One SIZE does not fit all!

WEB RATIO

The tailor of BPM Applications
What is BPM?

BPM, or Business Process Management, is a technology, but it is also more than that. Broadly speaking, one can consider BPM as a management discipline in which processes are valued as assets that directly contribute to enterprise performance. BPM employs various methods, policies, metrics, management practices, and software to continuously optimize an organization’s processes and thereby improve business performance as measured by specific goals and objectives. Some refer to this conception of BPM as Business Process Improvement, or BPI.

Software tools enabling BPM

Software of various types can enable BPM for a company. The most common is a so-called BPMS, or BPM Suite. A BPMS is an integrated suite of technologies that work together to support the BPI cycle. Generally, a BPMS is an integrated platform offering the following features:

- **Business process modeling**: Abstract models, typically described in Business Process Modeling Notation (BPMN) or a proprietary notation, explicitly describe business processes.
- **Business process execution/automation**: A runtime engine coordinates business processes to implement interactions among users, system tasks, and information resources.
- **Data and information management within the process**: The BPMS manages all the data and information related to a process instance (or “token”) as a whole.
- **Interoperation with external software assets**: Business processes can use and interact with tasks, data, or services available from external systems. The execution engine communicates with the external systems by means of an integration layer, often based on SOA and Web Services.
- **Change management**: The BPMS constantly updates business processes, both in their definition and in the way the engine executes them.
- **Business activity monitoring**: The BPMS uses data from completed and in-progress transactions to monitor and analyze the process, and to create reports and notify users of activities and events within the process.
The WebRatio approach to BPM

Build a tailored BPM application

WebRatio’s approach to BPM is different. Instead of offering a predefined platform that includes all the features of a typical BPMS, WebRatio clearly distinguishes between **design-time** features and **runtime** features.

At design-time, WebRatio offers you a powerful modeling and development environment, which allows you to define all the requirements of your BPM project and describe them in abstract models and custom components.

At runtime, a standalone custom BPM application “executes” the processes, which WebRatio had automatically generated and deployed on any standard Java Application Server. The **open-source BPM application** does not need any proprietary workflow engine (open-source in the sense that the source code of the application is available and “human readable”).

![Fig. 1: Where the BPM Cycle is Executed](image-url)
What does “tailored” mean?

Custom User Interface
Having a tailored BPM application means, first of all, that you have a custom User Interface. You can design and build the UI as you want, without any limitation. The process will not be executed on a predefined platform, but by an application generated from scratch. WebRatio will use any layout template as input to generate the Web or mobile pages for the users of your BPM application.

Hybrid applications
In many cases, the BPM project is not a standalone application. You need integration not only at the data or service level, but also at front-end level.

WebRatio allows you to build applications that integrate seamlessly with:

- your Web portal
- your CRM system
- your enterprise social network
- your intranet
- any other system of your choice

The final users of your BPM application will not be aware of going from one application to a BPM platform, but they will feel to be always “in your home”.

![Diagram showing integration of Web Portal, CRM System, Intranet, and Enterprise Social Network]
WebRatio vs “traditional” BPMS

We can summarize five 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 then enhance the models with additional information, such as that required by the process engine to run the application. Such information can be data, forms, operations, services, etc. Once the models and the additional information are defined, then the process engine can run the application. Many of the features of such an application, however, are predefined, especially those concerning the layout and the user experience. While some of these systems allow administrators to change the visual theme (often by the means of a CSS file) or choose from among a predefined set of layout options, the user of the application will always have the sensation of using a platform external to the tool they had been using.

   On the other hand, WebRatio builds a *tailored and perfectly fine-tuned BPM application* from scratch. It can generate any feature at any level (presentation, integration, or data) exactly in the way you want. WebRatio end-users are not aware that they are interfacing with a BPM platform, but instead feel as though they are using their own application.

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

   In traditional BPMS, you use an abstract modeling notation for defining business processes (in many cases, BPMN). The notation allows you to define roles, activities, gateways, events, and workflows. *This is the Model-Driven approach*, 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, such as adding a new part to it, and immediately have the BPM application change its behavior accordingly.

   That BPMN model, however, is very abstract and does not provide the detail necessary to define specific operations within a given activity. Consider the example of a BPMN diagram with the defined activity: “Quotation Request Form Filling”. To accurately capture all the operations in that activity, you also would have to define: the form’s input fields, the number and sequence of the pages that those fields fill, the rules that validate the input data, the Web Services (assuming an SOA) that are to collect preloaded data or make real-time calculations, and possibly other operations as well.

   The BPMN approach does not allow you to model such details. In a traditional BPMS, you can define such behaviors, but only by adding properties to the activity, and that involves adding sequences of executable code. More unfortunately, business analysts are typically not trained as coders; so programmers — who likewise are typically not trained in business processes — must become involved.
On the other hand, WebRatio gives you a second modeling layer, called WebML, which is complementary to BPMN. The business expert can define an activity in BPMN, and add all the functional behaviors of the activity at the model level, without diving into the intricacies of coding. The modeling language directly specifies such behaviors of the application as: content to be displayed, validation rules to be invoked, services to be executed, navigation between pages, user interaction, and so on.

**Fig. 2: Process execution versus Custom BPM application**

In this way, WebRatio extends the benefits of the Model-Driven approach from the mere definition of business processes to the full functional requirements of the application.
3. Rapid evolutionary prototyping, instead of a waterfall development

Once you have defined your business processes in a traditional BPMS, there still is a lot of work to do before you have a running application. You must add additional behaviors to each element of the business process diagram. You must define the user interface components (such as forms for retrieving inputs, pages to display data, etc.), the integration components (such as calls to the services available from your information systems, connections to corporate databases, etc.), the policies for access rights, 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 from a wireframe prototype, the application can naturally evolve into a full-featured application, ready for online deployment.

The development process of a BPM project with WebRatio is highly iterative. We call it the 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 this way, you will have immediate feedback on what you have done, and you can react accordingly. This kind of development process allows you to involve (if you want) your business users and stakeholders in evaluating the work in progress.
4. Run in a standard Java environment, instead of having a proprietary runtime engine

Every BPMS requires a specific runtime engine to execute the business processes. In addition, the runtime engine often needs a particular hardware/software configuration. This can cause difficulties while:

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

On the other hand, WebRatio does not require any proprietary runtime engines. The BPM application generated by WebRatio can be deployed on any standard Java Application Server (such as JBoss, Tomcat, IBM WebSphere, Oracle AS, etc.). You can address any issue regarding configuration, integration, or performance with a standard approach in compliance with JEE rules.

5. User Interface and BPM engine separated, instead of having a monolithic platform

The BPM engine of a BPM application generated by WebRatio is interchangeable. By default, WebRatio provides a lightweight and inexpensive process engine that manages the workflow and stores BPM data in a database.

If you are interested in WebRatio only for building the front-end application of your BPM project, however, you can still use another BPM engine to track the process and store the data.

You can choose, for example, to use TIBCO® Active Matrix. In that case WebRatio will:

- Import and synchronize the business process definition from TIBCO Business Studio®
- Generate a tailored front-end application that works on top of the TIBCO ActiveMatrix® BPM engine

The Web (or mobile) application will manage all the user interface functionalities, and will be strictly connected to the BPM engine to control the flow.
BPM Features Offered by WebRatio

Although WebRatio is not a BPMS in the strictest sense of the term, it offers the six typical features of a BPMS.

<table>
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<th>Feature</th>
<th>Description</th>
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<tr>
<td><strong>Business Process Modeling</strong></td>
<td>WebRatio offers a powerful, yet intuitive and easy to use, process diagram editor, based on the BPMN standard.</td>
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<td><strong>Business Process Execution/Automation</strong></td>
<td>WebRatio generates BPM applications that automate and execute business processes. Such applications run on a standard Java Application Server. You can also choose to use WebRatio for only the front-end layer of your BPM project, and use another BPM engine (such as TIBCO ActiveMatrix®) to manage workflow and store BPM data.</td>
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<td><strong>Data and Information Management within the Process</strong></td>
<td>In addition to BPMN, WebRatio also offers a complementary modeling language that allows you to define the functional behavior needed to manage data and information within the process. Furthermore, WebRatio allows you to define, manage, and integrate your own data sources in the BPM application. You can design the abstract model with the help of ER diagrams, and then link it to any RDBMS.</td>
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<td><strong>Integration with External Software Assets</strong></td>
<td>As well as defining data and information, the additional modeling language also allows you to define functional behaviors necessary for integrating with other software assets such as Web Services and custom APIs, or for communicating via an internet protocol.</td>
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<td><strong>Change Management</strong></td>
<td>WebRatio modeling and development allows you to define several versions of a process, and different functional behaviors for each version. In this way, the generated Web</td>
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<td><strong>Benefits of this approach</strong></td>
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<td><strong>The WebRatio approach to BPM</strong> can bring you many benefits:</td>
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<td><strong>Speed in Building the Solution</strong></td>
<td>With two modeling layers, you can further increase your team’s productivity, and reduce the time to market of the BPM application. All you and your team need do is define the two modeling layers; WebRatio will take care of the rest.</td>
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<td><strong>A real tailored BPM Application</strong></td>
<td>WebRatio will build a perfectly tailored application for you in terms of UI, user experience, visual identity, and integration with other Web applications of your Web-oriented architecture—always running with and adapting to your SOA.</td>
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| **High User Acceptance** | By extensive prototyping, you can involve business users in developing the BPM application. You rapidly demonstrate the current status of the work, and respond to their feedback sooner than with traditional BPMS.  
**Business users will never be disappointed.** |
| **Compliance with Your IT Policies** | No need to worry if your company has strict IT policies for the execution, maintenance, and lifecycle management of applications. The application WebRatio creates is perfectly compliant with JEE standards, it is written in open-source code, and you can choose your execution environment from the most common Java Application Servers. You can define your own generation rules in the WebRatio generation engine to get exactly the code you want to execute in your environment.  
**No vendor lock-in syndrome.** |
Testimonial – Bruce Silver

“WebRatio is unique in building the individual tasks that are more than a simple form, so think of a human task in a process, it is usually more than just designing a form because there’s the data, there’s a flow of screens, it’s really a whole web application and so, with many BPM tools, it’s easy to drop the flow activities but there’s very difficult time conceiving to build each step because you have to build especially the database application behind the step and that’s the part that WebRatio is really good at. I find that much easier than other tools that are used so I like that part a lot.”

Bruce Silver
Silver associated