new broker immediately. Others begin commission accrual at the time of renewal.

PRODUCT MANAGEMENT CAPABILITIES

In addition to transactional capabilities, a policy administration system is the primary repository for the product rules, rates, and forms attachment logic for all products.

Product design tools: The product architecture is a key component of a policy administration system. Often when implementing a new system, this is an area that requires significant work on the part of a carrier, such as redesigning their products to match the architecture inherent in the policy administration system. Look for a base set of insurance products that can be leveraged for building new lines or new products. Some solutions allow easy cloning of product/rating rules and structures. Many solutions have a product architecture that is depicted as a tree, which allows inheritance across jurisdictions for common features. Some include color-coding that helps a carrier easily identify where a product does not conform to the nationwide version. Some keep their product architecture in an Excel or Excel-like format, which can be easy for the business to maintain. Some solutions include wizards that make it very easy for a business user to make basic parameter-driven product updates. Some include a self-documenting product dictionary. The dictionary is the source of complete, reusable insurance product definitions, including rates, underwriting rules, calculations, specifications, integration definitions, and data for managing forms so each piece can be defined as reusable components that can be rapidly adapted to form new products or enhancements. Some product dictionaries are very business-user-friendly with natural language definitions.

Rating: Most, but not all, solutions include rating engines as a key feature. As vendors create more sophisticated configuration tools, rate changes can be done by business analysts rather than developers. The rate tables, rules, and algorithms are externalized from the programming code. There are wide variations in the level of sophistication of the rating engines. As carriers have moved to more complex rating algorithms, rating engines have expanded their ability to support complex rating algorithms, including multivariate rating and by-peril rating. The more precise an algorithm, the more precisely a risk can be priced. As insurers extend their use of predictive models, they need algorithms that can accommodate these models. Look for the ability to easily create subroutines; built-in functions to handle minimum premiums, rate capping, or prorating; and the ease of ordering the expression. Interpolation of rates is sometimes needed, like when a specific rate is not provided in a rate table. Some tools include interpolation capabilities out of the box. Rounding is another area to look at closely to ensure the ability to round with the right level of granularity at any place in the expression. Most allow multiline, multilocation rating on a single quote or policy. Many also allow multistate rating. Look for the ability to use external party information sources (e.g., credit score, loss data, property data, predictive scores etc.) in the rate algorithms during real-time calculation. Other features to look for include the date management capabilities—the ability to manage multiple dates based on the versions of the rate, table, or algorithm changes. Some solutions require the versioning dates be embedded in the code or script. Others provide fields to enter the dates. Some allow different versions or effective dates for renewals versus new business.

Rating maintenance tools: For the easiest management and maintenance, rate tables should be kept separate from the algorithms, and business rule definition and management (e.g., automatic driver assignment) should be maintained separately from the rating algorithms. It's also helpful to keep deviations in a separate layer. Most solutions allow the import or export of rating tables to or from spreadsheets. Look for how the tool handles multidimensional tables. Look for the tools necessary to create the algorithm—some have graphical Visio-like tools. Lastly, reusable rating components are helpful, especially if there is a prebuilt library of product and rating rule components. Even better is to have a repository of rules that is searchable and version controlled.

Testing, modeling, and analytical tools: Some solutions include very robust tools for handling the rate analysis function. Testing, modeling, and product analysis tools that allow an insurer to do an impact analysis to calculate the overall impact of a rate change or a displacement analysis to identify the number of policyholders that will be affected are included. Some include tools that make it easy to compare current rates against proposed rates. Not all vendors have these types of tools built in. Some vendors have business intelligence tools included and can set up reports that can provide some level of analysis as well. Some solutions do not include any functionality for handling rate analysis or testing. This is an area that is rising in priority for insurers. For more information, see the report *New Tools for Product Management: Four Tips for Getting It Right*.

Bureau support: Most developed markets globally have local definitions of products, rates, and standards that inform the majority of the products in the market. In some cases, this is imposed or managed by a particular distribution channel, in some it is agreed to by a standards body, and in others is simply local convention. Increasingly it is the distribution channels that are increasing product diversity and speed of change as distribution partners impose standards of other parties. Examples include having to adopt price comparison site data standards to appear on their lists or adopting a data standard on a blockchain to participate in specific international marine opportunities, as seen in *InsurWave*[1].

In the United States almost all commercial lines insurers rely on ISO or NCCI for rates, rules, and forms. There are several ways in which vendors provide ISO rating support to their clients.

> **Vendor interpretation:** Some vendors have their own teams of people that support ISO content. Employees read the ISO circulars, interpret them, and send the information to the insurer to determine if they wish to adopt the change. If the insurer wishes to adopt the change, the vendor then loads the changes into the policy administration system. The cost for this service is typically loaded on top of the vendor's annual maintenance fee for its solution. Some vendors provide service-level guarantees to ensure the vendor does not miss a filing date.

> **ISO ERC support:** The most significant option for rating engines is the ISO Electronic Rating Content (ERC). With ERC, ISO offers its rating content in an electronic format. This service has many features—all of which are intended to streamline the process for insurers, allowing them to take revisions faster. ISO provides all circulars in an electronic format. They provide loss costs, rules, and forms attachment logic in both XML and Excel formats. ISO includes a reporting utility that helps insurers identify and understand the differences between the circular revisions and the insurer's current rating structure, including their program deviations. Insurers can subscribe to ISO ERC, but to get full value,

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[1] https://insurwave.com/

their policy administration or rating system needs to be able to absorb the XML stream or Excel files.

Vendors that are ERC-enabled have invested in technical capabilities that allow the rating solution to receive the ISO ERC changes from ISO. The vendor creates a utility that receives the changes and transforms the data into the solution's data model. Typically, the solution provides additional tools to allow the insurer to identify what changes were made and modeling tools to understand the impact of those changes. Look for how many major and minor lines have been enabled and how many are actually in production. For more information about the benefits of ISO ERC, see our report *Does ISO ERC Deliver the Goods?*

Price optimization, machine learning, and artificial intelligence: Systems may include price optimization tools (in jurisdictions where this is legal). Some include artificial intelligence capabilities. In some cases, the integration is simply allowing models and other data sources to inform the rating, underwriting rules, and pricing. Increasingly, however, both actuaries and pricing leads are leaning more and more on advanced analytics, machine learning, and AI to inform rating and pricing. This requires building a data science pipeline into the rating and pricing capability to create, update, and realize the utility of these models at run-time. For more discussion on the data science pipeline and DataOps, see *Demystifying Artificial Intelligence in Insurance: The Tools Supporting Data Science and the Rise of DataOps*.

Fraud at quote: Fraud analytics at the point of sale is another new area we are starting to see, particularly in markets with significant fraud issues. Many policy administration systems can integrate with a third-party solution in this area. Some are beginning to work on creating this capability themselves.

Reinsurance: One of the newer areas that vendors have begun to invest in is reinsurance capabilities within the policy administration system. Most solutions do not include this functionality. The most robust solutions allow for full program definition. Carriers can identify multiple treaties based on perils, lines of business, geographies, or other dimensions. Treaties can be assembled into programs with specific inurements identified. The solution will create bordereaux reports tracking the exposures, the commissions, and the premiums back to the reinsurer. Some allow an underwriter to manually mark a policy as reinsured with some basic information about any facultative contracts. Some have set up reports that allow for basic reporting on policies that meet basic treaty requirements.

COMMON FUNCTIONALITY
There are a variety of functions that are not specific to underwriting or product management, but can generally be found in a policy administration system.

Workflow: Some solutions serve more as data capture tools. Workflow is simulated with screen flow. Other solutions have true workflow capabilities—the ability to automatically generate and assign tasks based on event changes in a policy, time lapse, or data changes in a field. Some of the solutions profiled have the capability to visualize the workflow through graphical depictions. Some have a graphic design environment, with automated background code generation. This means graphical depictions are actionable—clicking on a step allows the carrier to modify that step, or steps can be dragged and dropped to rearrange the sequencing. It is not uncommon for a software vendor to use a third-party or open source tool to manage the workflow requirements.

Document creation: Most of the solutions include some sort of correspondence or forms library for the most common forms and letters. Many integrate to third-party solutions to provide additional capabilities because many of the built-in solutions are not robust

enough to handle production-level policy generation. Look for standard templates out of the box. Many of the solutions will come preloaded with ISO, NCCI, or Bureau forms. The forms attachment logic is typically included as part of the product definition, and the templates themselves are included in the document creation tools. In addition to policy forms, many systems can automatically generate correspondence using business rules and task generation capabilities. When an event occurs, or the data within a field changes, the solution can automatically create correspondence that can often be delivered using a variety of mechanisms: mail, email, or SMS.

Document management: Some systems contain a document management capability allowing for storage of internally generated documents and external documents such as photos, videos, and other media. Many integrate to external third-party solutions to provide more scalability. Look for the level of granularity in indexing forms being created. When a policy file holds hundreds of items, being able to rapidly sort to find the document needed can save time. Look for not just the ability to search the metadata about the document, but also the ability to search within the document.

Reporting: Reporting capabilities vary widely across solutions. Virtually all solutions integrate to a third-party reporting tool. Some include a third-party reporting tool out of the box. Some solutions use open source reporting tools, and some have solutions built in-house. Most include some level of prebuilt standard reports that can be subscribed to or scheduled. Standard reports typically deliver operational reports, performance measures, and some level of financial reporting. Look for the number of reports included out of the box. Ad hoc capabilities vary widely. Some are quite easy to use, with the ability to drag and drop data elements and build a report very simply. Many include dashboards with graphical views of data, and many of those include drilldown capabilities.

Mobile/multichannel access: Almost all solutions are browser-based and so are available via a tablet or mobile device for an underwriter in the field. More and more have been optimized for a mobile device using HTML 5 or responsive design. Some solutions come with mobile applications out of the box meant for a potential policyholder to access their policy, pay their bill, or get proof of insurance.

TECHNICAL FUNCTIONALITY

While assessing features and functionality is a critical step in selecting a policy administration system, there are a number of technical considerations to be considered as well.

Configuration tools: A general trend in insurance software is to create tools that allow carriers to do more modifications of the system through configuration tools rather than through code. The most robust tools allow carriers to easily add data elements, create business rules, modify workflows, create forms, create screens, modify the user interface, and even map interfaces, all using configuration tools. Some tools are extremely intuitive with drag-and-drop and point-and-click capabilities. Others require knowledge of a scripting language to make the changes. Many vendors are moving toward a dual development environment with simplified tools and wizards meant for business analysts to use to make general changes and a more robust environment meant for technical staff to utilize.

Business rules: Look for the ability to design and execute business rules and underwriting rules that are separate from the core program code. Carriers should assess the ability to reuse and share rules. Some tools are extremely intuitive and use natural language; others require knowledge of scripting. Some have visualization tools that allow a carrier to use a Visio-like tool to build business rules. Some solutions include a searchable and version-controlled rules repository. A few solutions offer tools to help carriers conduct impact analysis of the rules or traceability tools to help them understand how and when rules are being used. Since many carriers create hundreds or thousands

of rules, there should be a strong rules management environment with a well-organized repository, version control and version storage, etc.

Data: Data is more and more important for carriers, and software vendors are acknowledging this by building in more tools to help carriers with their data needs. Some solutions deliver a certain number of extra fields that users can modify for their own use. More common are configuration tools that allow the easy creation of data elements, including the ability to mask data, encrypt data, add context-specific help text, and also allow for modification of the data model. Self-documenting data dictionaries are available. Some solutions come with an ODS out of the box and may even include a data warehouse with the appropriate ETL tools. Most solutions are built on an industry standard model such as ACORD.

Release management: Some solutions include workflow capabilities to handle the release management within the policy admin system. Some feature full ticket management. Look for the ability to package a group of changes or filings together that you can manage as a release, as well as the ability to assign and track the work packets.

Versioning and change control: Versioning and update management is a critical component for a policy admin system. Rating plans may be used for new business on one date and a different date for renewals. Effective dates may differ by jurisdiction or product. Look for multiple date-management capabilities, for example, new, renewal, effective, available, expiration, and so on.

The easiest solutions to use are those that have fields to enter the type of date and the actual date by product or state. Some tools require the developer to enter the date in XML. These are harder to audit.

Tools are available in some solutions that allow for auditability of versioning, and version comparison reports come out of the box for some solutions. And, of course, look for controls to manage concurrent changes on a release, e.g., locking out changes when another is working on it.

Change control functions include the ability to track and document changes that are made, who made the change, and the reasons for making the change. Some automatically document the activity and changes to allow for easy traceability. Some include the ability to see which fields, formulas, and tables are being used.

As systems use more real-time data enrichment and models in their pricing, version and change control will increase in complexity, as will audit requirements from regulators. These capabilities may start to stretch into models and integrations that support changes in the products.

Security: Security is becoming increasingly important to insurers, especially as policy administration solutions are frequently accessed by web quoting applications. Ask about the security standards the vendor complies with and which certification and assurance methods are used. Take a look at how the system handles security for managing APIs for application-level integration. While many policy admin systems don't need to be PCI compliant, some are. Look at which authentication capabilities the system leverages for internal and external users. There is a broad range of capabilities, ranging from one-time passwords, security tokens/PINS, multifactor authentication, and federated identity support up to biometric security support. With regards to cybersecurity, look for whether the software has penetration security and how the system has been tested.

Scalability: While we typically think of scalability in terms of the number of policy transactions, or the number of users, an additional area to examine is how the system

handles multiple locations or vehicles on a policy. Performance as the system scales is another important consideration.

Integration: Policy administration systems integrate to large numbers of third-party systems and external data sources. Most solutions have been designed with a service-oriented architecture and have a variety of ways of handling integration, with many settling on the use of RESTful APIs as the common standard. Most systems have some kind of accelerator, or experience integrating to the most common third-party data sources and the most common general ledgers. With the rise of insurtech, new data platforms, and the position of rating as a participant in a wider ecosystem, fast integration capability will be a deciding factor in insurers' agility.

Implementation: Vendors use a wide variety of implementation methodologies. Some prefer to handle all of the implementation themselves. Others prefer to work with third-party system integrators. More and more vendors are moving to an agile or hybrid methodology. Look to see what methodology the vendor uses and how it aligns with your own preferred methodology. Some vendors are very good at helping carriers transition to an agile approach. Look for the artifacts they have available for gathering requirements documenting the product architecture and capturing the business rules. Vendors claiming very fast implementation timeframes may indeed have better artifacts and more configurable solutions, or they may be touting very simple single product implementation with little or no configuration. Be sure to do customer reference checks to understand how well the vendor handles project management, knowledge transfer, and scope creep with carriers of a similar size and complexity as your company.

Cloud: Few technologies are as talked about as cloud computing. Cloud-enabled solutions are on the rise, with most of the responding vendors reporting that they have cloud-enabled core systems. When it comes to the term "cloud," there are many different variations available. Most vendors offer a hosted version of their software. The software is licensed by the carrier and is hosted by the vendor either in its own data center, in a private data center like Rackspace, or in a public data center like Amazon or Microsoft. Look for the level of managed services available if you are interested in this option. Figure 1 shows the mix of deployments by vendor. It is clear that public cloud is a popular option among the install base.

SUITE CAPABILITIES

Celent has limited the definition of a PAS to include a set of core processes and key supporting capabilities. However, vendors do not necessarily limit their definitions of a PAS in the same way, and many have attempted to build out some or all of the end-to-end components that an insurer might need. Some insurers are just looking for a best-of-breed PAS to work with other core systems already installed, but other insurers may be looking for a vendor who can offer broad solutions for multiple areas of their insurance operations.

Some of the additional end-to-end components defined here are also listed as core processes of the PAS. This is not a contradiction. A vendor might bundle a component with their PAS (for example, rating), but also consider it (and also sell it as) a separate, stand-alone product. Alternatively, a vendor might provide a basic level of functionality in one area, but also have an upgraded, higher-cost product or an ISV partnership with a different vendor to provide an advanced solution (e.g., document creation).

In order to help insurers with their comparison of different solutions, each profile in this report has a table summarizing whether the vendor in question offers one or more of the following end-to-end components and whether the components are part of the base offering or sold as a stand-alone system. We use the description "Yes—integrated into the policy admin module" to mean that the functionality is part of a monolithic code base. We use the description "Yes—separate module available from this vendor" to mean there

is a separate module available that has been integrated with the policy administration system.

SUITE	AVAILABILITY
CLAIMS ADMINISTRATION	A system to record and transact all matters relating to a claim from first notice of loss through final settlement.
BILLING	A system to create invoices and handle collections from producers and policyholders. It typically handles basic commission processing as well. It may include deductible billing.
CRM	Allows the aggregation of data on a customer or at an account-level view and provides utilities that streamline the communication and management of customer data. Typically includes lead management and campaign management in addition to tracking the demographics of the customer.
REINSURANCE	A system to record any reinsurance contract related to a policy or set of policies and a claim or set of claims. The solution typically will calculate the bordereaux, manage inurements, calculate claims reimbursements, and manage the financial and reporting interactions with reinsurers and brokers including commissions.
RATING ENGINE	A stand-alone rating engine should be capable of handling complex pricing algorithms and should integrate easily with multiple policy administration systems. They typically include more robust rate analysis tools and can usually operate on a headless basis if required.
DIGITAL TOOLS	Digital tools can be thought of as software or applications that augment the core system to provide additional digital capabilities. For example, chat bots, digital marketing tools, and video communication would all be considered digital tools.
DISTRIBUTION MANAGEMENT	A system that manages the compliance aspects of agency management, including onboarding of agents and tracking the licenses and appointments as well as complex compensation transactions across multiple policy administration solutions, including incentive compensation.
BUSINESS INTELLIGENCE	Designing, storing, and accessing reports ranging from simple lists to multidimensional calculated variables. In general, reports are used to monitor activities by a user and by all levels of management. Tools generally allow standard reports with scheduling tools and ad hoc reporting.

SUITE	AVAILABILITY
ETL TOOLS	ETL tools allow any organization to extract data from numerous databases, applications, and systems, transform the data into a usable format, and load the data from all of these sources into a single database, data mart, or data warehouse for reporting, analysis, and data synchronization.
DATA HUB	A data hub is a centralized service that connects an insurer's IT system, including core systems, IoT devices, web applications, IoT devices, or other applications in use. The data hub manages the connections to each of the systems and orchestrates the data flow among them.
DATA WAREHOUSE	A data warehouse is a system that pulls together data from many different sources within an organization for reporting and analysis.

Source: Celent

REPORT METHOD

CRITERIA FOR INCLUSION

Celent actively reviews vendor systems in the insurance software market. Some solutions qualified for profiles that include customer references and a Celent opinion of the solution. These solutions are also ranked in the ABCD Vendor View.

Celent's ABCD Vendor View analysis is used to highlight vendors that have attained success selling their systems in the North American market. In general, in order to have a full profile and be included in the ABCD Vendor View grids, a policy administration solution had to have:

- At least one new sale to one new customer in the region within the last 24 months.
- At least three live customers per region, at least one of which must be an insurer.
- Participation by at least three reference customers.

There are 14 solutions that meet these criteria and are included in this report with ABCD profiles.

Even if a vendor is not included in the ABCD Vendor View, Celent provides a system profile of many other solutions. Solutions that did not qualify to be ranked in the ABCD Vendor View do not include a customer reference or a Celent opinion. There are 17 solutions that meet these criteria and are included in this report but are not included in the ABCD Vendor View grids.

It is important to note that the information available in this report is also available through Celent's online resources. Prior to relying on the information for a particular vendor, Celent suggests reviewing their online company and product profiles, which may be more current.

ABOUT THE PROFILES

Each profile is structured the same way. Profiles present information about the vendor and its policy administration system offerings, its geographic presence, and its client base. Charts are used to provide more detailed information about specific features such as lines of business supported, technology, and partnerships.

The profiles are presented in alphabetical order.

LIMITATIONS

Celent believes that this study provides valuable insights into current offerings in policy administration solutions. However, readers are encouraged to consider these results in the following context. The vendors self-reported. Participants in the study were asked to indicate which policy administration capabilities are provided in addition to providing generic information about their client base. While this information was supplemented with publicly available information where possible, Celent did not confirm the details provided by the participants.

EVALUATION PROCESS

To analyze the capabilities of policy administration solutions that are active in the insurance marketplace, Celent sent an invitation to participate in this year's report to a broad set of PAS vendors. There was no cost for vendors to participate.

Each participating vendor completed an online RFI in Celent's VendorMatch/RFX platform. The RFI requested information about the features provided in the solution, the technology and architecture, the current client base, the pricing models, and the vendor itself. RFIs were completed on 31 products for North America.

After Celent received completed RFIs from the vendors, each vendor was evaluated for meeting the criteria for inclusion in the ABCD Vendor View analysis. Those vendors that qualified for Celent's ABCD evaluation provided a briefing and demo for Celent focusing on usability and functionality for everyday users; product and rules configurability for IT and system administration users; and the overall architecture of the system.

Celent also asked references provided by each vendor in the ABCD Vendor View analysis to complete an online survey in order to obtain their view of the system's business and technology value.

The RFIs, the demos/briefings, and the reference surveys provided quantitative and qualitative data that was used in the ABCD analysis of these vendors. This process is described in the next section.

Vendors had an opportunity to review their profiles for factual accuracy and to provide their own perspectives but were not permitted to influence the evaluation.

Some of the vendors profiled in this report are Celent clients, and some are not. No preference was given to Celent clients for either inclusion in the report or in the subsequent evaluations.

A detailed list of vendors profiled in this report is shown in Table 2. Vendors with full profiles are ranked in the ABCD Vendor Views. Table 2 details the vendors, which lines of business are in production at one or more P&C North American insurers, and the type of profile in the report.

It should be noted that although a particular system is shown as implemented in only one major line, it still may be capable of supporting both commercial and personal business. For example, an insurer looking for a personal lines solution may wish to contact a particular commercial lines vendor because of that vendor's technology or delivery capabilities.

CELENT'S ABCD VENDOR VIEW

Celent has developed a framework for evaluating vendors. This is a standard representation of a vendor marketplace designed to show at a glance the relative positions of each vendor in four categories: **A**dvanced and agile technology, **B**readth of functionality, **C**ustomer base (i.e., relative number of customers), and **D**epth of client services. The Celent Vendor View shows relative positions of each solution evaluated and does not reflect an abstract evaluation. Each vendor solution is judged relative to the others in the group.

While this is a standard tool that Celent uses across vendor reports in many different areas, each report will define each category slightly differently. For this report, some of the factors used to evaluate each vendor are listed in Table 3. Celent's view of the relative importance of each factor and of the solution and vendor's capabilities also contributes to the final rating.

Table 2: Examples of Possible Factors Used in Celent Policy Administration System ABCD

ABCD CATEGORIES	POSSIBLE FACTORS
ADVANCED TECHNOLOGY (AND FLEXIBLE TECHNOLOGY)	Platform and codernity (Code base, platform, databases, localization capabilities, etc.)
	UI (ease of use, mobility)
	Data and adaptability/extendibility (openness of application, code base, data model, etc.)
	Integration (web services, APIs, reference comments)
	Scalability and cloud (cloud readiness, largest installations, etc.)
	Ease of change (change tooling, debugging capabilities, etc.)
BREADTH OF FUNCTIONALITY	Functions and features provided in base offering
	In production lines of business and number of deployments for each
	User experience
CUSTOMER BASE	Number of live insurers using the system for personal, commercial, or specialty lines of business
	New client momentum
DEPTH OF CUSTOMER SERVICE	Size of professional services and support team in region
	Insurers' post-implementation experiences

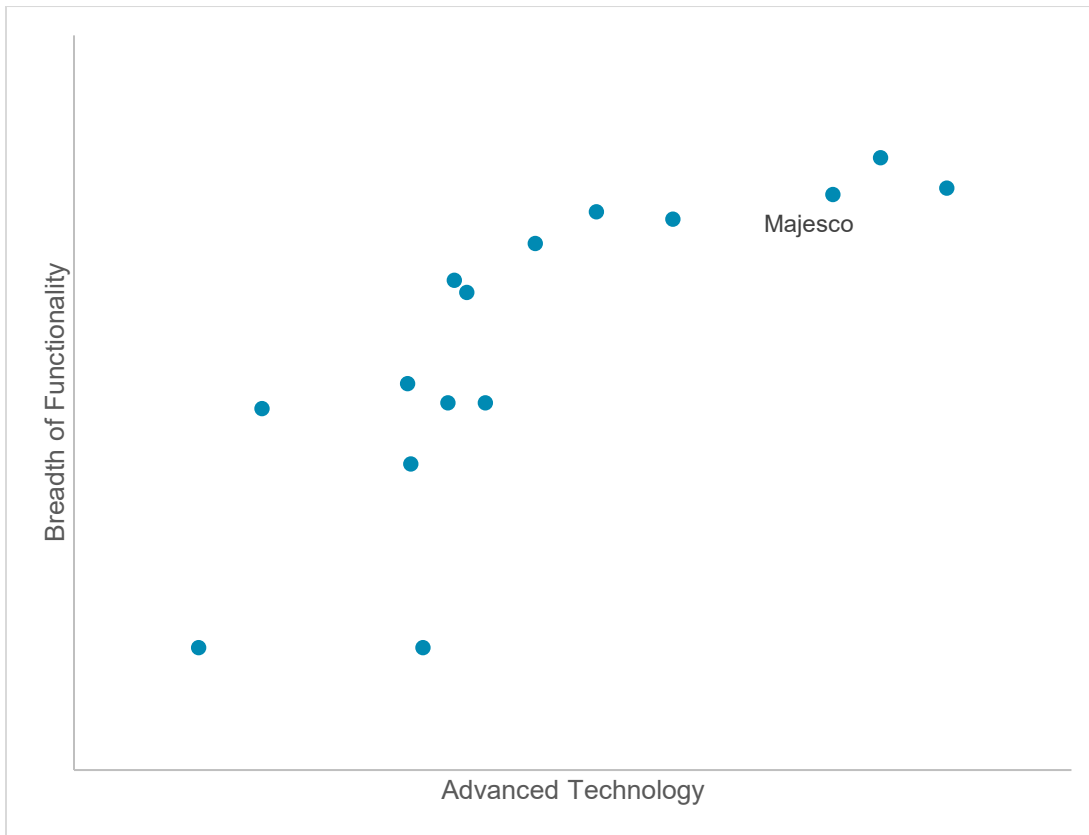Source: Celent

THE XCELENT AWARDS

Within this framework, the top performers in each of the ABCD dimensions receive a corresponding XCelent Award:

- XCelent Technology for the leading Advanced Technology score
- XCelent Functionality for the leading Breadth of Functionality score
- XCelent Customer Base for the leading Customer Base score
- XCelent Service for the leading Depth of Service score

XCELENT TECHNOLOGY AND XCELENT FUNCTIONALITY

Figure 2 positions each vendor along two dimensions: the vertical axis displaying the relative rankings for Advanced Technology and the horizontal axis showing relative Breadth of Functionality rankings.

Figure 1: XCelent Technology and XCelent Functionality

Source: Celent

XCELENT CUSTOMER BASE AND XCELENT SERVICE

Figure 3 positions each vendor along two dimensions: the vertical axis displaying the relative level of depth of customer service and the horizontal axis displaying the relative customer base. The XCelent Depth of Service award goes to Majesco.

Figure 2: Customer Base and Depth of Customer Service
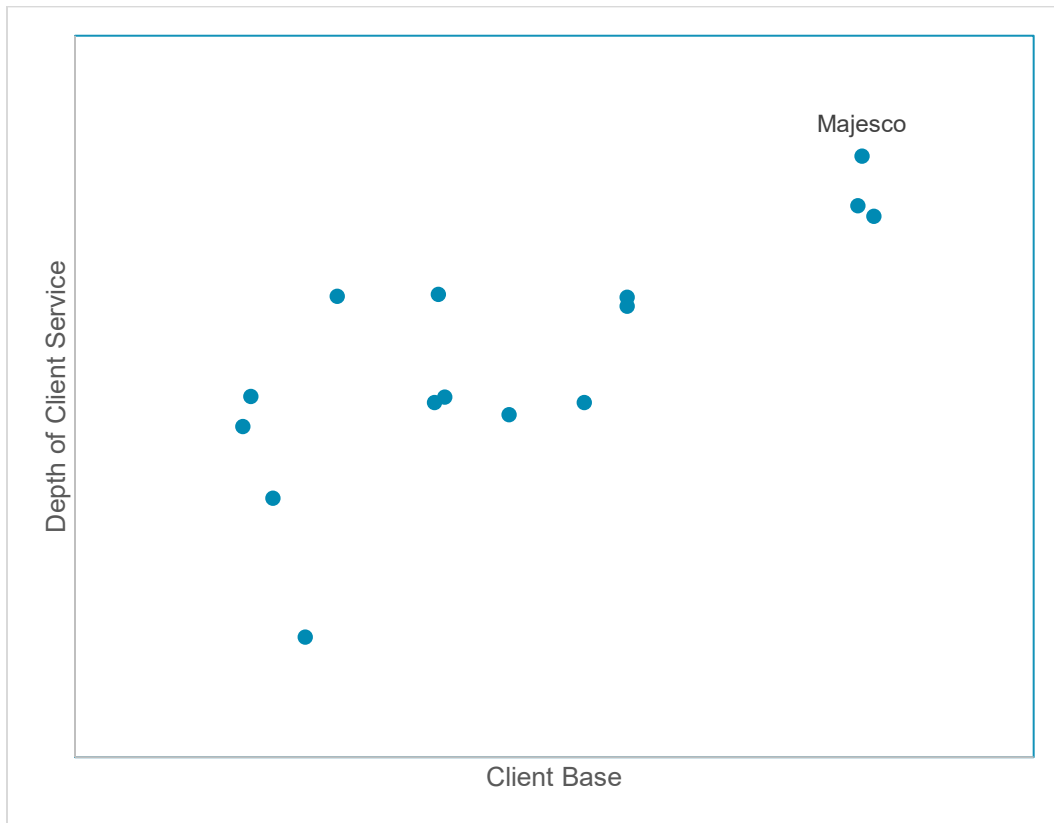
Source: Celent

Celent advises insurers to consider past vendor results but not to compare the placement of vendors in the charts from prior years, because not only is the market changing, but so has our analysis. The criteria used to determine the A, B, C, and D rankings in this report are broadly similar, but not identical, to the criteria used in the previous Celent PAS vendor report published in 2018. For example, in this report, we are considering new criteria in Advanced Technology related to microservices and integration approaches. The market is also evolving due to acquisitions and partnerships, solutions development, and alternative delivery models.

We suggest that insurers consider their specific needs and each vendor for what it offers. Although they are very successful in one or more of the criteria, the XCelent Award winners may or may not be the best match for an insurer's specific business goals and solution requirements.

VENDOR PROFILES

ABOUT THE PROFILES

Each of the profiles presents information about the vendor and solution; professional services and support capabilities; customer base; functionality and lines of business deployed; technology and partnerships; and implementations and cost. If a system was included in the ABCD Vendor View analysis the profile also includes customer feedback and Celent's opinion of the system in regards to usability, product configuration, and workflow abilities as well as summary comments.

The profiles also include a list of in production and supported lines of business and a table showing specific functionality capabilities. Additionally, the profiles include a table of technology options.

If included in the ABCD Vendor View analysis, the vendor's reference feedback gathered through the use of an online survey is presented in the profile. Customer feedback sections include a diagram that displays the average ratings given to the vendor in five categories. Each average rating includes up to eight underlying ratings shown in Table 4 scored by the customer on a scale of one to five, where one means poor and five is excellent. Open-ended comments regarding the system and the vendor are also included in the feedback section.

Table 3: Customer Feedback Ratings

DIAGRAM AVERAGE (QUESTION ASKED)	RATINGS INCLUDED IN AVERAGE*
FUNCTIONALITY (How would you rate the features and functions you are currently using?)	New business quoting/issuance
	Underwriting support
	Policy transactions—endorsements, renewals, cancellations
	Excess layers and reinsurance
	Product design tools
	Rating and rate calculations
	Underwriter desktop
	Underwriter assignment
	Document creation
	Document management
	Multi-channel capabilities—e.g., portal, mobile, etc.
	Supervisory tools (e.g., ability to assign work, vacation rules, etc.)
	Workflow/task generation
	Notes, diaries, calendaring
	Reporting, business intelligence
	Statistical reporting (e.g., ISO)

USER EXPERIENCE	End users—e.g., underwriters or underwriting assistants
(Do the following users find this system easy and efficient to use? Using a 1 to 5 scale, where 1 is very difficult to use and 5 is very easy to use.)	Supervisors/managers
	Actuaries
	IT staff
TECHNOLOGY	Ease of system maintenance
(How would you rate the technology of this solution on a scale of 1 to 5, where 1 means very poor and 5 means excellent?)	Flexibility of the data model
	Scalability of the solution
	Vendor's timing in improving technical performance through new releases and fixes
	Configurability of the solution
	Overall satisfaction with the technology
IMPLEMENTATION	Responsiveness (handling of issue resolution)
(If you are familiar with the original implementation of this system at your company, how would you rate this vendor in the following areas?)	Project management (estimations, scope creep, etc.)
	Implementation completed on time
	Implementation completed on budget
	Knowledge of your business
	Knowledge of their solution and relevant technology
	Continuity with the implementation team—did the core team stay engaged through to implementation?
	Overall project success
SUPPORT	Responsiveness (handling and speed of issue resolution)
(After implementation, how would you rate the vendor's professional services staff in the following areas?)	Project management (estimations, scope creep, etc.)
	Work completed on time
	Work completed on budget
	Knowledge of your business
	Knowledge of their solution and relevant technology
	Communication—proactive communication of issues and changes
	Staff turnover
	Consistently meeting service level agreements
	Roadmap delivery
	Customer feature requests heard and responded to
	Overall quality of professional services

Source: Celent
*Scale 1 to 5, where 1 is poor and 5 is excellent. Not applicable or no opinion not included in average.

Concerning implementation costs and fees, Celent asked vendors to provide first-year license and first-year other implementation costs (work by the insurer, vendor, or third parties) for two hypothetical insurance companies:

- Insurance Company A, a small insurer, with a direct written premium (DWP) of US$250 million.

- Insurance Holding Company B, with four operating companies, writing multiple lines of business in five or more states, with a total combined direct written premium (DWP) of US$2.1 billion.

When discussing insurance customers of the various solutions, the profiles may use the terms very small, small, medium, large, and very large insurers.

- Very small insurers (tier 5) have under US$100 million in annual premium

- Small (tier 4) have US$100 million to $499 million

- Medium (tier 3) have US$500 million to $999 million

- Large (tier 2) have US$1 billion to $4.9 billion

- Very large (tier 1) have US$5 billion or more.

MAJESCO: MAJESCO POLICY FOR P&C

XCELENT **Awards 2020** - Depth of Service

COMPANY

Majesco is a public company headquartered in Morristown, New Jersey with sales and professional services personnel located throughout NA, EMEA, APAC, and LATAM. The company has 2,350 employees, of whom 400 are available to provide professional services/client support for their Majesco Policy for P&C solution. 170 are physically located in North America.

The roadmap for Majesco Policy for P&C includes enhancements that get prioritized for development based on client and industry needs and trends. They have monthly releases. Majesco uses a combination of primary research, secondary research, customer engagement, advisory board engagement, and analyst engagement to identify key trends within the insurance industry. Majesco's product council engages customers and seeks input on trends, validates the product roadmap, engages in online discussions using a client discussion forum, and suggests adoption of key trends.

Majesco spends 15-20% of annual revenue on R&D each year. Majesco does not break down budgets by product. Policy is one of the key investment areas for R&D.

The vendor offers an annual user conference or customer event as well as two product council meetings throughout the year. The vendor states they have had no legal issues or bankruptcy issues.

Table 212: Company Snapshot

YEAR FOUNDED	1982
NUMBER OF EMPLOYEES	2,350
REVENUES (USD)	Total corporate revenue: USD $140 million end of FY19 Product revenue: Majesco does not report revenue by product
FINANCIAL STRUCTURE	Public company NASDAQ (MJCO); Bombay Stock exchange (BSE), India, Majesco Ltd; National Stock exchange (NSE), India, Majesco Ltd

Source: Majesco

Table 213: Product Snapshot

NAME	Majesco Policy for P&C
YEAR ORIGINALLY RELEASED/DEPLOYED	1992/1992

CURRENT RELEASE AND DATE OF RELEASE	Version 11/April 2020 monthly update
UPGRADES	Client can skip multiple versions (e.g., go directly from version 4.0 to version 7.0).
	They support current versions and up to two prior versions.
	Monthly automated upgrades are provided for software, rates, rules, and forms
TARGET MARKET	Insurance carriers across all tiers and regions including greenfield initiatives and start-up carriers.
INSTALLED BASE	North America: Canada: 1, United States: 58
	LATAM: Mexico: 1
NEW CLIENTS SINCE 2017	North America: United States: 16
	LATAM: Mexico: 1
	EMEA: EM 2
NOTABLE CLIENTS	QBE, Norfolk & Dedham, Ategrity, Urban Advantage
REVENUE FROM PRODUCT/SERVICE	Majesco does not report revenue by product
FTES PROVIDING PROFESSIONAL SERVICES FOR PRODUCT	550
USER CONFERENCES/PRODUCT WORKING GROUPS	The vendor offers an annual user conference or customer event as well as two product councils throughout the year.

Source: Majesco

CELENT OPINION

Majesco Policy is a well-established policy administration solution. The home screen for underwriters and policy service representatives provides a task-oriented activity center, recent records, and tabs for insureds, transactions, and lists.

Built on a modern architecture, the system is highly configurable. The configuration environment includes tools to manage the product attributes, rules, rating, and documents. The solution currently does not include event-driven workflow, but simulates it with screen flow and diaries. The configuration tool is very granular, providing a carrier with lots of flexibility. It could be used by business for some aspects but generally requires more technical skills.

The business components of the system are available as independent services. The business components provide the business functionality independent of the user interface and it is agnostic of the technology accessing the services.

The Majesco Configuration Toolset provides an out-of-the-box ticket management process to provide electronic inventory of all configuration changes that are made and to provide complete auditability and governance.

The solution is in use primarily for commercial and specialty lines including workers' comp, but has been expanding its support for personal lines. One of its strengths is the provision of preconfigured content for all rates, rules, forms, taxes, fees, surcharges, etc.

for 52 jurisdictions. Majesco also provides automated updates of this data for its base products every month as part of Majesco Bureau and Content Services.

For deployments in the cloud on Majesco CloudInsurer® and its cloud services ecosystem, they can deploy in Microsoft Azure, Amazon AWS, and IBM Cloud/Bluemix. The services such as operations support, platform support and release management are included as a part of cloud subscription fee.

Majesco shows strong sales momentum with 17 new deals in the last two years. Their client base spans all tiers from the largest carriers in the world to small MGAs and startups. Their pricing model is flexible enough to accommodate the different needs of these different insurers.

Majesco was one of the first vendors to create a curated digital ecosystem of partners and Insurtechs. Digital1st Insurance® is the microservices based digital platform used for integration and orchestration (and available as a separate application). The Digital1st EcoExchange® includes apps from insurance ecosystem partners under a single platform. Although it seems to have fewer partners than others, it is primarily populated with data and insurtech partners—not the traditional application partners that are often found in other vendor systems.

Celent sees this as a strong solution, especially for commercial and specialty lines carriers with configuration tools to build additional functionality as needed. Carriers with a focus on commercial will appreciate the deep knowledge of ISO that shows in this product.

OVERALL FUNCTIONALITY

Majesco offers the following modules in the core system application. Majesco Policy for P&C is available on a standalone basis.

Table 214: Component Snapshot

SUITE	AVAILABILITY
BILLING	Yes—separate module available from this vendor
CLAIMS	Yes—separate module available from this vendor
CRM	No
REINSURANCE	Yes—through a formal partnership with another vendor
RATING ENGINE	Yes—integrated into the policy admin module
DIGITAL TOOLS	Yes—integrated into the policy admin module
DISTRIBUTION MANAGEMENT	Yes—separate module available from this vendor
BUSINESS INTELLIGENCE	Yes—separate module available from this vendor
ETL TOOLS	Yes—integrated into the policy admin module
DATA HUB	Yes—separate module available from this vendor
DATA WAREHOUSE	Yes—separate module available from this vendor

Source: Majesco

OVERVIEW

Majesco Policy for P&C is a configurable and business rules-driven policy administration management system. The solution includes built-in content, including ISO rates, rules, and forms. It has automated monthly updates of both content and software, including pre-integrated bureau content and the ability to interpret and make circulars available for consumption directly into the system. Majesco Policy for P&C integrates with partners from their EcoSystem that provide innovative capabilities using technologies like chatbots, video, internet of things, virtual reality, and more.

The figure below shows Majesco's functionality and the production status of key features for policy administration and servicing (PAS) systems.

Figure 52: Key Functionality

Function	In Production with Clients	Supported but Not in Production with Clients	Not Supported
Desktop			
User desktop/workbench	●		
Policy detail overview	●		
Can display flags and alerts on policies	●		
Data Services			
Upload ACORD app	●		
Integration and prefill with third-party data	●		
Can upload or import data from Excel (e.g., locations, drivers)	●		
Documents			
Includes a correspondence and forms library	●		
Automated rendering of forms and correspondence	●		
Can attach documents, emails, phone calls, or notes	●		
Includes a content repository and document management	●		
Notes			
Includes a notes facility	●		
Can search text within notes and diaries	●		
Other			
eSignature			●
Consumer portal	●		
Agent portal	●		
Supervisory tools			
Escalation based on authority	●		
Dashboard to manage employee's workload	●		
Underwriter/adjuster assignment			
Automated underwriter assignment	●		
Out of office/vacation rules	●		
Workflow			
Automatic task generation/workflow	●		
Quote			
Multiline, multi-location rating on a single quote or policy	●		
Supports non-binding quoting (quick quote) functionality that only includes rating/risk acceptability-related questions	●		
Side by side quotes			●

Function	In Production with Clients	Supported but Not in Production with Clients	Not Supported
Underwriting			
Automated STP underwriting	🟢		
Includes underwriting analysis tools such as loss analysis	🟢		
Consolidated view of all policies of a single policyholder	🟢		
Endorsements, Renewals and Other Transactions			
Supports automated cancellations	🟢		
Handles out of sequence endorsements	🟢		
Supports automated renewals	🟢		
Excess, layers and reinsurance			
Can document the layer, coverage, and limits when other insurers are also covering parts of the total exposure	🟢		
Can indicate any reinsurance contracts which apply	🟢		
Product Design Tools			
Base insurance product (templates)	🟢		
Inheritance of product and rating rules	🟢		
Rate Calculations			
Supports complex rating algorithms	🟢		
Can use third-party data gathered real time as an input to the rate calculation	🟢		
If legal in client's territory, the system provides price optimization features	🟢		
Rating Maintenance			
Rate table design and update management tools	🟢		
Testing, modeling and analysis tools			
Includes testing, modeling and product analysis tools	🟢		
Versioning and Change Control			
Versioning and update management	🟢		
Expiry mechanism for products to ensure that quotes are up to date	🟢		
Change control functions	🟢		

🟢 = Available out of the box   🔵 = Configurable through a scripting language/coding   ⚫ = Under development/on roadmap

🔵 = 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: Majesco

INTERNATIONALIZATION

Majesco can support multiple currencies. They currently have the US dollar and Mexican peso in production and the British pound is in development. The solution supports multi-lingual capabilities as part of the application (English (US), English (CA), French, Spanish, etc). The system can be configured to handle all languages and does not have any restrictions. The user can select language preference at any point in time of application usage. Multi-lingual capabilities are demonstrated at all the field labels, drop downs, allowed values, numeric and date fields, error messages, etc.

CUSTOMER BASE

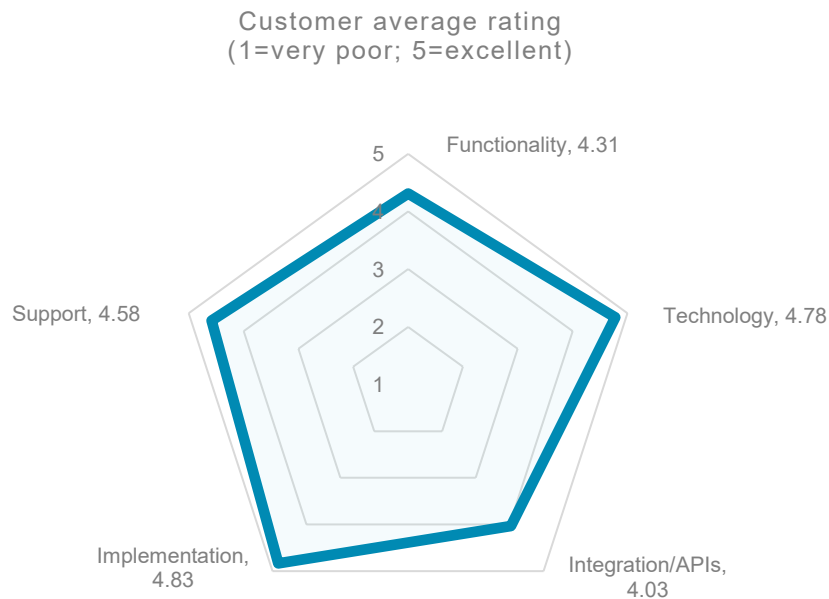Majesco has 60 total customers globally.

Geographic Distribution

Insurer Type Distribution

Line of Business Distribution

Deployment Type Distribution
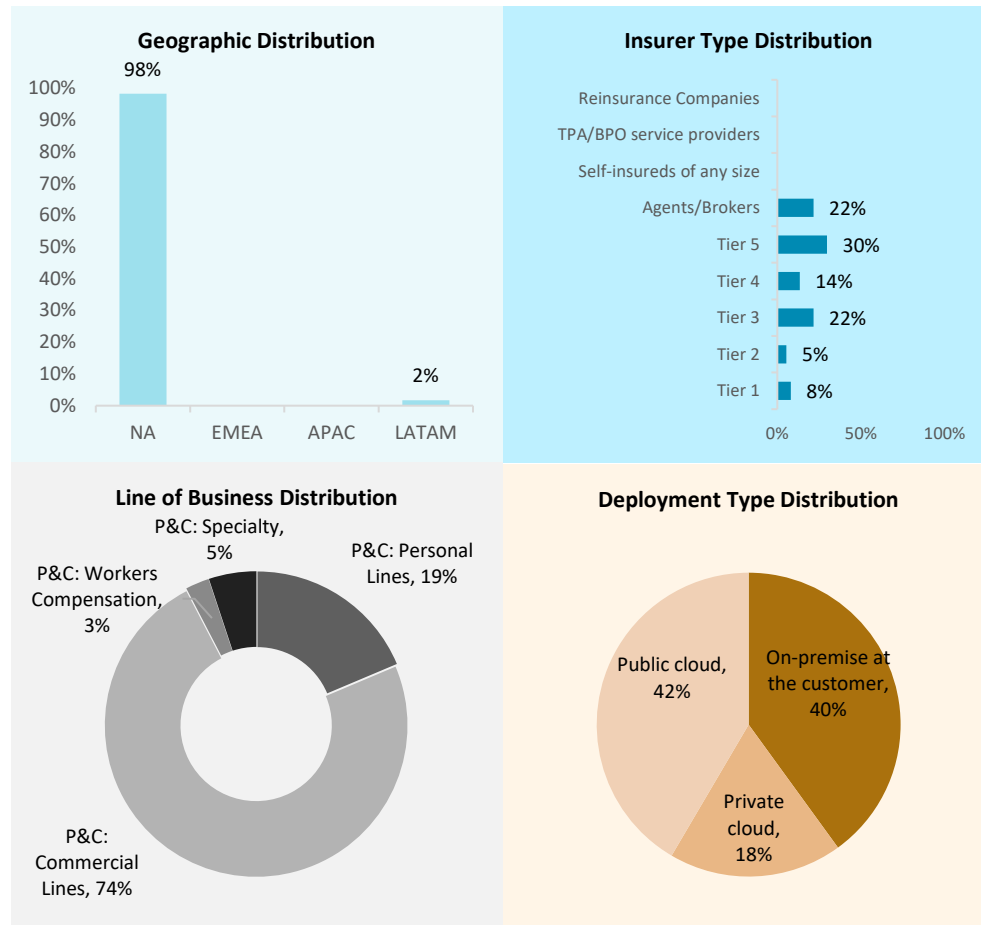
Source: Majesco

CUSTOMER FEEDBACK

Customer average rating
(1=very poor; 5=excellent)

Source: 2019/20 PC PAS Customer Feedback Survey

Three clients provided feedback on Majesco. Two systems are deployed on the public cloud and the third system is deployed on a private cloud. One client has used the system for three to five years and two have used it for one to three years. One client is using the system for all or mostly commercial lines, specialty, and E&S, another client is using it for specialty and E&S, and the third client is using it for all or mostly commercial lines.

Clients rated Majesco favorably overall. For functionality, respondents scored new business quoting, endorsements and other transactions, document generation, and rating very high. They also appreciated the product design tools features. Within technology, every client scored every category either a four or a five—the highest scores available. Every respondent gave the scalability and configurability of the solution a five. While one insurer gave relatively low marks for integration, the others scored it quite high.

Regarding their implementation experience, insurers scored Majesco very high in all categories. Responsiveness (handling of issue resolution) received the highest mark. Finally, in the area of ongoing system support, all categories received very high scores. Responsiveness (handling and speed of issue resolution) received the highest score.

When asked what they liked best, one client noted the system's broad functionality and that it supports many LOBs. Another client noted the system's ease of use, the configurability of the system, and the digital upgrades. The third client noted the speed and overall look of the system as well as the vendor's continual take on their feedback. "I would like to give a 4.5 for this system. It is much more controlled (UW Authority), has faster speed to market, and an overall better look and feel solution then what we have had in the past. They work really hard to make sure we are satisfied as customers. They continually take our feedback and work on providing us the things we need."

Suggested improvements included the system's UI. Another client suggested improvements in the form of a task manager and that the vendor to do more testing with the integrated systems.

Overall, clients were happy with the solution and gave Majesco an overall average score of 4.5 out of 5.

LINES OF BUSINESS SUPPORTED

Table 215: LoB Support

P&C LOBS	AVAILABILITY
Personal Auto	✔
Homeowners/Home	✔
Renters/Contents	✔
Umbrella	✔
Commercial Auto	✔
Commercial Property	✔
Commercial Liability	✔
Workers' Compensation	✔
Medical Professional Liability	✔
Other Professional Liability	✔
Business Owners Policy (BOP)	✔
Surety and Fidelity	✔
Excess Policies	✔
Directors And Officers Liability	✔
Other: On-demand products including rideshare, agriculture; Cyberliability	✔

Legend: ✓= Supported and in production; ⊖ = Supported but not in production; **X** = Not supported

Source: Majesco

TECHNOLOGY

Majesco Policy platform is based on the Java/J2EE technology stack with an n-tiered architecture. The presentation layer is a true thin client, is HTML5 based, and can be accessed using industry standard browsers supporting HTML5.

The business components of the system are available as independent services. The business components provide the business functionality independent of the user interface and it is agnostic of the technology accessing the services.

Majesco Policy's architecture is metadata-based but database driven. The approach helps the application with automatic generation or dynamic rendering of the user interface from the products defined in the metadata increasing speed to market of new products. While it is metadata-driven, the architecture does not compromise on relational data structure. This helps the system in taking advantage of benefits offered by relational database e.g., ease of data retrieval, data integrity, flexibility, and normalization amongst others.

The Java-J2EE technology-based system is supported with the Majesco Configuration Toolset. The toolset provides all-in-one capabilities to manage product configurations through plugins including screen design, rate plan and table management, business rules configuration, forms management, and workflow design. Every product automatically inherits the entire policy lifecycle including standard policy transactions (quote, endorse, cancel, rewrite, reinstate, etc.), issuance, and policy maintenance, in addition to producer management, commissions, payment plans, and forms management.

Some of the features provided in the Configuration Toolset are:

- WYSIWYG (what you see is what you get) screen design
- Business rules editor
- BPM based workflow modeler
- Integrated release management through controls driven ticketing workflow
- Integrated version control
- Integrated build and deployment tools
- Automatic data and object model management
- Authentication and authorization to provide access to configuration on per-user basis
- Separation of base and custom product content

Listed below are some of the key technological features for version 11:

- Native document management—Pre-integrated native document composition, generation, and storage modules with intuitive document authoring tools
- Open API and API gateway—700+ OAS3.0 compliant APIs covering all major P&C functions available over an enterprise gateway servicing all APIs with enterprise monitoring and servicing feature for Majesco CloudInsurer customer
- Ready-to-use Digital1st EcoExchange Capabilities—built-in integration and configuration capability to quickly integrate with any Digital1st EcoExchange partner apps without coding
- Enterprise security and data protection—user identity management with popular cloud identity providers with multi-factor authentication for added security measures as well as data protection compliance, which was implemented in version 11.

The primary UI for business users, developers, and configurators is 100% browser based, thick client using thin client delivery and provides a touch screen interface. The vendor does not have plans to change the framework in the future.

Technology details for Majesco Policy for P&C are provided in the table below.

Table 216: Technology Options

CODE BASE	Core technology: Java: 100%
OPERATING SYSTEMS	The system is implemented in Java
	The system is implemented in JEE
	JEE/Java version support: 1.8x
	Available operating systems: Unix—BSD, Unix—Linux, Unix—Other, and Windows
SERVERS SUPPORTED	The system uses/supports JEE servers Boss, WebLogic, WebSphere, other
DATABASES	Databases available: Oracle
INTEGRATION METHODS	Available integration methods: Web services, OAS3 compliant RESTful HTTP style APIs, JSON format, MQSeries, JMS or similar queue technology, custom APIs, flat files
	Public API integrations: Google Maps, Bing Maps
	The vendor does provide training for API integrations.
CORE CODE MODIFICATION	Core modifications are the exception to the rule.
	% of total cost from core code/development modifications in recent implementations: 0%
SCALABILITY	The vendor's largest deployment (total number of transactions processed daily by the system): 200000
	Scalability metrics: Majesco has a full featured performance lab equipped with a variety of profiling and bench marking tools. They use an industry standard load generator tool, Neoload, for creating concurrent Application UI load as well as Input SOAP transaction load. The tool creates structured report as part of test execution.
	Summary of scalability metrics based on their lab testing:
	Test duration—1 hour 15 min
	Maximum running users—150
	Average hits per second—7.71
	Average throughput (MB/second)—1.87MB/s
	Base data volume: 2 million
	Base data volume (no of policy)—468K
	CPU utilization of policy service servers during the run was between 0.63-2% and under 4%.
	CPU utilization of application server during the run was between 15.66—24.73% and under 34%
	CPU utilization of Db server during the run was between 25—52% and under 71% with one spike which reached to 95%
	The majority of the transactions are under permissible limit.
	Performance test hardware specification for each app and database:

Processor—Intel(R) Xeon(R) CPU E5-2683 v4 @ 2.10GHz, 2100 Mhz

Number of cores—8 Core 8 Logical Processor

Machine memory—32GB

System performance: Majesco Policy supports both horizontal and vertical scalability at both application server and database server level. Inherent system software supports scaling by means of 'clustering.' The platform's active-active (via hardware and/or software load balancers) deployment pattern in high availability environment is recognizable and enables higher availability and up time of the system.

They have a full featured performance lab equipped with a variety of profiling and bench marking tools. They use an industry standard load generator tool, Neoload, for creating concurrent Application UI load as well as Input SOAP transaction load. The tool creates structured report as part of test execution. Their performance engineers analyze the report and determine whether they are successfully meeting target performance, or the system needs some more tuning due to any customization or newly introduced client specific configuration.

They also have profiling infrastructure where they can profile the application in detail at each tier (App/DB/Network), determine the current bottleneck, and correlate it with the exact solution to fix the bottleneck.

Their performance lab runs performance assurance practice whereby they engage with the client to choose right sized hardware as per client's data center preferred platform choice and help conduct necessary benchmarks leading to guaranteed performance within client environment.

As a benchmark, Majesco Policy processes simple transactions in an average time of less than one second and transactions of medium complexity in less than three seconds.

DEPLOYMENT MODELS

On-premise at the customer, on-premise at the vendor/software provider, private cloud, public cloud

For deployments in the cloud, Majesco has a cloud services ecosystem. The services, which are included as a part of cloud subscription fee, include:

Help desk

• Help-desk support

• Incident management and triaging

Hosting and disaster recovery

• Data-center management

• Network connectivity and monitoring

• Backups management (including restore)

• Disaster recovery/failover

Operations support

• Application performance monitoring

• Cloud and infrastructure management

Support

	• Base application defects
	• Product releases and updates
	Platform support
	• OS, DB and app server administration
	• Configuration management
	• Load/stress testing
	• Ongoing hardware and software maintenance.
	Release management
	• Release management and deployments across multiple environments.
PUBLIC CLOUD OPTIONS	Public cloud options supported: Microsoft Azure, Amazon AWS, IBM Cloud/Bluemix

Source: Majesco

DATA

Majesco Policy's data model is proprietary in nature and marries a metadata approach with a database-driven approach. The data model has continuously evolved and matured, keeping pace with technological changes and industry and regulatory requirements. The data model has been developed using best practices and learning accrued from experience performing implementations of Majesco Policy.

Majesco Policy's data model is metadata-based but database-driven. The approach supports the application with automatic generation or dynamic rendering of the user interface from the products defined in the metadata. While being metadata-driven, the data model does not compromise on relational data structure, allowing the system to take advantage of benefits offered by relational database, e.g., data retrieval, data integrity, flexibility, and normalization.

The solution supports industry standard data model schemas. The system's integration layer can support ACORD based data exchanges. The database was designed from the ground up for this product. The data model is extendable to meet the needs of a customer's unique requirements. The extensions can be performed using the system's supporting Majesco Configuration Toolset.

They have adopted a metadata and table-driven product configuration framework to synchronize UI, business rules, and underlying data models in a single step by defining meta data. The table-based configuration of transactions accommodates any needed customizations. The data model can be released to the client, can be easily published to a client's data model, and can map to an intermediate format (such as an industry standard) to share with a client. Clients can change the model through the system's supporting Majesco Configuration Toolset.

All Majesco Policy releases are classified in two categories—base pack and custom pack (customer specific). Custom configurations, user defined entities, attributes, and code can be maintained separately while receiving updates for base content and custom content in Majesco Policy.

INTEGRATIONS

Majesco provides web services, OAS3 compliant RESTful HTTP style APIs, JSON format, MQSeries, JMS or similar queue technology, custom APIs, and flat files as integration methods.

Majesco P&C Core Suite is built using a service-oriented architecture, facilitating integrations with any application, whether it be an internal system, data warehouse, or external third-party system. Majesco provides interfaces for core functions and includes a set of defined APIs and SOAP/XML-based services to support key business workflows. Data can be exchanged in real-time or batch processes between applications using flat files, CSV files, XML and web-services/EAI.

APIs are documented; external systems can trigger an event in the system that 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; and an API developer portal is available for support and descriptions. The system allows API publishing in SOAP, REST, JSON, and XML style services as APIs. API version management is available. Majesco provides documentation and training for API integrations. External systems can trigger events in the system that can be responded to by a workflow or business rule. The vendor does provide training for API integrations.

Majesco APIs for P&C suite are open APIs designed and reviewed using Swagger-based tools. They are built and tested using an in house platform. The spec files are imported into development and testing tools to ensure they develop and test exactly what is designed. The APIs are hosted in a secure environment. They provide basic Auth for ease of testing and JWT for production usage. Majesco Cloud customers can additionally have the new OAS3 complaint APIs exposed through Microsoft Azure API Management. This provides accelerated deployment, monitoring, security, versioning, and sharing of APIs.

The table below shows available products pre-integrated with Majesco Policy for P&C.

Table 217: Insurance Pre-Integrations

INTEGRATION
NCCI: NCCI
Payment processing systems: Transcard, Cybersource, Authorize.net, One, Inc
Address verification tools: Pitney Bowes, Microsoft Bing, Smartystreets
Agency/broker management connectivity solutions (those that manage the data transfer between a carrier's systems and an agent/broker's systems): Majesco Digital1st
Agent portal software: Majesco Digital1st
Agent/broker management systems: Majesco Distribution Management
Analytics solutions: Majesco Business Analytics
Billing systems: Majesco Billing
Business intelligence systems: Majesco Business Analytics
Chatbots: Elafris, Majesco
Claims management systems: Majesco Claims
Distribution management systems (e.g., commissions and licensing): Majesco Distribution Management
Document creation systems: Majesco DocGen, Pitney Bowes
Document management systems: Majesco DocGen, Pitney Bowes eVault, ImageRight
eSignature systems: AssureSign
General ledger: SunGuard, SAP, DBS
OFAC systems: LexisNexis
Policy administration systems: Majesco Policy

Reinsurance systems: DataCede
Underwriting workbench/new business underwriting systems: Majesco Policy

CONFIGURATION

The Majesco Configuration Toolset provides an out-of-the-box ticket management process to provide electronic inventory of all configuration changes that are made and to provide complete auditability and governance.

The Majesco Framework provides auto build and deployment features that include:

- One-click deployment execution in a standalone mode or Suite-integrated with a continuous integration tool like Hudson/Jenkins or any scheduler
- QTP/Selenium enabled and deployable for automation test suite execution
- Automated regression test execution, and test results emailed to the team

Impact analysis support for developers is provided with WYSIWYG tools that are designed to help users understand the impact of change with appropriate validations and prevent changes without versioning.

Majesco Claims has multi-level security and audit logging capabilities and maintains a separate trail of audit logs encountered by the application in the appropriate application or database logs. The level of detail to be logged is configurable. It maintains information like username, date-time stamp, old-new values, etc. which can be viewed by the authorized users for reporting and auditing purposes. The system has the capability to obscure user IDs in the audit trails

All changes can happen without a restart of the server

Majesco upgrades or changes are deployed on a monthly basis and all the clients are notified in advance. The communications are typically done electronically via email to all the clients about any change in the application, including but not limited to API and services. Scripts do the majority of the upgrade tasks. Upgrades are automatically pushed on a monthly basis. Customers have the option to test the upgrades before accepting them, and it usually takes two weeks or less to test.

Table 218: Approach to System Changes

APPROACH TO SYSTEM CHANGES	AVAILABILITY
Business rule definition	Configurable using simple tools targeted for a business user
Data definition	Configurable using simple tools targeted for a business user
Table maintenance, list of values, etc.	Configurable using simple tools targeted for a business user
Interface definition	Configurable using tools targeted for an IT user
Product definition (insurance or banking products)	Configurable using simple tools targeted for a business user

APPROACH TO SYSTEM CHANGES	AVAILABILITY
Role-based security, access control, and authorizations	Configurable using simple tools targeted for a business user
Screen definition	Configurable using tools targeted for an IT user
Workflow definition	Configurable using tools targeted for an IT user

Source: Majesco

SECURITY

Majesco complies to security standards provided by ISO, SOC1, and SOC2. One-time passwords, multi-factor authentication, and federated identity support are available as authentication factors for internal and external users.

For cybersecurity arrangements, Majesco is certified with the ISO 27001:2013 standard and their information and data security initiatives are in line with the ISO 27001:2013 standard.

Some of the major controls implemented are below:

- A logically separate environment for development/ test and production for customer environments exists.
- All customer networks are logically separated using VLANs for segregation of networks.
- If required for testing purposes, dummy data is used in non-production environments.
- Role-based access is provided to authorized associates on a need to know basis.
- Media containing sensitive information are disposed of securely, and secure wipe tools are used for electronic storage media. All documents of a sensitive nature or that contain confidential information are shredded when they are no longer required.
- Network services and their use, firewall traffic, and IPS are monitored by Majesco for possible misuse and intrusions.
- USB drives are disabled to prevent any unauthorized information exchange/ loss.
- No portable external media (CDs, USB drives, any form of mass storage devices) are allowed inside the Majesco premises.
- CCTV cameras are installed at entry/exit points of the facility and in restricted areas like server rooms. The system is tested with periodic assessments for identification and remediation of technical vulnerabilities, run by an internal team for all the critical system, servers, and network devices at Majesco.

Penetration testing activity is performed by an independent third party on annual basis. The system has penetration security and Majesco has an in-house application security team of certified professionals. To effectively address an application's security vulnerabilities, they undertake application vulnerability assessment and penetration testing during product development and implementation. This includes comprehensive testing to discover vulnerabilities and to determine the risk index of the application.

The product platform undergoes two internal vulnerability audits per year. Each internal assessment will have a corresponding verification assessment within three months of the initial assessment. The first and third assessments are on an unhardened environment/application. The second and fourth assessments are on a hardened environment/application.

PARTNERSHIPS

TYPE OF PARTNERSHIP	PARTNER VENDOR
SYSTEM INTEGRATORS	Majesco has system integrator (SI) partners that manage the implementation in substantial deployment instances. Majesco has strategic partnerships with IBM, Deloitte, Capgemini, and other system integration partners for implementation of Majesco's core solutions. Resources from their strategic implementation partners are trained and certified on Majesco solutions.
CONVERSION PARTNERS	Not applicable
FUNCTIONALITY PARTNERS	Majesco has functionality partnerships with a number of vendors including Appulate, blueprint, calcfocus, datarobot, cybersource, Denim, DMS, Door3, Dropin, eGain, Elafris, Fenris, Fusion, HazardHub, iSign, ISO, LexisNexis, Life.io, MIB, PitneyBowes, Splice, Step Solutions etc. Majesco has a partner ecoexchange. Details of partners can be accessed here: https://www.majesco.com/digital1st-insurance/ecoexchange/
TECHNOLOGY PARTNERS	Microsoft Azure Cloud, IBM Bluemix
FINTECH PARTNERS	Majesco has fintech partnerships with a number of vendors including Appulate, cybersource, Denim, DMS, Door3, Dropin, eGain, Elafris, Fenris, Fusion, HazardHub, ISO, Life.io, etc. Majesco has a partner ecoexchange. Details of partners can be accessed here: https://www.majesco.com/digital1st-insurance/ecoexchange/
ACCREDITATIONS AND CERTIFICATIONS	None

Source: Majesco

IMPLEMENTATION, AND SUPPORT

FUNCTION	APPROACH
EMPLOYEES AVAILABLE /AVERAGE EXPERIENCE LEVEL (YEARS)	Majesco has a staff of 200 staff with an average of 8 years of experience providing professional services/client support for this solution. The average number of customers per professional services/client support staff is 8.33.
LOCATIONS OF EMPLOYEES	Majesco has employees in NA, EMEA, APAC and LATAM, with 170 in NA, 10 in EMEA, 10 in APAC, 10 in LATAM. If implementation resources need to be sourced from different countries, they apply specific rates by location.

FUNCTION	APPROACH
RESOURCE BREAKDOWN (VENDOR, CLIENT, SYSTEM INTEGRATOR)	Typical implementation team size: 6 to 10 75% vendor; 25% client; 0% SI
USE OF THIRD PARTIES	Majesco occasionally works with third-party system integrators. Conversion options: Majesco completes data conversions itself.
AVERAGE TIME TO IMPLEMENTATION	Initial implementation: one to three months Second and subsequent LOBs: one to three months Second and subsequent states/jurisdictions: one to three months
PREFERRED IMPLEMENTATION APPROACH	Majesco follows an Agile implementation approach

Source: Majesco

PRICING

Table 221: Pricing Models

PRICING MODELS AVAILABLE:	Pricing models available: term license, enterprise license, subscription-based license, other pricing model not listed
FACTORS USED TO DETERMINE PRICING	Usage-based factors: number of concurrent users, number of total or named users, per functional components/modules used, per transaction, policy or account volume, annual premium volumes/revenues Tier-based factors: functional components/modules, jurisdictions (states/provinces/countries) Other: none

Source: Majesco

Table 222: Five-Year Pricing Estimates

INSURER SCENARIO	LICENSING	IMPLEMENTATION	ALL OTHER
AVERAGE YEAR 1 COSTS	US$250,001 to US$500,000	US$250,001 to US$500,000	Under US$100,000
AVERAGE YEAR 2 AND BEYOND REMAINING COSTS	US$250,001 to US$500,000	Under US$100,000	Under US$100,000

Source: Majesco

CONCLUDING THOUGHTS

FOR INSURERS

There is no single best policy administration solution for all insurers. There are a number of good choices for an insurer with almost any set of requirements. An insurer seeking a new policy administration system should begin the process by looking inward. Every insurer has its own unique mix of lines of business, geography, staff capabilities, business objectives, and financial resources. This unique combination, along with the organization's risk appetite, will influence the list of vendors for 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 an insurance company that has a small IT group and wants a vendor to take a leading role in maintaining and supporting its applications.

Most policy administration systems bring some level of out-of-the-box functionality for various lines of business and operating models. Many systems offer powerful configuration tools to build capabilities for both known and future requirements. We're increasingly seeing a growing focus on integration strategies, including a shift to a microservices architecture.

We recommend that insurers that are looking for a policy administration system narrow their choices by focusing on four areas:

- The functionality needed and available out of the box for the lines of business and states desired. Check to see what is actually in production.
- The technology, including the overall architecture, the integration framework, and the configuration tools and environment.
- The vendor's stability, knowledge of, and investment in the solution.
- Implementation and support capabilities and experience.

FOR VENDORS

As a group, vendors continue to make significant investments in their policy administration systems. The solutions are delivering more functionality, improving configuration tools, and are more connected, with a new focus on integration. Although these trends are all very good news for insurers, they do 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.
- Making implementation faster and less expensive.
- Continue to move to open APIs and other integration frameworks to drive the easy orchestration of processes and data across external digital capabilities.
- Continuing to build out configuration environments to put change controls in the hands of the carriers.

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

LEVERAGING CELENT'S EXPERTISE

If you found this report valuable, you might consider engaging with Celent for custom analysis and research. Our collective experience and the knowledge we gained while working on this report can help you streamline the creation, refinement, or execution of your strategies.

SUPPORT FOR FINANCIAL INSTITUTIONS

Typical projects we support related to policy administration systems 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, particularly in policy administration, rating, and claims. 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.

RELATED CELENT RESEARCH

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