

Pega System as a Business Process Management Tool

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Pega systems Inc. is an American software company based in Cambridge, Massachusetts. Pega systems specializes in developing software for customer relationship management and business process management. Pega is a Business Process Management tool. It is developed on Java and uses OOP and java concepts. And the big advantage is we don't have to have to build the system from the scratch like any conventional programming. It is becoming popular because of that, though most conventional programmers would disagree. And also because of it is agile way, Flexibility, and being extensible. PEGA main focus are on Processes. If you are planning to learn PEGA or if you are already working with PEGA tools you should keep this in mind is "Process is King, Queen and everything in PEGA". Every business solution is process oriented.

Keywords:- *Business Process Management(BPM) ,Pega Rules Process Commander(PRBC)*

I. INTRODUCTION

What is pega:-Pega is a Java-based business process management tool which is used to build enterprise applications. Among all the BPM tools in the market Pega is the leading and No-1 tool according to market standards far beyond its competitors. Pega enables in creating and managing web-based applications with less effort. All the components involved in a web-based application are in-built in Pega like as the integration with Oracle Databases and other external systems. Pega even has the best in class Software Configuration Management system built in it. It has been proved that an application development in Pega takes only one-third of an effort compared to Java^[2].

We design the Business Process Flow (E.g. Order management System, Call Center Management, Healthcare anything which has a Business flow) and decide the functionality we need to the Flow. Pega does the rest. But of course we need to think in java and JavaScript, JSP and other languages in order to fulfill Client's Requirements. Having strong analytical skills, Understanding of Core object oriented approaches is a must in using this tool. And also there are lot of frameworks built on the Pega Process Commander in order to support various aspects of business requirements^[1]".

Technically PEGA is not a language or database or operating system. What PEGA provides us is a framework which is process driven; everything that we do in traditional programming such as designing user interfaces, writing business logic, applications logic, creating physical and logical mode of databases, coding for the applications etc. we do the same thing in PEGA. The difference lies between PEGA and Traditional programming is that in PEGA to build or develop anything (UI, data access logics, validation rules etc) there are processes and gadgets that we have to use.

Pega system customers are in various sectors like as financial services, insurance, healthcare, communication & media, life science and government etc.

Advantages of pega:

- Build solutions faster.
- The complete platform.
- Build smarter.
- Work together build responsive & social applications.
- Bring system together.
- Join the community.
- Take less efforts to design the web applications.
- It supports all the database and servers.
- It provides end to end solutions.
- It is best for web services because all things it done automatically.

II. WHY PEGA?

Pega product is built on java, and produces java code behind the scenes that is executed at runtime. Pega goal is to "eliminate or can say reduce coding" and "automate manual work" to the minimum and build complex system at the enterprise level with features right out-of-the-box. The core concept of PEGA PRPC revolves around "changes in software with time is inevitable".

PEGA PRPC's work is to cut down the costs involved during those changes. PEGA products (www.pega.com) tag itself says how it fits in the scenario "build for change".

We are in a world of cloud computing and evolved programming where the coding effort takes minimal precedence. Customers want or demand for a tool which consumes business logic and generates code by itself, thereby reducing the chance for errors and fast development. Pega is one such tool which generates the Java code in the background according to business logic or according to the customer requirement that's why it is favorite of lots of customers in the market, hence increasing its demand.

III. PEGA SOFTWARE

Pega software is a package of 3 things:

- a. Java
- b. Database
- c. Server

It also consists of 2 editions:

- 1. Personal
- 2. Enterprise

We use personal for practice only and enterprise for real time. Pega supports all the database and server available in the market. If we install personal we get Java in backend and PostgreSQL as a database and Tomcat as a server. But in enterprise we use the database and server according to the application requirement. In pega we don't need to have the database knowledge and also no need to write the queries.

The process of mapping the data it has 2 types of classes:

1). Work class: this is used to design the whole application. Under work class it contains many rules like data model, process, user interface, integration, security.

2). Data class: this is used to create the tables.

PRPC

Pega rules process commander or PRPC, is a comprehensive platform for building and deploying BPM, CRM, decision management and case management applications. It is a powerful, flexible, platform that can do almost anything, but it focuses on automating our work, and automating our programming. PRPC automates the work and automates the programming. Pega/PRPC is a popular rules engine and BPM tool from Pega systems that is containing good market share among large corporations^[4]. Architects and developers build the Pega/PRPC instance while administrators and even select business analysts have the option of changing workflow rules during runtime. Infact, their aim itself is "Build for change"

The build for change platform

PRPC lets you respond faster to your customers needs with an improvement developer experience and enhancements in ease-of-use. A new look and feel—paired with improved performance—enhances both developer and end-user experience. Bring straightforward case management design, flexible data reuse, security, mobile and social capabilities, and connectivity enhancements to your applications to driven customer satisfaction.

IV. BPM

Business process management (BPM) is a methodology to manage processes and workflows in an organization. goal of this methodology is to increase efficiency, performance, and agility in the day-to-day operations of a business. BPM has been widely adopted by organizations today and is essential for any business that wants to be competitive in its marketplace.

BPM methodology can generally be implemented in the following steps:

Analysis: Comprehensive analysis is done to discover and identify processes that can be created or optimized to meet business requirements or improve performance. Specifications for a design solution can be derived from this analysis.

Design: The design of a process involves workflows that include system-to-system, human-to-human or human-to-system interactions. The design should aim to reduce errors and maintain relevant standard operating procedures or service level agreements.

Modeling: Once the process design is ready, it can be modeled using varying input values to observe its behavior. If undesirable behavior is observed, design changes can be made iteratively. Software tools are available to effectively model and evaluate processes.

Execution: A process model can be executed using a business rules engine to govern process execution.

Monitoring: During execution, processes can be monitored to collect reporting data for performance, errors, and compliance. Monitoring allows businesses to evaluate executed BPM solutions against corresponding design models and against relevant KPIs. Data collected by real-time or ad-hoc monitoring can also be used by predictive analytics software to anticipate future problems.

Optimization: Data from the modeling and monitoring phases can be used to identify areas of the solution that can be improved to derive higher efficiency and better value^[4].

V. SIX R'S of BPM

Process commander applications provide process management and the automation through 6 functional capabilities, informally known as six R's^[6]

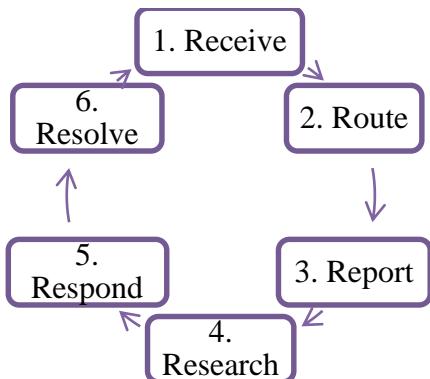


Fig: 1 6R's of BPM

1. Receiving: accept and capture the essential data describing work from multiple sources.
2. Routing: use characteristics of the work together with knowledge about the workforce, to make intelligent matches & assignments.
3. Reporting: provide real time visibility into work in progress, work completed, productivity and quality.
4. Responding: communicate status, requests for information and progress to the work originator and to the other people involved in the work.
5. Researching: support analysis and decision making by providing access to external system and database through connectors.
6. Resolving: complete the work & update downstream system promptly through automated processing and automated supports of users^[5].

VI. PEGA ARCHITECTURE

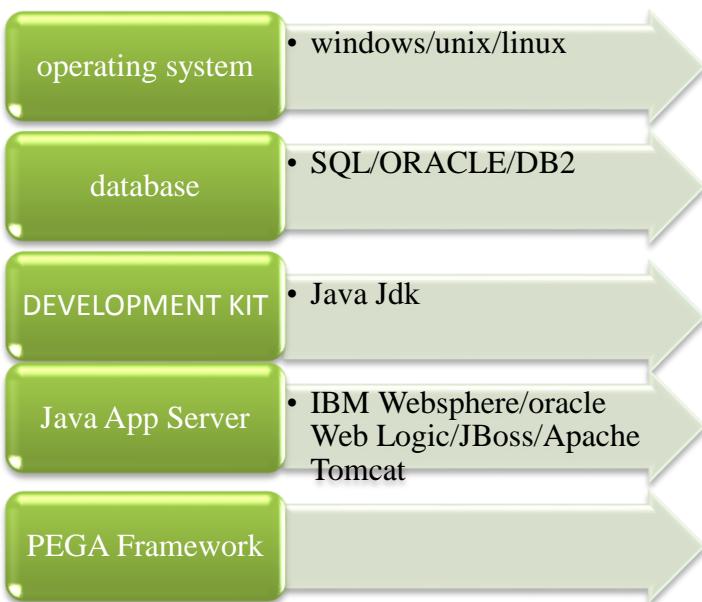


Fig: 2 pega Architecture

VII. NEW FEATURES IN PEGA 7

- New guardrail dashboard: this features help individual to identify WWW(Where, When, Who) which means which means which rules is not following guardrail rules and also let you know time when the rules last modified and who modified it.
- Cross browser: you must have observed some rules like service rules open in pop up window in previous versions. In ML7 launch now all rules will be opening in the same window.(HTML 5 & Css3 is inbuilt)
- Live user interface: actually its combination of HTML explorer and developer tool.
- Dynamic UI: it will do auto adjustments of layouts (no div, tags 7 TD's).
- UI responsiveness: panicles will collapse & Recorder, Organize themselves, No scroll bars available.
- Warning age: identify when warnings were introduced in the project.
- Split schema: in previous we have same schema for business rules & data rules. In pega 7, rules & data are divided.
- Pinned classes: if we have more classes in one application, we can pin most frequently used classes.
- Zero downtime deployment: if you make code deployment server gets down in previous versions or when there is up gradation.
- Application excess
- Stages: new concept in user interface
- Data pages
- Dynamic layouts
- Mobility: same application converts into mobile app.
- Inbuilt guardrails: manager can see complete reports^[5].

VIII. PEGA VERSIONS

- Pega 7.1(latest versions)
- Pega 6.3
- Pega 6.2 Sp1, Sp2
- Pega 6.1
- Pega5.5
- Pega5.4
- Pega 4X, pega 3X

IX. CONCLUSION

in this paper we discuss about the Pega BPM tool. Pega is java based tool but to develop the application we don't need any java coding. PEGA is not a language or database or operating system. What PEGA provides us is a framework which is process driven.

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