



Open Source at Microsoft

Developer Choice: Opening ASP.NET AJAX

The open source approach has been a catalyst for changing how people think about software development. Like many developers and software vendors, Microsoft® has carefully assessed how open source may affect its business and how the company can both enable developers and benefit customers by participating in a broad developer community. Many groups within Microsoft are adopting some processes and methods typical of open source development, and the AJAX Control Toolkit project is an ideal study for this case.

Compatible with most popular browsers, AJAX (Asynchronous Javascript and XML) is a popular technique for creating interactive and highly personalized Web experiences, compatible with most popular web browsers. AJAX enables developers to create web-based interfaces that are more responsive and user-friendly than traditional web pages. Building on top of the industry-leading ASP.NET technology, Microsoft's ASP.NET AJAX Extensions gives developers an easy way to build websites that take advantage this and integrate AJAX into their websites.

This functionality is available as a freely downloadable add-on to the .NET Framework 2.0, and an additional download is available that contains the source-code for the ASP.NET AJAX Extensions package. The ASP.NET AJAX Extensions deliver a solid, robust core of AJAX functionality to ASP.NET developers, but Microsoft took this a step further and created a shared-source project called the [AJAX Control Toolkit](#) which delivers additional functionality that developers can take advantage of when building rich, interactive web user experiences. The AJAX Control Toolkit is hosted on Microsoft's CodePlex website and may be

downloaded with or without fully-buildable source code.

When structuring the development model for the AJAX Control Toolkit, Shawne Burke, Director, Microsoft .NET Developer Platform, adopted a model that closely mirrors an open source project. The ASP.NET AJAX team has been successful by optimizing for short release cycles that enable greater efficiency and increased community involvement. As with open source projects, members of the community are able to submit features, bug fixes, and bug reports directly to the AJAX Control Toolkit project via CodePlex.

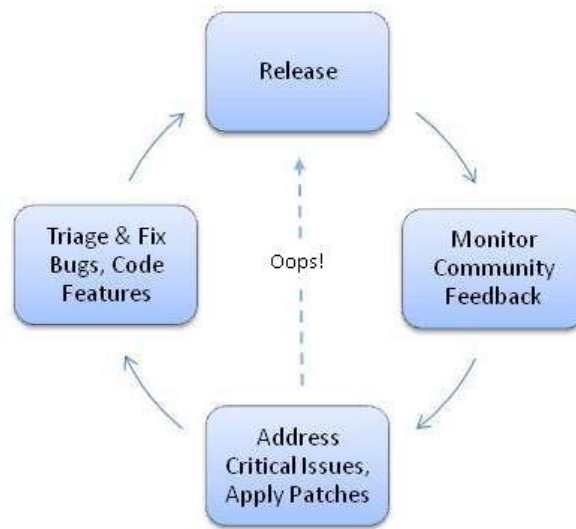


Figure 1: AJAX Control Toolkit process

As shown in Figure 1, the development process is iterative. Changes implemented in each release are carefully planned to maintain a balance between time to market and robustness of releases. The release process is heavily dependent upon the community's participation. All releases are planned based on factors that are primarily influenced by the community through votes, bug reports, and forum activity. In addition, the community can contribute patches that may be rolled into the next release. Based on the community

feedback, volume of submitted fixes, and resources available, work items are determined for the next release and assigned. After testing and release, the process begins again.

The support model for the AJAX Control Toolkit is also different from traditional Microsoft products. Rather than being supported by Microsoft directly, the AJAX Control Toolkit is community supported. There are two options for resolving issues with the Toolkit: one for those who want to debug and fix an issue themselves, and one for those who prefer not to do the development work.

Burke classifies the two options as *Standard* and *Advanced* support. Figure 2 outlines the two support options.

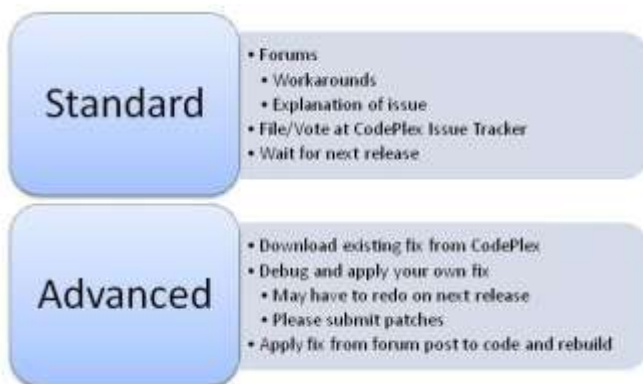


Figure 2: Standard and advanced support options

As with the development process, the AJAX Control Toolkit community both benefits from and contributes in a collaborative process. In critical cases, fixes are checked in within hours or days so that issues in new releases are short lived. Other issues are resolved based on their severity or degree of impact to the community.

To enable the AJAX Control Toolkit to function as it does, Microsoft also had to give careful thought to the licensing process. Like most development models, no one method works

well in all situations. In fact, a mixture of licenses with varying levels of permissiveness has enabled developers to creatively solve their technical problems while also protecting core components. This enables Microsoft to manage and maintain these components for the benefit of its customers.

As with all its decisions to adopt an open source development model, Microsoft first conducted an assessment based on customer needs, technical supportability, and developer value. This assessment greatly influenced the licensing structure for the AJAX Control Toolkit. If Microsoft committed to provide technical support, the code could not be fully released under a permissive license that allowed community contributions. Changes to key components would make providing direct technical support for the technology difficult. Changes to key components would make providing direct technical support for the technology difficult. At the same time, many of these components also needed to be made available to allow developers to fully understand the framework for debugging and performance tweaking.

To best provide code in a meaningful way to the development community while still offering technical support and a rich experience, Microsoft chose a three-tier licensing model for the ASP.NET AJAX Extensions and the AJAX Control Toolkit, shown in Figure 3.

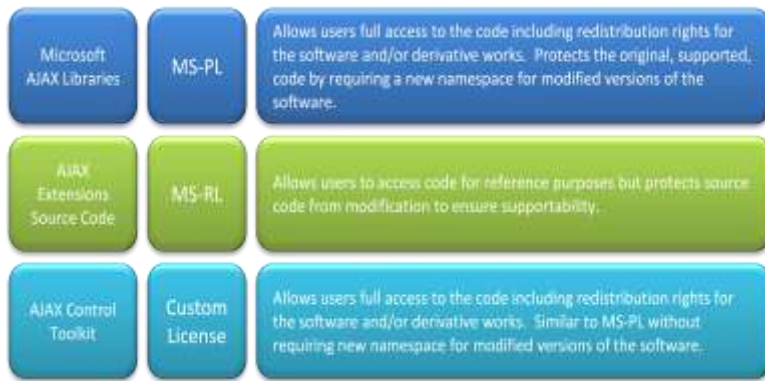


Figure 3: ASP.NET AJAX licensing structure

Through this licensing structure, developers are free to use the software for their own or their customers' benefit and have source access for debugging. Microsoft can still provide technical support for the core ASP.NET AJAX Extensions project, which furthers the value of the software. In addition, this structure has enabled the community to develop a number of other projects intended to extend the value of ASP.NET AJAX with the AJAX Control Toolkit. Many of these projects reside on CodePlex and range from enhancements of the Javascript Libraries ([ASP.NET AJAX Enhancements Library](#)) and extensions to PHP ([PHP for Microsoft AJAX Library](#)) to an extension toolkit for Microsoft SharePoint® ([SharePoint AJAX Toolkit](#)).

“This is a new development model for us here at Microsoft and we're having a good time doing things in an Agile way that's really integrated with our customers,” says Burke on his [blog](#).

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