REPORT REPRINT

Red Hat brings predictive decision modeling to its process automation portfolio

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Automating tasks, activities and processes has become a top priority in the digital business era, but automation itself is insufficient. Industry leaders seek new value through data-driven analysis that makes processes, their designers, and users smarter and more productive – trends driving Red Hat's automation portfolio strategy.

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Introduction

In Q4 2019, Red Hat announced the 7.5 release of the Red Hat Process Automation portfolio. Among its enhancements are artificial intelligence (AI) capabilities that bring predictive decision modeling to its application development and automation environment. It represents the latest of Red Hat's strategic thinking about how AI technology can be used to automate decision-making processes. More importantly, its predictive modeling can rapidly reveal change, opportunity and risk – critical in processes where time is of the essence, such as in fraud detection, equipment monitoring or clinical decision support, or when predicting events has business value, such as in consumer purchasing behavior, direct marketing and social media monitoring.

451 TAKE

Red Hat's foray into AI-enabled intelligent process automation is designed for agility. The DMN and PMML standards upon which the portfolio relies are intended to accommodate and use virtually any type of AI technology or model. Red Hat is not bringing to market its own AI brand (nor do we expect it to), like those offered by its parent, IBM Watson, or other potential rivals, such as OpenText with Magellan and Wipro with HOLMES. The AI strategy behind the Red Hat Process Automation portfolio is to provide a platform with strong design, automation and collaboration capabilities that can adapt to the rapidly emerging and evolving AI markets – one that enables users with development and runtime tools to craft and deploy cloud-native case-, process- and decision-oriented applications.

Context

In an earlier report on Red Hat, we examined its automation technology. Process Automation Manager (PAM) 7.0 represented new branding and enhanced capabilities of its earlier JBoss BPM Suite. At that time, Red Hat had improved upon its low-code user experience (UX) to enable business analysts and developers to collaborate in application development. It also enhanced its tooling to craft device-independent user interfaces (UIs) as part of building process-driven applications. Dynamic case management added capabilities to support unstructured and ad hoc (collaborative) activities. It also included what Red Hat refers to as an 'AI constraint solver' – OptaPlanner optimizes planning and scheduling problems. It can intelligently assign and allocate a limited set of constrained resources (e.g., employees, assets, time, money) needed for use cases such as vehicle routing, employee rostering and maintenance scheduling.

Overall, PAM is an open source digital automation platform that combines business process management (BPM), case management, business rules management and resource planning. It enables business and IT users to create, manage, validate, and deploy business processes, cases and rules. PAM is part of a broader Red Hat Process Automation portfolio that also includes Decision Manager (used to automate decision-making processes) and Runtimes (a set of products, tools, and components for developing, maintaining and running cloud-native applications). All are native components within Red Hat OpenShift Container Platform.

The launch of version 7.5 of the portfolio includes several performance improvement enhancements to its management, runtime and uptime capabilities. More importantly, it represents a strategic move by Red Hat to exploit emerging and evolving AI technologies to enable predictive decision modeling and create intelligent process automations.

Strategy

The digital business era continues to drive tectonic IT shifts toward agile cloud-native application development, the assimilation of IT operations into more efficient DevOps organizations, and process automation designed and executed intelligently using now realistic AI and machine learning technologies. The Red Hat Process Automation portfolio is crafted to support these trends. It's being positioned as an application development platform designed to enable business users to participate with IT developers in the creation of case- and process-oriented cloud-native applications. The 7.5 release adds specific AI technology, modeling standards and front-end development tooling to enable intelligent process automation.

Technology

Great value can be derived when automated processes can predict and act upon events prior to occurrence. Doing so is enabled by 'predictive analytics' to examine current and historical data using techniques such as data mining, statistical algorithms and various types of AI models. Often, such AI models are composed of diverse data sets that prohibit their ability to interoperate within processes. Red Hat Process Automation now supports Predictive Model Markup Language to overcome this limitation. PMML is a standard language crafted to allow different AI models and data mining tools to share trained models that reveal patterns and generate insight with some degree of precision. Its inclusion in Red Hat's Process Automation portfolio enables predictive models to be created, trained and then included in automated decision services modeled with Decision Model and Notation. DMN decouples decision logic from software solutions, allowing decisions to be crafted, managed and changed separately, on their own lifecycles.

Another new key capability in the 7.5 version is 'micro-front-end development,' which improves upon how UIs are developed and deployed. Essentially, it's a microservice-based approach to UI design. It decomposes client-side interfaces for process- and decision-based business applications, treating them as a composition of features that can be more easily modified when compared with more monolithic UI design approaches. The capabilities stem from a relationship created in 2018 with Entando – a digital UX platform developer – where Red Hat agreed to include access to a set of Entando's open source low-code tools as part of Red Hat Process Automation Manager.

Competition

Red Hat's direct rivals will come from vendors in the digital automation platform market that also seek to AI-enable their platforms. Appian includes Google AI services (Translate, Vision, Natural Language) in its platform, and recently acquired RPA vendor Novayre Solutions. Microsoft offers Power Automate, which includes decision logic automation. Nintex has its Hawkeye analytics technology. OpenText has its Magellan AI and AppWorks platforms. Oracle offers its AI Portfolio. Pega claims that its Customer Decision Hub, Marketing, Sales Automation and Customer Service offerings are AI-enabled. Salesforce has several process-automation tools that can use its Einstein AI platform. SAP offers its Leonardo AI platform as a means for intelligent automation of its business applications. Wipro has built out a digital automation portfolio based on its HOLMES AI technology. Other digital automation platform rivals to Red Hat will include BonitaSoft, Bizagi, BP Logix, Bpm'online, Broadcom (CA Technologies Automic), Dell Boomi (Boomi Flow), K2, Signavio and Software AG.

Indeed, Red Hat's parent, IBM, offers its Digital Process Automation portfolio and Watson AI technology. It will likely target and be sold to various enterprise lines of business, while Red Hat will likely target and sell to IT organizations as part of their cloud-native application development and runtime strategies.

SWOT Analysis

STRENGTHS

Red Hat automation technology has long been developed with intelligent decision management as part of its strengths. The latest inclusion of standards to facilitate the agile use of virtually any type of AI technology and models makes its Process Automation portfolio a compelling toolkit for what will surely be a changing intelligent process automation landscape.

WEAKNESSES

Tangential markets that will affect the digital automation platform market include robotic process automation, which makes use of AI to interpret unstructured data, and process discovery technologies, a new type of AI used to visualize and examine business processes and workforce activities – areas that Red Hat has yet to seriously explore.

OPPORTUNITIES

Automation in general, and now intelligent process automation, which uses AI to extract insight and provide foresight into business performance and outcomes, is at the heart of nearly all digital transformation initiatives of industry-leading enterprises.

THREATS

Virtually all IT vendors that craft wares for application development and process automation have similar aspirations to embed AI technologies and models into their respective platforms. Some are further along than others. Red Hat will need to expend extra effort to be heard over the market din.