WebRatio

The other way to BPM
What is BPM?

BPM (Business Process Management) is not only a technology, but broadly speaking, a management discipline that treats processes as assets that directly contribute to enterprise performance. BPM employs methods, policies, metrics, management practices and software tools to continuously optimize the organization’s processes to improve business performance against goals and objectives (this is called BPI: Business Process Improvement).

Software tools enabling BPM

There are several software tools enabling BPM discipline in a company. The most common ones are the so-called BPMS (Business Process Management Suites). A BPMS is an integrated suite of technologies that work together to support the BPI cycle. Generally, a BPMS is a whole platform offering the following features:

- **Business process modelling** – business processes are explicitly described by abstract models, often based on BPMN (Business Process Modelling Notation) or a proprietary notation.

- **Business process execution/automation** – business processes are interpreted by a runtime engine that implements and coordinates any type of interaction among users, system tasks and information resources.

- **Data and information management within the process** – all the data and information related to a process instance (or “token”) are kept together coherently.

- **Interoperation with external software assets** – business processes can use and interact with tasks, data or services available in any external systems; the execution engine communicates with the external systems by means of an integration layer, often based on SOA Web services.

- **Change management** – business processes can be constantly updated, both in their definition and in the way they are executed by the engine.

- **Business activity monitoring** – data about completed and in-progress transactions are used for monitoring, reporting, analysis and notification of activities and events inside the process.
The WebRatio approach to BPM: build custom BPM applications

WebRatio approach to BPM is different. Instead of offering a whole platform comprehensive of all the typical features of a BPMS, WebRatio clearly distinguishes between design-time features and run-time features. At design-time WebRatio offers you a powerful modelling and development environment, allowing you to define all the requirements of your BPM project by capturing them in abstract models and custom components. At run-time, starting from the models, WebRatio generates a standalone custom BPM application that can be easily deployed on any standard Java Application Server. The BPM application does not need any proprietary workflow engine and is open source (the source code of the application is available and “human readable”).

The development process of a BPM project with WebRatio is highly iterative. We call it “evolutionary prototyping development cycle”. At any stage of your project, even after a few minutes, you can generate the BPM application and test it immediately. In such way you will have an immediate feedback of what you have done and you can react accordingly. This kind of development process allows you to involve (if you want) your business users or your stakeholder in the evaluation of the work in progress.
We can highlight 4 main differences between WebRatio and “traditional” BPMS:

1. **Build a real tailored solution instead of customizing a predefined platform**

Traditional BPMS allows you to model your business processes and add to the models the additional information needed to the process engine in order to run the application. Such information can be: data to be read or managed, forms and operations to be shown to the user, services to be called, etc. Once the models and the additional information are defined, then the process engine can run the application. However, many of the features of this application, especially concerning the layout and the user experience, are predefined. You only have the chance to change the theme (often by the means of a CSS file) or to choose among a predefined set of layout options. However the user of the application will always have the sensation of using an “external” platform.

On the other hand, WebRatio builds from scratch a **tailored and perfectly fine-tuned BPM application**. Any feature at any level (presentation, integration or data) can be generated exactly in the way you want. The final users of the BPM application will not be aware of using a BPM platform, but they will feel they are using “their own application”. Imagine implementing a BPM application that has a part running directly in your website (for example a support process or an online quotation process directly involving your customers). You must want to have your application perfectly compliant to your visual identity and give the user the same user experience he has in your website. Your customer must feel inside your application, not in an application that has the flavour of the BPMS vendor!

2. **Two layers of modelling, instead of one**

In traditional BPMS you use an abstract modelling notation for defining business processes (in many cases the notation is BPMN). The notation allows you to define roles, activities, gateways, events and workflows. **This approach is called “model-driven”** and it is very powerful because it loosely couples the physical resources used at execution time with the design of the process. In this way you can quickly apply a change to a model, or add a new part to it, and immediately have the BPM application change behaviour accordingly.

However the BPMN model is very abstract and it does not provide you with the needed detail to define what kind of operations must be executed inside one activity. Let’s consider an example. If you define an activity as “Quotation Request Form Filling” in a BPMN diagram you would also have a place to define: which are the input fields to be shown in the form; in how many pages the fields are distributed and how the user can go through these pages; what are the rules used to validate the input data; what are the Web services (supposing we are in an SOA) used to collect preloaded data or to make real-time calculations.
BPMN does not allow you to model such details. By using traditional BPMS you can define such behaviours only by adding properties to the activity and by adding pieces of code to be executed. Generally this work cannot be done by the business analysts, but requires a programmer.

On the other hand WebRatio gives you a second modelling layer, called WebML. The business expert can define an activity in BPMN and add all the functional behaviours of the activity by using a second modelling language, thus without diving in to the details of code programming. The modelling language is dedicated to specifying the behaviours of the application: content to be displayed, validation rules to be invoked, services to be executed, navigation between pages, user interaction, etc.

In this way the model-driven approach, and all its benefits, is extended also to the functional requirements of the application, and not only the definition of the business process.

3. Rapid evolutionary prototyping, instead of a waterfall development

By using many BPMS, once you have defined your business processes, there is still a lot of work to do in order to get a running application. You have to add additional behaviours to each element of the business process diagram: you have to define the user interface components (forms for retrieving inputs, pages to display data, etc.), the integration components (call to services available in your information systems, connection to corporate databases, etc.), the access rights policies, and so on.

On the other hand with WebRatio you can get your hands on a realistic prototype at any time and as many times as you want. At any stage of your development process you can generate, with no extra cost, a running application that corresponds to the current status of the model. The richer the model, the richer the generated application will be. In this way, starting first from a wireframe prototype, the application can naturally evolve into a full-featured application, ready to be deployed online.
4. Run in a standard Java environment, instead of having a proprietary runtime engine

Every BPMS has its own runtime engine needed to execute the business processes. Often the runtime engine needs a particular hardware/software configuration. This can cause some difficulties, in particular when:

- configuring the runtime engine
- trying to optimize performance,
- letting the runtime engine communicate with other systems
- adapting the runtime engine to internal IT standard policies in terms of security, deployment configuration, and application lifecycle management

On the other hand WebRatio does not have any proprietary runtime engines. The BPM application generated by WebRatio can be deployed on any standard Java Application Server (like JBoss, Tomcat, WebSphere, Oracle AS, etc.). Any issue in terms of configuration, integration, or performance can be addressed with a standard approach, in compliance with JEE rules.
BPM features offered by WebRatio

WebRatio is not a BPMS in the strict sense of the word however it offers the 6 typical features of a BPMS:

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<tr>
<th>Feature</th>
<th>Description</th>
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<tr>
<td>Business process modelling</td>
<td>WebRatio offers a nice and user-friendly BPMN editor.</td>
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<tr>
<td>Business process execution/automation</td>
<td>WebRatio generates web applications that execute and automate the business processes (even if generated web applications run outside of WebRatio, on a standard Java Application Server).</td>
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<td>Data and information management within the process</td>
<td>By means of a second modelling language (WebML) WebRatio lets you add to the BPMN diagram any functional behaviour needed to manage data and information within the process. Once modelled, the generated web application will contain such features.</td>
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<td>Interoperation with external software assets</td>
<td>As well as data and information, the second modelling language (WebML) also allows you to define functional behaviours that requires integration with any other software assets (available in terms of web services, custom API, or by an internet protocol).</td>
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<td>Change management</td>
<td>The modelling environment of WebRatio lets you define different versions of the process and different functional behaviours for each version. In this way the generated web application will contain and support all the different versions and will manage automatically the flow.</td>
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<td>Business activity monitoring (BAM)</td>
<td>WebRatio provides you with a special predefined project that allows you to generate a web application dedicated to business activity monitoring. Like any application, this application can also be extended and customized at will, simply by modifying the model and generating a new application.</td>
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## Benefits of this approach

The differences between WebRatio and traditional BPMS can bring you many benefits:

| **Speed** in building the solution | With 2 modeling layers, you can increase the productivity even more and reduce the time to market of the BPM application in your company. You and your team will be just required to define the model; WebRatio will take care of the rest. |
| **User Acceptance** | By extensively using prototyping, you can involve business users in the development process of the BPM application; you can show them early on the current status of the work and collect their feedback earlier. Business users will never be disappointed. |
| **Quality** of the solution | At the end of the project you get a perfectly tailored application in terms of functions, user experience, visual identity and integration with other web applications of your WOA (Web Oriented Architecture), running and adapting to your SOA. Business users will never part with particular wanted features. Furthermore, the automatically generated code will be free of human errors. |
| **Standard** execution environment | If your company has strict IT policies for the execution, maintenance, and lifecycle management of applications, no need to worry. The application you get is perfectly compliant to JEE standards, the source code of the application is open, you can choose your execution environment from the most common Java Application Servers. No vendor lock-in syndrome. |