Pensions and Eligibility: Managing Employee Retirement and Compliance in Turbulent Times

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✓ Since 2008, every U.S. state has made changes to pension benefit levels and/or contribution rate structures to ensure pension sustainability.
✓ In 2014, 29 states introduced a total of 166 new pension bills.
✓ Government leaders must satisfy new reporting standards, and must implement rule changes into manifold, interdependent business processes to ensure compliance.

This paper discusses how governments can employ a new breed of business rules management systems to ensure compliance with changing pension and eligibility benefits processes.
Introduction

Calls for pension reform, accountability and legislative compliance are impacting public sector pension administrators like never before. Since the financial crisis of 2008, every U.S. state has made changes to pension benefit levels and/or contribution rate structures to ensure pension sustainability. In 2014 alone, 29 states introduced a total of 166 pension bills. Adding to the pressure, government pension administrators must now satisfy new reporting standards introduced by the Governmental Accounting Standards Board (GASB), credit ratings agencies and other entities.

To comply with new legislation and standards, government organizations have had to implement multiple rules and rule changes into manifold, interdependent business processes. Executing these changes rapidly, accurately and consistently is at the heart of strong compliance. While many federal, state and local governments have relied on traditional, hard-coded systems for managing business rules, the current rate and volume of changes demand innovative solutions.

A new breed of business rules management systems (BRMS) is revolutionizing the management of pension processes while helping governments ensure compliance. By separating business rules from application code, business rules engines allow pension administrators to not only simplify and improve rule implementation, but also take that rule implementation into their own hands.

This white paper addresses the challenges associated with traditional solutions for rules management, describes how government organizations can transform business rules management and provides suggestions for selecting a rules engine that can fully deliver on promised benefits.

Keeping Pace with Change

Given their role in managing the financial future of millions of workers, pension administrators are at the center of a storm. To determine eligibility, administer pensions, ensure adequate funding and maintain compliance, pension organizations use elaborate business rules to make thousands of recurring decisions a day. In meeting a variety of mandates, they are under constant pressure to apply decision logic quickly, accurately and consistently. They also face the challenge of adding or changing business rules as new regulations, policies and best practices emerge via legislation and industry organizations.

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The following challenges reflect the complex world pension administrators routinely navigate:

- **Underfunded pensions** — In the wake of investment losses related to the 2008 financial crisis, governments have had to find creative ways to ensure their pension systems are fully funded. Legislators have enacted changes to policies regarding annual required contributions (ARCs), retirement age, eligibility and more. Adapting to these changes at the administrative level requires careful tuning and testing of numerous business rules.

- **Increased scrutiny and reporting** — GASB now requires that every state reflect unfunded pension liabilities on their balance sheets. Under closer scrutiny on all fronts, administrators may have to perform separate pension calculations for financial statements, bond ratings and budget planning. In addition, they must be prepared to demonstrate compliance and defend budgets, pay-ins, pay-outs and other items to not only their “customers,” but also lawmakers and the media.

- **Millions of employees** — State and local governments employ approximately 19 million workers and the federal government employs another 2.8 million. The employee population ranges from Millennials...
just starting their careers to Baby Boomers entering retirement. Each generation is at a different phase of the pension cycle, and administrators must manage an intricate set of rules and variables for each group.

- **Volume and frequency of rule changes** — Besides applying thousands of business rules to comply with existing regulations, pension organizations must also comply quickly with new rules. Until recently, government pension administrators might encounter a plan change once every three to five years, and they would have six months or more to implement it. Today, administrators may face several changes every legislative session, and they may have as little as 90 days to implement them. With traditional COBOL/manual hard-coded systems, rule changes can take months, if not years.

- **Accuracy and consistency** — Every rule change at the regulatory level requires rigorous updating and testing at the implementation level. In a complex pension environment, administrators may have to manage thousands of interdependent rules. One mistake in rule implementation can ripple through the entire system, affecting everyone. Administrators need to ensure rules are error free and applied consistently across the system.

- **Customer demand for engagement/financial tools** — Today’s employees expect their government pension provider to offer the same types of financial tools as their banks and investment institutions. To meet this demand, administrators must be able to quickly create and test business rules for Web-based customer tools such as calculating retirement savings or deciding whether to pay off a mortgage vs. invest in a supplemental retirement account.

### Traditional Business Rules Management: Costly, Time Consuming and Error Prone

Many public sector pension and eligibility organizations create or change business rules (i.e., business logic) manually, relying on internal policies, guidebooks, training and institutional knowledge to apply rules in legacy COBOL systems. These decision automation systems have helped with the implementation of recurring business decisions, but they are not designed to keep up with frequent changes in business logic. Rule changes in these systems are labor intensive, time consuming and error prone, putting employee retirement programs at risk for miscalculations, overpayments, abuse, delays in benefits delivery and negative publicity.

Although some organizations have moved to newer automated systems, they still rely on Java or other coding languages to implement business rules. Because business rules are embedded in the code, even basic changes require expensive custom coding by IT personnel and can take weeks or months to implement. Business users — those who best understand the regulations and associated business rules — have limited visibility into (and control over) business rules and their impact. For non-technical staff, making sense of computer code and trying to make sure the change has been applied correctly can be overwhelming.

In addition to increasing costs and limiting agility, code-embedded business rules place additional burdens on already stretched IT resources. To change business rules, developers or other IT professionals must go back into the code, find the relevant rule, and change it correctly and consistently across every instance of the rule. Although this process sounds straightforward on the surface, rule disparities in older systems frequently make it difficult to locate rules. For example, previous developers may have entered the formula differently in multiple places, or the business rule may not precisely match the legislation. These inconsistencies impede rule discovery and can even result in the wrong business rule being changed. Rule development and change cycles can take months, if not years — meanwhile, development costs mount and the threat of non-compliance looms.

### Changing the Rules: Code-Free Automation

To address the challenges of pension management, organizations across the United States — from the Maryland State Retirement and Pension System to the California Public Employees’ Retirement System (CalPERS) — have adopted BRMSs
to automate recurring business rules without the need for traditional programming.

A BRMS is software that supports business process logic as defined by interdependent business rules. A distinguishing characteristic of a BRMS is that the business rules engine separates the rules from application code. Because business rules are externalized, the organization can create and/or change them without changing code in core COBOL, Java-based or other programs.

With the right business rules engine, administrators and other business users can establish and modify business rules themselves, and then run preliminary tests to verify rules and calculations are applied correctly. Instead of relying on IT for every incremental detail, the business team can work independently and productively, and then collaborate with IT as needed to perform a final quality assurance. The number of people and hours involved in the change process declines significantly, and the entire implementation cycle can shrink from months or years to days or weeks.

**Getting Full Benefits**

As outlined previously, a business rules engine has the potential to simplify and improve business rules management for federal, state and local employee retirement organizations. However, not all BRMS solutions are the same. The key to unlocking the benefits of automated business rules management is to choose the right solution. Doing so requires that not only the IT team, but also the business team participate in the selection process.

With a BRMS, business users are taking on a more active role in establishing and changing business rules.

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**Making the Right Choice**

A well-chosen business rules engine offers the following benefits:

- Helps ensure compliance with legislation and other urgent requirements by expediting implementation of new business rules and ensuring accuracy and consistency across the system
- Facilitates financial planning and decision-making by helping ensure that data derived from the system is accurate and by allowing organizations to easily create various rules-based scenarios
- Improves agility and operational efficiency by streamlining the implementation and testing process
- Frees IT resources/programmers to focus on security, system support and other higher-value tasks by separating business rules from application code
- Enhances control and quality by empowering business users, who are most familiar with the business rules, to author and test rules themselves and make incremental improvements
- Preserves institutional knowledge (intellectual assets) by ensuring business rules reside within the rules system rather than within organizational silos or individual employees
- Improves “customer” service by enabling organizations to more easily develop Web-based financial planning tools or other features for employees
- Supports modernization efforts by allowing gradual migration toward a service-oriented architecture (SOA) where rules are written once, and then distributed as needed across the system

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Determining Eligibility for Millions

The Commonwealth of Pennsylvania’s Department of Public Welfare (DPW) provides services and support to improve the quality of life for men, women and children in the state. One of its primary responsibilities is determining eligibility for more than 2.7 million people. The business rules for determining eligibility are extremely complex and must be kept up to date and error free to comply with legislation, policies and other requirements.

With the DPW’s old system, business rules were embedded in code, and business users had to rely on IT staff to modify them. In addition, caseworkers had to manually review alerts about potential eligibility conflicts, creating a backlog of issues for review and delaying eligibility determination for citizens. “With our old process, creating or modifying business rules was time consuming and cumbersome. A business analyst would have to sit down with a developer to translate the policy into code. The developer would then have to make the changes, test and then deploy the rule,” explains Shirley Monroe, chief technology officer of Public Welfare, Insurance and Aging.

As part of a technology modernization initiative, the department decided to implement a BRMS to automate the business rules and logic used for determining eligibility. Ease of use was an important criterion for selection. “With other rules engines, we felt like we needed to be a C# programmer to use the products, which was exactly what we were trying to get away from,” says James Weaver, deputy chief information officer of the department.

After careful evaluation, the department chose one BRMS over alternative solutions because it was much easier to create and modify rules — thanks in part to an intuitive user interface and sophisticated modeling and rule verification features. “We can check for ambiguity or conflicting rules; take a complex rule and make it simple; combine multiple simple rules into a complex rule; qualify an action with “what if” or “if then” statements; precompile rules; and we can schedule rules to take effect in the future, for example, if we know there will be a cost of living increase,” says Monroe.

Given the number of business processes running on the BRMS, it was also important the system could handle high transaction volumes. “We have a quarterly Income Eligibility Verification batch that must reconcile information across a number of sources,” says Monroe. Monroe reports the new BRMS processed “2.6 million records in 43 minutes for a sustained throughput of over 1,000 decision sets per second. The same process took almost two days on the mainframe in COBOL.”

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Shirley Monroe, Chief Technology Officer — Public Welfare, Insurance and Aging for the Commonwealth of Pennsylvania

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Given the number of business processes running on the BRMS, it was also important the system could handle high transaction volumes. “We have a quarterly Income Eligibility Verification batch that must reconcile information across a number of sources,” says Monroe. Monroe reports the new BRMS processed “2.6 million records in 43 minutes for a sustained throughput of over 1,000 decision sets per second. The same process took almost two days on the mainframe in COBOL.” With a BRMS that can scale and perform at this level, the department is well positioned to improve productivity and business agility now and in the future.
For them to adopt such a system, they must be able to use it intuitively and have confidence in the rules they create. The BRMS selection committee should determine how easily and quickly business users can get up to speed on the system, apply or change business rules as needed, and run tests to ensure rules are error free.

When choosing a BRMS, pension organizations should consider the following differentiators:

- **Coding and testing** — Some business rules engines require IT development to program the underlying language used to run the business rules. This approach essentially substitutes one development task for another. Organizations should look for a solution with built-in tools for connecting with infrastructure, running processes and testing those processes to ensure compliance to provide an audit trail.

- **User interface** — The dashboard is the main interface for creating, modifying and testing business rules. User-friendly dashboards are intuitive and walk users through the entire process — from capturing business requirements and modeling various scenarios to optimizing, scaling and deploying business rules. They can accommodate Structured Query Language (SQL) programming and other technical tasks, but they do not require it.

- **Modeling and rule validation features** — A trustworthy BRMS identifies errors in rule models and provides interactive assistance to resolve them. For example, it alerts users when they’ve missed a condition (e.g., forgetting to apply a rule to a particular age range), and it flags never-ending conditions and rules that contradict one another. Business users don’t have to wait until IT developers program and test a rule; they can model the rule themselves and catch obvious errors immediately.

- **Performance and scalability** — As a business rules engine accumulates more data and performs complex decision processes, the underlying rules engine must be able to handle the increasing volume of data transactions. If it cannot, processes may slow down to unacceptable levels, requiring organizations to add servers and bandwidth to manage heavier loads. The ideal solution is designed for millisecond response times across millions of transactions per day.

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**Helping Administrators Breathe Easier**

Citizens, legislators and the media are keeping an eye on government pensions and pension reform, and in some cases they’re demanding explanations. New York’s city and state teachers’ retirement systems, for example, have been under media scrutiny for the six-figure pensions that some retired teachers are receiving.

According to one article, multiple variables impact each retiree’s eligibility and payout. For just one pensioner in New York (the highest paid at $561,286 per year), variables included military service, years employed and the amount contributed over the years. In situations such as this, the right business rules engine can promote transparency and help ensure benefit decisions have been calculated and applied appropriately. Administrators and analysts can breathe easier when they are asked to demonstrate compliance or reconstruct benefit decisions.
regardless of location — and has minimal impact on infrastructure needs.

• **Ease of integration** — To support modernization efforts, provide flexibility and enable unrelated systems to share business rules, a BRMS should integrate easily into virtually any platform or programming language (e.g., Java or .NET), layer of the application stack (e.g., data layer or presentation layer) or SOA.

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• **Customer support** — Although the learning curve for a business rules engine solution should be minimal, business users and IT staff may need training or technical support. Given the mission-critical nature of a BRMS, it’s important to determine what levels of technical support are provided — in what scenarios, at what times of day and at what cost.

• **Costs** — Pension and eligibility organizations can pay a lot of money and still not get a powerful BRMS. When evaluating cost, the selection committee should consider not only the initial licensing fee and monthly charges, but also the cost for ongoing maintenance, upgrades and management. In addition, they should weigh the potential cost savings associated with various features and benefits.

**Getting Started**

With so many factors influencing business rules management in government pension organizations, it can be difficult to chart an appropriate course. The best approach — especially where compliance is concerned — is to start with the applicable law, standard or practice itself. Most legislation specifies exactly how a calculation is to be performed. Using that data, organizations can then break down requirements and calculations into specific rules for implementation.

To implement rule changes quickly, accurately and consistently, many federal, state and local governments are turning to business rules engines that do not require traditional programming. When selecting a BRMS, ease of use, collaboration by business users with IT and minimal impact on infrastructure should be top priorities. By involving business users in the decision-making process, organizations not only encourage adoption but also help ensure they extract the greatest value from a business rules engine investment.

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**End Notes**

Progress is committed to delivering market-leading technology innovations that empower our partners and customers to dramatically improve the development, deployment, integration and management of their business applications. Progress® Corticon® Business Rules Management System (BRMS), powered by the leading business rules engine, is proven to drive smarter, faster business automation at many government agencies. Corticon helps organizations across the spectrum of public sector to automate operational decisions and intelligent citizen interactions. Corticon separates decisions from processes, helping both business and IT users quickly create or reuse business rules. For additional information, please visit www.progress.com/corticoningovt.

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