PROGRESS® OpenEdge®

WHITE PAPER

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INTRODUCTION

To succeed in today's fast paced world, businesses need to respond quickly to changing market conditions and customer demands while coping with tight budgets and time frames. The mantra is "build for change" to support both volatility in the business landscape and to exploit the potential for brand new business opportunities. To remain competitive, it is vital companies have the agility to meet ever-changing customer and market demands. This level of agility requires flexible business applications—both in terms of process and integration. The days of making code changes every time a business process is defined or refined, or whenever a customer has unique requirements, are gone.

Companies need the ability to support the fast pace of business by quickly and efficiently incorporating those new processes and capabilities into their new and existing applications. And those applications need to be adaptable enough to integrate easily with other applications—now and in the future. Business Process Management (BPM) is definitely a part of the solution in this context; businesses must however realize that the decisions within the process are at least as critical in the search for agility since the decisions change more frequently than the process. Combining a Business Rules Management System (BRMS) with BPM provides that agility by allowing the decisions, and their underlying rules, to be changed independently from the process, often in real-time by business managers.

This paper examines the intersection of BPM and BRMS technology on the Progress® OpenEdge® platform: what they are, how they interact, and why this is of key importance to the agility, accuracy, cost and compliance of your business process.

BPM AND BRMS: A CLOSER LOOK

Business processes are the end-to-end processes that make your business what it is: the processes that touch your customers and span functional entities in your organization. A typical example is loan approval: any process which involves a customer applying for a loan, the processes and decisions engaged at the credit factory to assess the potential risk of granting the loan and the ultimate fulfillment (or rejection) of the loan via back office systems. Companies that don't manage their business processes across the entire business typically find problems not within each functional entity, but at the transition points between these "silos" – where the request passes from the customer to the credit factory, for example, or from the credit factory to the back office fulfillment function – since many business applications are focused only on processing within the boundary of the department.

Enter BPM. Analysts state that BPM is first and foremost a management discipline for improving your end-to-end processes: a way of thinking about process management, governance and improvement independent of any particular technology. Secondly, BPM is the methodologies and tools that help to put this discipline in place: orchestrating automated tasks and decisions where possible, integrating multiple enterprise applications, directing human tasks, and providing visibility on the state and health of the business processes. Progress OpenEdge BPM improves business processes by ensuring the correct distribution of tasks, the timely execution of tasks, escalation of tasks that experience problems, removes the delays in distributing work across the business functions, and provides personalized visibility into the performance of processes to management.

Progress OpenEdge BPM includes the following components:

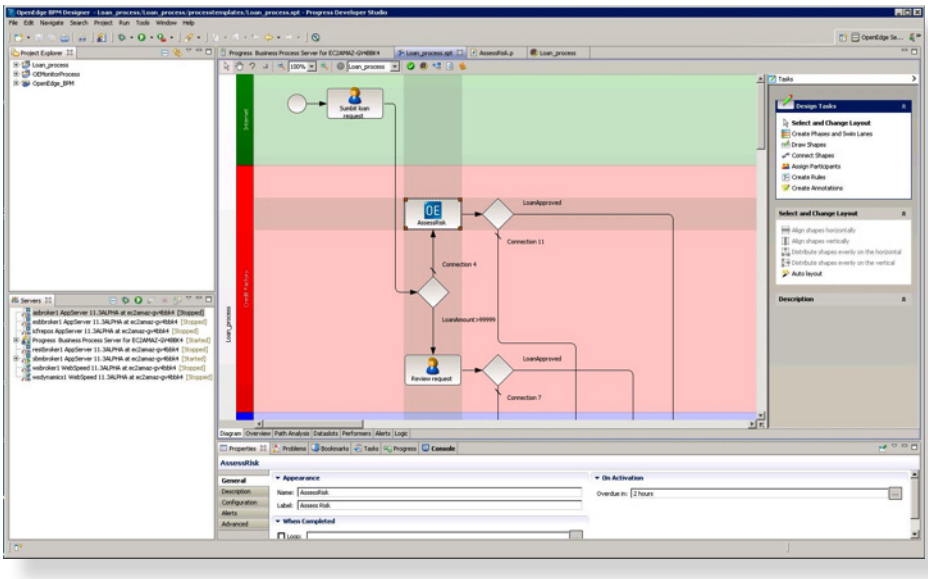

Figure 1

Process model in the Progress Progress OpenEdge BPM Designer

- A drag-and-drop, Business Process Management Notation (BPMN) compliant tool for modeling the business process. The Progress OpenEdge BPM Designer is an integrated component of the Eclipse-based IDE, Progress Developer Studio for OpenEdge
- A unified repository, the Progress OpenEdge database, containing state and process information for all business process entities across the business
- A server-based process execution engine
- A browser-based workspace, the Progress OpenEdge Business Process Portal, for actors to participate in a process
- Monitoring, reporting and analytics (via the OpenEdge Process Portal)
- Process simulation and optimization (via the OpenEdge BPM Designer tool)
- A set of managed adapters for enabling connectivity to assets both within and external to the business e.g. the OpenEdge managed adapter for executing Progress OpenEdge Advance Business Language (ABL) code as part of a business process or a JMS adapter for integrating with a messaging fabric such as Aurea SonicMQ.

Progress OpenEdge BPM can provide significant value to businesses looking to take a process-oriented approach to business application development, but BRMS arguably has the greatest impact on business agility. Business rules often embody the business policies that govern the point-in-time actions to be taken at a step in a business process: a decision to be made or a constraint applied.

BRMS, like BPM, is both a discipline for the discovery and management of business rules and the methodologies and tools used to manage the rules. The Progress® Corticon® BRMS is the industry-leading BRMS, and it is tightly integrated with the Progress OpenEdge platform.

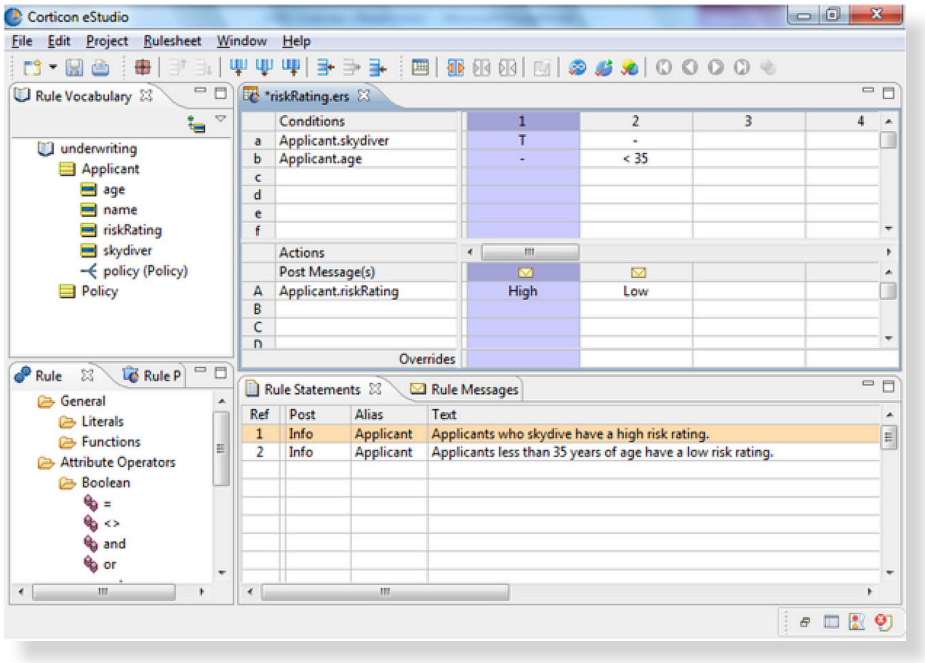

Figure 2

Modeling a rule sheet with the Progress Corticon Designer

Progress Corticon BRMS for Progress OpenEdge includes the following components:

- A rule authoring (modeling/development/testing) environment – Progress Corticon Designer. Corticon Designer is based on the familiar Eclipse IDE environment
- A file-based rules repository
- A server-based rules execution engine (choice of Java or .NET target runtime environments)
- A rule completeness and rule coverage capability to ensure the integrity of rules
- Monitoring, analysis, management and administration of "decision services" via a browser-based management interface
- Support for a unified vocabulary across existing Progress OpenEdge artifacts to ensure semantic consistency

The parallel evolution of BPM and BRMS is no coincidence. Both practices and technologies are focused on creating explicit models of business that can be directly translated to the execution of those models— known as "model-driven architecture"—which greatly reduces the time required to develop applications. The value of BPM and BRMS solutions strongly correlates with the degree of automation in translating business-friendly models to executable code. Separating out processes and rules from transaction-oriented applications turns them into explicit assets to be managed, allowing for greater visibility into business operations, greater agility in changing those assets, and reusability across multiple business applications.

BRINGING POWERFUL TECHNOLOGIES TOGETHER

In spite of this parallel evolution, many organizations consider BPM and BRMS to be separate technologies rather than synergistic solutions. This doesn't need to be the case, and bringing these technologies together can deliver tremendous value in terms of business agility. **When decisions are externalized from processes, process models inherently become more stable**, i.e. most business agility is based on rule changes. Some degree of decision processing can be done at the BPM level – this is basically routing and flow logic.

Let's return to our simple loan approval process in Progress OpenEdge BPM to better understand this separation of concerns. Upon submission of a loan application, the process flow routes the request to a decision activity. In Progress OpenEdge BPM we can declaratively define the routing logic at this point in the flow. Essentially, we are distributing work here by sending loan applications for $100,000 or greater to a loan specialist in the credit factory and all other requests to an automatic loan adjudication workstep. In our example, we interrogate the value of a "Dataslot" variable (a process variable scoped to the lifetime of the process instance).

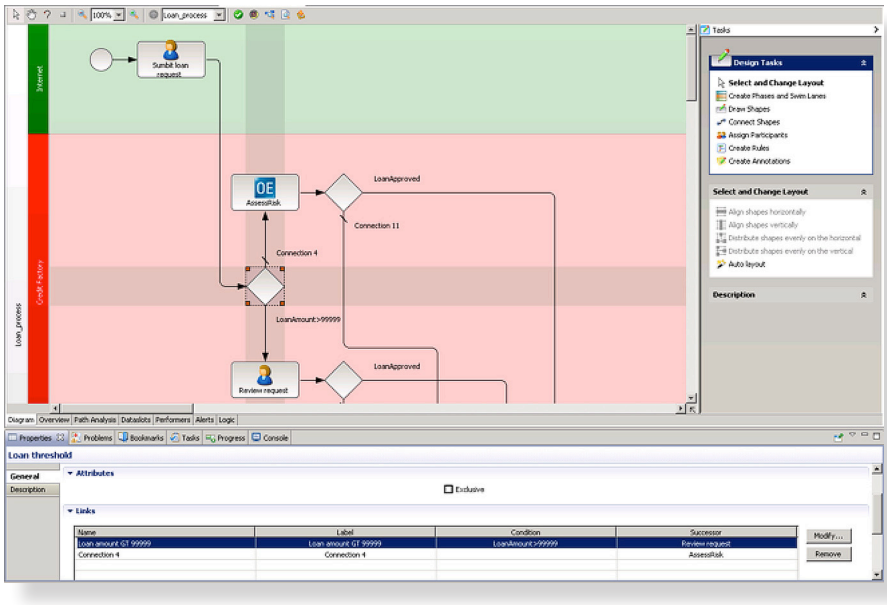

Figure 3

Configuring a decision step in the process flow using the OpenEdge BPM modeler

Typically, BPM supports Boolean-type expressions primarily for orchestrating routing logic within the process flow. This is fine for a variety of applications but it can't be reused per se and moreover, if we want to make changes to the routing logic we would need to modify, test and redeploy the process for it to take effect. Also, this change would only affect new instances of the loan process and not those currently instantiated (remember, processes can be short running, but typically they can run for hours, days or even weeks).

Depending on the use case, a better way to manage decisions is to externalize them with a BRMS and make them callable entities from the business process. Before we explore this at more depth, let's take a closer look at the "AssessRisk" workstep in our process. In our current implementation, the business logic for this workstep is "sunk" in procedural Progress OpenEdge ABL code. This logic typically takes the form of IF .... THEN ... ELSE programming constructs processing a set of input and output parameters. In the case of our loan approval process, the logic is looking at a small number of input parameters – the age of the applicant and the size of the loan amount – and setting a Boolean value as the return parameter to the caller.

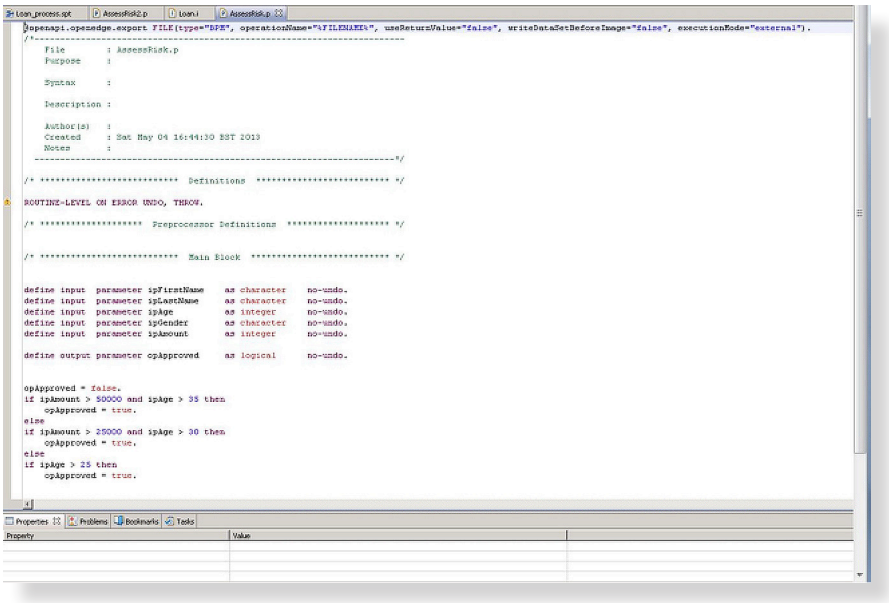

Figure 4

ABL-based implementation of business logic

Even for a limited set of parameters, programming this logic can quickly become unwieldy, and what if the business requires that we introduce another parameter – the amount of collateral the requestor can bring to the transaction – into the logic ? And what if the business requires that we fine-tune the relationship of the loan request amount relative to the collateral amount (and consider the result of that decision relative to the age and gender of the applicant)? Separating out, or externalizing point-in-time decisions from BPM and implementing them in a BRMS has several benefits:

- Sophisticated, yet easily manageable rules can be built, tested and maintained with a business-friendly metaphor supporting comprehensive logical analysis, versioning and model-driven data execution
- Rules can now be shared across applications. Our credit scoring or risk assessment logic can now be called as a "decision service" from Progress OpenEdge BPM or from any Progress OpenEdge application within the enterprise
- Process instances don't access the decision service until it's required, thereby ensuring that the most up-to-date rules that support the current business policies are applied
- Business managers and analysts can now update specific rule parameters in real-time to fine-tune decisions for current conditions, which also impacts in-flight process instances

BETTER TOGETHER

We can now "refactor" our "AsessRisk" workstep to be a placeholder for collecting process variables in the BPM flow and calling the now externalized decision service housed in the Progress Corticon server. Upon execution of the decision service a set of return parameters are returned to the BPM caller. The routing in our BPM flow is now a simple decision step which examines the state of a variable ("LoanApproved" of type Boolean in our example). Note that the decision service we have developed for externalizing the risk assessment logic also returns a string indicating the outcome of the decision service e.g. "If the loan amount is ≤ 25,000 and the applicant is ≤ age 25 then reject the loan". This string can be copied to a process variable and persisted with the state of the process instance for forensic or auditing purposes.

Business analysts can now leverage the ruleset to create and evolve decision services which can be versioned and time-bounded upon deployment to the Progress Corticon server.

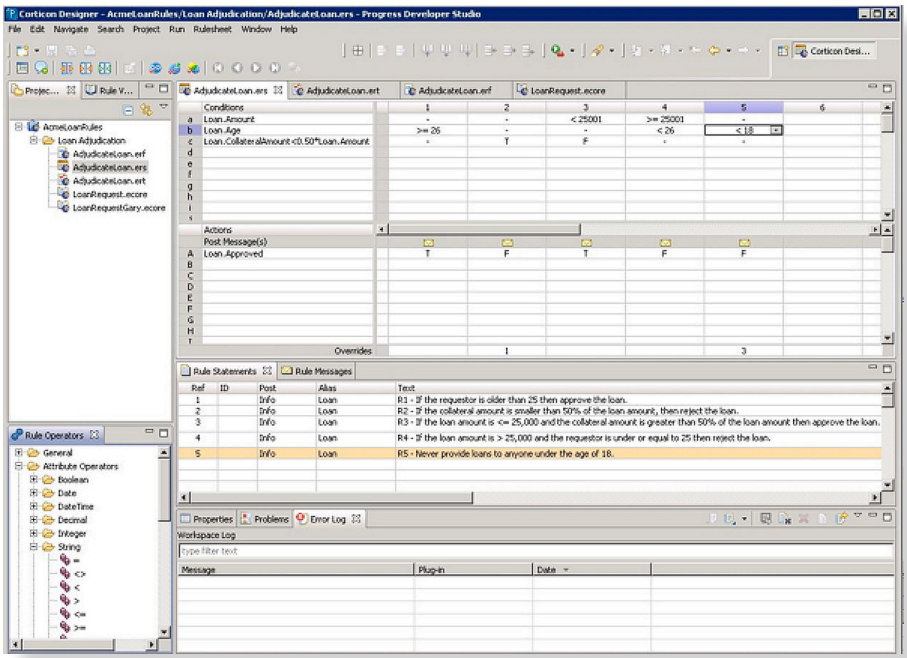

Figure 5

A risk assessment ruleset modeled with the Progress Corticon Designer

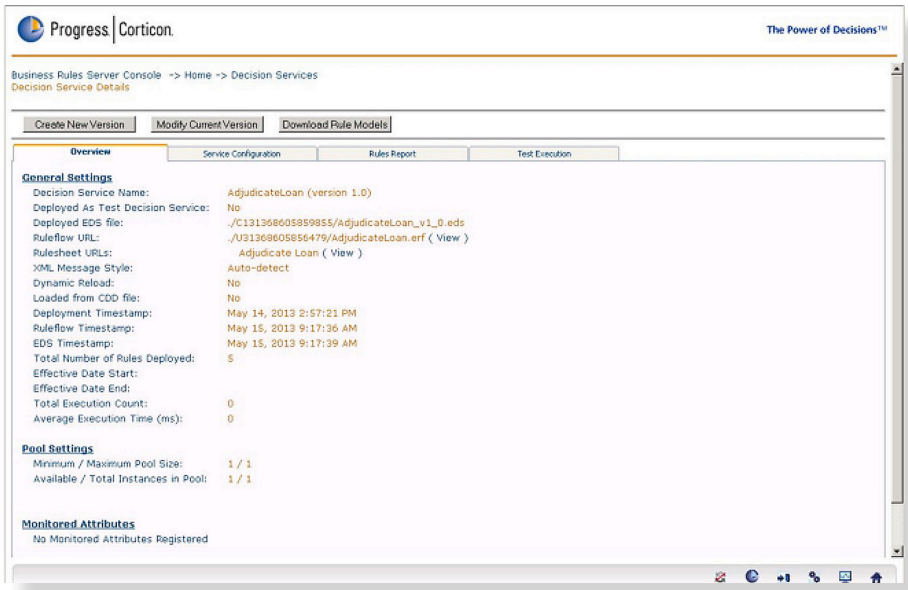

Figure 6

Administering a Corticon decision service on the Progress Corticon Server via a browser

CONCLUSION

There are many business decisions buried within your Progress OpenEdge applications and business processes, ranging from simple work routing to complex scoring or risk analysis. These decisions – based on current market conditions, legislation, company policy and other factors – change much more frequently than the business processes themselves. Fully empowering business analysts and domain experts to modify those point-in-time decisions independent of the process is key to business process agility.

With tightly integrated BPM and BRMS solutions running on the proven OpenEdge platform, you can now take business agility to a new level. Progress OpenEdge BPM combined with Progress Corticon BRMS enables you to:

- Externalize the decisions from the processes, allowing the decisions and their underlying rules to be changed in real-time in response to changing market conditions
- Reduce errors by automating decisions that do not require human intervention
- Reduce training requirements for staff by eliminating the need for them to interpret policies and apply decisions manually
- Improve policy enforcement and compliance by automating and providing forensics and transparency for compliance-related decisions

The synergy of BPM and BRMS with Progress OpenEdge is compelling. Progress OpenEdge BPM and Progress Corticon BRMS working in unison give you the ability to build for change, an imperative in today's fast-moving business environment.

PROGRESS SOFTWARE

Progress Software Corporation (NASDAQ: PRGS) is a global software company that simplifies the development, deployment and management of business applications on-premise or in the cloud, on any platform or device, to any data source, with enhanced performance, minimal IT complexity and low total cost of ownership.

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