

How to Evaluate Web Application Development Tools

This document can be used to answer critical questions prior to purchasing a web application development tool. PlanetJ Corporation developed this document based on a collection of common customer questions. If you have other questions you feel would enhance this document, please submit them to info@planetjavainc.com

A few of the many benefits of a rapid application development tool over traditional manual coding include 1) the ability to significantly cut down on application development time; 2) allowing the programmer at any skill level to develop applications; and 3) providing you access to critical support resources. There are many tools available but they are not alike. Comparing these tools is critical to your success and satisfaction with a tool and vendor.

You've considered the questions presented. We usually recommend installing trial software on your system or requesting a prototype. After taking these steps, you will possess a much better understanding of the product and whether or not it is right for you.

Company: ***PlanetJ Corporation***

Product: ***WEB OBJECT WIZARD***

Primary Contact: _____

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1) *What is the tool and what does it do?*

Why is this important? Before diving into a major product evaluation, you want to make sure the vendor is selling what you actually need. Many products appear to provide the same (or at least have similar) features but in reality are very much different.

The WOW Product is a rapid application development tool and runtime engine that provides developers of all skill levels the ability to quickly build web applications accessing any database. WOW is written with a framework that allows it to run on any JDBC or ODBC compliant system. Companies using the WOW product can expect to build any type of data centric web application including B2B, B2C, self-service, dashboards, reporting, e-commerce, and others without the need to write extensive lines of code, if any at all.

2) *Is the product strategic?*

- ✓ What hardware/software platforms does/can the product run on?
- ✓ What databases are required/supported?
- ✓ Do you need to purchase additional hardware to support the product?

Why is this important? It is possible that no matter how much homework your team does, the strategic direction may change in a month, six months, or a few years down the road. The tools you purchase and the time you invest in building applications around that tool can be totally lost if the strategy or platforms change.

Unless you have additional funding for expanding or enhancing your platform, knowing if the product is compatible with existing systems can save you headache and expense later on.

The WOW product framework is written in 100% industry standard Java and can run on any Java enabled platform including, but not limited to, Windows, OS/400, LINUX, UNIX, and OS/390. For optimal performance, we suggest the configurations listed in the table below.

WOW runs on top of the WebSphere application server or Apache's Tomcat and can access data stored in any relational database including DB2, UDB, Oracle, MS Access and SQL Server. WOW can also access multiple databases within the same application concurrently. Using a web based development interface, applications are created by specifying JDBC/SQL operations and configuring application metadata. Developers and users only need access to a browser to build and use applications with WOW.

Recommended Configurations

Operating System	Application Server	Memory	Processor	Concurrent Users*	Comments
Windows NT, 2000, XP, 2003, LINUX	Tomcat or WebSphere Express	1 GB	2GHZ	0 – 20	
Windows NT, 2000, XP, 2003, LINUX	Tomcat or WebSphere Express	2 GB	2GHZ	0 – 75	Custom load testing needed for usage above 75.
OS/400 or iSeries V5R1 or above	Tomcat or WebSphere Express	512MB	300CPW or above	0-20	
OS/400 or iSeries V5R1 or above	Tomcat or WebSphere Express	2GB	750CPW or above	0-75	
OS/400 or iSeries V5R1 or above	WebSphere Base with EJB support	1GB	750CPW or above	0-20	
OS/400 or iSeries V5R1 or above	WebSphere Base with EJB support	2GB	1400CPW or above	0-75	

*Concurrent users is an estimate. User numbers may vary dependent on server.

3) *Does this tool generate code?*

- ✓ If yes, what type of code is generated?
- ✓ Is the generated code industry standard?
- ✓ Will it be supported in the future?

Why is this important? How easily applications can be extended and enhanced is dependent upon whether or not there is difficult or proprietary code to decipher. Also, if the code is no longer supported or is out dated, it may be difficult to add to or enhance applications at a later date.

Flexibility should be at the top of your list. Applications that include logic specific to your data, your customers and your employees are critical. If you are unable to decipher how to interact with lines of generated code to personalize and customize your applications, the tool you purchase can be not only frustrating to use but virtually useless.

Using the WOW product web applications are created by specifying SQL/JDBC statements - WOW generates and displays the results in HTML to the user's browser. No

Java code is “generated.” Therefore to extend, you do not need to decipher lines of unwanted code to make changes to the application.

Architecture - The WOW product is built with 100% industry standard Java and is composed of a set of reusable components that can be extended by developers. The WOW components operate via the use of metadata. All metadata is stored in traditional database files. For example, when an application is created, WOW writes a record to the "Application" metadata file. The record holds all specifications about the application. As "Operations" are created for a given application, records are written to the "Operations" metadata file. When a WOW application is run, all metadata needed to execute the application is retrieved and stored with WOW's high performance cache and used to execute the application. In all applications, no code is generated thus enabling very high productivity and deployment speed.

4) *How are applications deployed to production?*

- ✓ Is there version control?
- ✓ Can the application be easily moved from development to production systems?
- ✓ Is there an ability to back up development and production applications?

Why is this important? Controlling your development to production environment is an important process to protect user's and employee's data. Many applications go through multiple phases of development. Managing these phases is essential to not disrupt the development process or corrupt current production applications. RAD tools should have methods of handling these phases and conversion issues.

The WOW product offers numerous scenarios depending on complexity, the number of developers, and required business procedures. An explanation of these options is found in this configuration guide:

http://www.planetjavainc.com/wow_docs/WOW_Version_Configuration_Guide.pdf

Because of WOW's unique framework and metadata system, all stages of development and production can be backed up by using your company's already established back up procedure.

5) *Are there performance features?*

- ✓ How much CPU or memory do the applications take?
- ✓ What are the differences between jdbc sql statement calls compared to CGI and RPG?
- ✓ Can you use the application efficiently on dial up?
- ✓ What needs to be generated on the fly?

Why is this important? Whether your users are accessing the application from DSL or dial-up connection, the application's performance is critical to provide save them time in accessing their data. The effect your application has on your iSeries will greatly change the speed of the data return and increased frustration to the end user if it is not as fast as they expect. A good product should have performance features.

The WOW Product is able to access even the smallest model iSeries or other database. The hit that your server is going to take depends on the SQL that WOW sends to the database, which would be equivalent to running SQL statements through Ops Navigator or STRSQL. In most cases WOW has a very low performance hit on your database system. To further aid in performance WOW has built in high performance caching and features to minimize trips to the database.

Typically performance is nearly all outside of WOW's control.

What happens is:

- *WOW passes an SQL statement to the server (AS400).*
- *The server (AS400) executes the statement using the best known optimization, as determined by database code. This includes such factors as file size and database indexes.*
- *After execution, WOW reads the data returned from the server (AS400), generates HTML, and then sends the HTML to the browser. Thus, nearly all performance is dependent on the database server (AS400).*

However, WOW does have facilities to control and enhance performance such as built in high performance cache. This allows WOW to retrieve data from the cache avoiding a call to the database server each time a menu item is selected in the application.

Connection properties can be set for each JDBC database driver. By specifying these properties within the WOW connection, you can control how the WOW connection will behave and can help improve performance.

WOW also allows you to automatically set the number of maximum connections allowed. This can also affect performance and is based on the power of your system. Controlling the number of records returned in an SQL operations and controlling row counts displayed and number for fields read can also improve performance. All of these are automatic WOW features.

Of course, taking the steps to enhance optimization on your AS/400 should also be taken. A user can compare SQL performance against non-WOW methods by AS400's STRSQL or by putting the SQL into iSeries Navigator and running the SQL Scripts.

Lastly, if you are running WOW on the Tomcat server, refer to tomcat configuration optimization for tips to optimize Tomcat.

6) Does the product satisfy my security requirements?

- ✓ SOXs Compliance?
- ✓ What type of security is supported?

Why is this important? Keeping your data secure is likely one of the most important concerns a team should have when evaluating and testing software products. If a tool does not allow much needed security measures to handle rules and regulations then it simply is not an option for you. Creation of the Sarbanes-Oxley rules has made security

rules stricter than ever. Be sure to evaluate if these tools provide you the ability to comply with your industry's regulations.

The WOW product and the associated server elements provide robust and complete features to insure applications conform to the highest of security requirements including Sarbanes-Oxley. Depending on your environment, you may implement a combination of the elements below. WOW can operate in Intranet/Extranet or Internet configurations. WOW runs applications on standard user defined ports such as 80 and 443 for SSL. WOW has numerous security options including integrating with SSL, operating system security, database security, firewall/gateway security. For more information, please refer to the [WOW Builder's Guide](#) (Chapter 19) on security protocols.

WOW has built-in security to restrict users in the following ways:

- Control ability to insert, update, read, and delete data
- Control ability to view and update database fields
- Control ability to view and update database records. Access can be enabled to allow users to view only the records to which they are authorized.

7) ***What development skills are necessary to use the tool?***

- ✓ What skills are necessary for base functionality? Extending?
- ✓ How often do developers find it necessary to extend or modify the tool's basic functionality?

Why is this important? Learning a new language or set of skills can be very costly. Developers that are able to use a tool right out of the box are often able to create production ready applications very quickly. Many shops in the evaluation process have witnessed the learning curve of development in a traditional environment – perhaps they have existing web developers with Java and JSP skills. Other shops may have a staff comprised of RPG or COBOL programmers and are not able to invest in the training necessary to complete their applications in a traditional manner. The learning curve for most RPG developers to obtain Java skills, HTML, JSPs, CSS is at least 12 months to basic capability.

The WOW product allows developers of all skill levels to build applications with a learning curve that is the shortest in the industry. Developers will benefit from having skills in SQL; however even that is not required as WOW comes packaged with SQL wizards and templates. Due to WOW's ease of use, it has been called the "[Ultimate Java for RPG Programmers](#)" by iSeries Network Magazine.

Approximately 80% of WOW applications can be created without the need to extend the framework. Companies wishing to integrate specific logic into applications can easily manipulate the WOW API using Java (no propriety language). Java developers can very easily extend the framework and override automatic features. This allows the developer the ability to focus time on business logic – not application logic.

If you have Java developers on staff, they can be trained on manipulating the WOW framework to add your logic. PlanetJ developers can also be hired to customize your application for you.

8) ***What is the learning curve?***

- ✓ Will you be required to hire staff to work with the tool?
- ✓ How much time do you have to dedicate to learning the tool?
- ✓ Are there educational options – online, onsite, video tutorials, and documentation?
- ✓ Can you see results without having to know details of the architecture?
- ✓ Can you build a prototype easily?

Why is this important? Vendors that claim their tools are the easiest in the industry should have no problem proving it. Evaluate options to educate your staff – are there free tutorials and documentation supporting the products? Some tools require advanced education and programming skills which may or may not be possible with your existing staff. Prototyping is one of the best ways to test out products prior to committing to purchase and allows your existing staff to get hands on experience with the product. Getting your end users their requirements immediately will improve customer service and allow your staff to move on to other projects.

The typical learning curve for web application development is greater than 12 months for basic capability. Vendor tools utilizing proprietary languages can be equally complex so thorough evaluation is essential to avoid surprises down the road.

PlanetJ Corporation encourages installing trial software prior to purchase. This allows developers the ability to evaluate the learning curve and build a proof of concept for management. With PlanetJ educational tools and videos, any of your existing staff can build web applications. Even though WOW is written in 100% Java, the majority of applications can be created without manipulating the architecture. The typical learning curve for basic WOW applications is a few hours to a couple of days.

There are many [online tutorials](#) and a free online WOW basics course that can be obtained by emailing info@planetjavainc.com. The online course can be completed at your own pace and allows a comprehensive overview of many product features.

Educational sessions are offered both online and onsite to assist customers in getting up and running with WOW immediately. For instance, with the WOW Intro Class, a developer can easily create applications after only 16 hours of training. WOW Advanced Classes provide developers a deeper level of knowledge of how to extend the WOW framework, add logic and customize applications. This is also a 16 hour class.

WOW trial software can be freely downloaded for 30 days. PlanetJ Corporation will support developers as they test and assure all questions are answered prior to the trial expiration. This software can be obtained by emailing info@planetjavainc.com

9) ***Is pricing important to you?***

- ✓ Is pricing simple and easy to understand?
- ✓ Is the product licensed by developer seat, by processor?
- ✓ Is pricing tiered?
- ✓ What is the annual maintenance on the product?
- ✓ What will it cost to educate my staff on using the product?
- ✓ Is there a need to pay for runtime licenses?
- ✓ Are all functions required to build your application provided in the base package or do you have to buy additional “add on” components?

Why is this important? Evaluation of hidden costs – runtime, maintenance, training, etc is critical because they can quickly eat up your budget. Don’t just look at the cost of the tool and assume that is the only step in evaluating the price. Many vendors charge a sizeable amount for services above and beyond the initial cost of the tool. Be sure to investigate underlying costs not immediately evident such as for tools that only offer the features you need through the additional purchase of add-ons or modules.

Paying the full price for a tool when you only need a very small application may not be an option for your organization. If you are working under a strict budget, it is important for a tool vendor to offer *affordable solutions specific to small or large organizations*. There may be options to invoice out over monthly installments or other payment plans.

PlanetJ Corporation has simplified the pricing structure of the WOW product. The software is licensed per production server with unlimited developer seats. There is a yearly maintenance fee of 15%. Pricing is not tiered and there are no additional charges associated with upgrading your OS. All features and functionality are included with the base product at every level of the pricing structure.

There are several ways to affordably pay for a WOW license, comprehensive education, and services. Run time licenses are only applicable to ISVs building applications with WOW, but PlanetJ Corporation offers reasonable packaging for this as well. A [Business Coordinator](#) within PlanetJ can direct you to the best plan and provide you with documents containing current list price.

10) ***Have you evaluated the vendor?***

- ✓ Has the company been around a while?
- ✓ Is good support offered?
- ✓ Who currently uses it and are they happy with it?
- ✓ Is the tool industry recognized?
- ✓ Are there partners that also support the tool?

Why is this important? Understanding a bit about the organization and their product support processes is obviously important prior to investing in them. You want to feel confident the business will be around to support your needs and that tools are industry recognized. Contacting a handful of satisfied customers and gathering information on

their experiences may provide good information. Direct questions regarding support, installation, ease of product use and learning curve are good things to ask other users.

PlanetJ Corporation was founded in 1998 in Rochester, Minnesota. PlanetJ is now headquartered in San Diego, CA with consulting branches in Rochester, MN; Minneapolis, MN; New York, NY; and Detroit, MI. Our staff is made up of Java and Web developers specializing in work with rapid Web application development.

Many of the team are ex-IBMers and had worked in the Rochester, MN plant for years. PlanetJ has done extensive work with some very well known businesses around the world such as Wells Fargo Bank, Wabash National, Schneider Trucking, Essex Technology Group, Flowserve Corporation, and Cybra.

A list of references for PlanetJ:

http://www.planetjavainc.com/wow_docs/PlanetJ_ref_test.htm

The WOW product has been awarded the Gold medal in application development tools by Search400 editors in the last two consecutive years and the Silver award the year prior. Continuous customer-driven enhancements have made the tool simply unbeatable by competitors.

PlanetJ Corporation is proud of the business partners made throughout the country and internationally including our close relationship with IBM as an Advanced Business Partner. WOW is supported as an IBM ServerProven Product and PlanetJ has partnered with many businesses extensively using WOW to provide cutting edge solutions.

<http://www.planetjavainc.com/whywow.htm>

11) Does the company provide good customer service and support?

- ✓ What is the process for technical support?
- ✓ What are the hours of service?
- ✓ How was the support during the prototyping period?
- ✓ How satisfied are existing customers?
- ✓ Will they be there when I need them?

Why is this important? You should also be able to test the product in your environment and use the support service to “test” the way support questions are handled – are they timely and complete? This will be a good indication of the support you will receive once you begin using the tools. Also, gathering information from existing references or customers will also help you determine the type of support you should expect after purchase.

PlanetJ Corporation prides itself on its relationships with business partners, current customers, and others within the industry. PlanetJ has an experienced, knowledgeable and helpful support staff with the main objective of providing quick, yet accurate, solutions to your problem.

Typical support related questions are answered within minutes to hours of submitting them on the email support line. Hours of support are from 6:00am to 6:00pm Pacific Time Monday-Friday. Extended support can be arranged as needed.

12) What are your primary goals?

- ✓ Speed of design and development
- ✓ Not having to start from scratch
- ✓ Do you have multiple projects or one or two applications?
- ✓ Do you plan to outsource any of the project(s)?

Why is this important? The tool should provide the means to create complex web applications within days or weeks rather than months or years. The tool should be able to integrate with existing business logic and code to prevent the need to re-invent the wheel. Vendors should offer comprehensive education and outsourcing services to aid you in development should the need arise. It is possible that the vendor supplying the tool can build your application for a more reasonable price than purchasing their product. Check out all services options as well. This could be a (less obvious) way for you to complete your projects, in time and within budget.

The WOW product has shown organization productivity increasing as much as 100-400 times that of traditional coding. Some web applications can be created within a few hours while others within days or weeks. If your business has multiple applications, a tool like WOW can pay for itself nearly immediately and multiple times over – easily justifying cost.

PlanetJ Corporation also offers a wide variety of services to help you plan your projects. PlanetJ Corporation offers services either by the hour or by fixed bid. Using the WOW product, PlanetJ staff can develop applications faster than any other organization. If your staff is limited in web development skills or you are too busy to take on another project, using WOW, PlanetJ can assist you and get business critical applications running fast.