

## RESEARCH ESSAY

# Challenges and Considerations of Modern Day Portal Tooling

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### ABSTRACT

*Java based Portals have come a long way. The inception of open portlet standards, like JSR168 and the more open JSR286, has led to their wider adoption across verticals and horizontals. Now, Java EE and non-standard MVC frameworks are becoming available for Portlet programming and part of portal applications. The design and development of portal applications is increasingly being done in the light of openness, connectivity, context sharing, and joint presentation. Thus, portals are now finding themselves in a tighter coupling with not just the rest of Java EE but also web 2.0 actors. With this, the challenges faced in portal application development have gone several notches up. A modern day portal tooling has the important tasks of bridging the gap and reducing the learning curve of the Java EE and core java converts, as well as making sure that the MVC frameworks work smoothly and seamlessly on modern day portals. This article examines one such MVC framework JSF and its applicability to portal development over the course of its versions 1.2 and 2.0. The author examines how a popular MVC framework like JSF is changing the way portal applications are being thought of, architected, designed, and implemented. In the same context, a modern day portal tooling in the IBM Rational Application Developer is examined.*

*Keywords:* Java Based Portals, Java EE, JSF, MVC Framework, Portal Tooling, Web 2.0

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### INTRODUCTION

Attempting to define a portal these days can be a risky exercise for they have come a long way from what they were meant to be. But it would not be too incorrect to term portals as web sites that act as a one-stop or single point of access to a host of information, applications and services, with the scope being either the internet or the intranet. However, for the sake of this article, we would be examining and treating the portal as an application platform. One of the key components or building blocks of a portal

is a portlet. Most of what we talk about portal is usually synonymous with portlet behavior. For example, several individual portlets together on a portal page help achieve the objective a portal is created for, hence the name building blocks for them. Like servlets, portlets process user requests to generate dynamic content like partial page markups. In fact, one can draw a lot of parallels between servlets and portlets. Just as servlets run inside a servlet container, portlets are managed by a portlet container. The basis of portlet containers are the portlet specifications. The portlet specifications have had a long and interesting history. Earliest portlets were programmed to proprietary specifications that forced and tied down portlets to specific port-

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let containers thereby killing inter-operability and openness. It was then that JSR168 or Java Portlet Specification V1.0 was standardized in 2003, co-led by IBM and Oracle. As a result, the popularity of portlets underwent a meteoric rise since multiple vendors could support the specification, leading to a quick and widespread acceptance.

In spite of being a major step forward, JSR168 lacked in a few features, the most prominent being coordination between portlets. This is when JSR286 or Java Portlet Specification V2.0 was standardized. It introduced key inter-communication capabilities for portlets like eventing, shared render parameters etc.

A key feature of a portal is application integration. There is a considerable scope for synergy between portal and applications based on popular Java EE frameworks. The swelling popularity and openness of portal and portlet standards is manifesting this collaboration in a number of portal applications getting coupled with Java EE applications. However, such applications based on different Java EE frameworks have their own dynamics and the way they inter-operate with other actors in the system. On the other hand, design principles on which portals work are also different from traditional application integration systems. As an application platform paradigm, a portal is a different ball game altogether with its own idiosyncrasies and considerations. For an increasingly large Java EE community coming in to the portal landscape, it means that portal application development needs some facilitation for achieving best output in terms of returns on investments for businesses. This is precisely where a portal tooling can play a role in bridging the gaps between the two landscapes. A well oiled and efficient tooling can not only make the developer's job easier but also ensure smooth functioning of individual components and systems in the overall complex integrated application. As already mentioned, tooling is that cog that can keep both the actors together and maintain smooth inter-operability. It is best placed to solve all development challenges and act as a broker in bringing the two together for

best possible combination by taking care of most key decisions and considerations.

## **JAVA EE FRAMEWORKS AND PORTALS**

### **MVC in Portals**

A portal is an aggregator of information from various sources. It is usually the user interface of the various backend applications and services. The portal front ends them by bringing them all together on the user screen in a seamless manner. It falls very nicely into the Model View Controller (MVC) paradigm which owing to its positives is omnipresent. And it is not too difficult to understand why. Generally, as a best practice or rule of thumb, once a web application or portal application start to get big, some question marks arise around its maintainability, extensibility etc. This is where the structuring of the application on MVC model takes a lot of pain away. Just as with servlets, one would integrate with or use standard MVC frameworks like JSF, Struts, etc, one can make an equally strong case for their applicability in portal applications. As mentioned earlier, portlets are specialized cases of servlets only and one can draw a lot of parallels in the structure and design of their applications. A portal typically deals with the presentation part of the application. So it is only fair to say that like any other good Java EE application, a robust portal application must also base its basics on a reliable and proven MVC architecture. It was probably keeping this in mind that the portlet specifications were written accordingly. A closer look at a portlet underlines this point. The portlet class acts as the Controller that intercepts user requests. It then delegates the request processing to the Model part. Finally, it passes control to the relevant View which in turn utilizes the Model to send the response back to the user. The portlet java class can act as the controller in the system. The model can be anything from a POJO to specialized handlers depending upon the nature of the application. Typically, a model is everything else in the application, apart from

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