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Menu

Ajax: A New Approach to Web Applications

February 18, 2005 | By Jesse James Garrett

If anything about current interaction design can be called "glamorous," it's creating Web applicatio
wasn't on the Web? (Okay, besides the iPod.) All the cool, innovative new projects are online.

Despite this, Web interaction designers can't help but feel a little envious of our colleagues who cre
on the Web. The same simplicity that enabled the Web's rapid proliferation also creates a gap betwe

That gap is closing. Take a look at Google Suggest. Watch the way the suggested terms update as y
around a bit. Again, everything happens almost instantly, with no waiting for pages to reload.

Google Suggest and Google Maps are two examples of a new approach to web applications that we
represents a fundamental shift in what's possible on the Web.

Defining Ajax

Ajax isn't a technology. It's really several technologies, each flourishing in its own right, coming to

- standards-based presentation using XHTML and CSS;
- dynamic display and interaction using the Document Object Model;
- data interchange and manipulation using XML and XSLT;
- asynchronous data retrieval using XMLHttpRequest;
- and JavaScript binding everything together.

The classic web application model works like this: Most user actions in the interface trigger an HTT

talking to various legacy systems — and then returns an HTML page to the client. It's a model adap
know, what makes the Web good for hypertext doesn't necessarily make it good for software applic

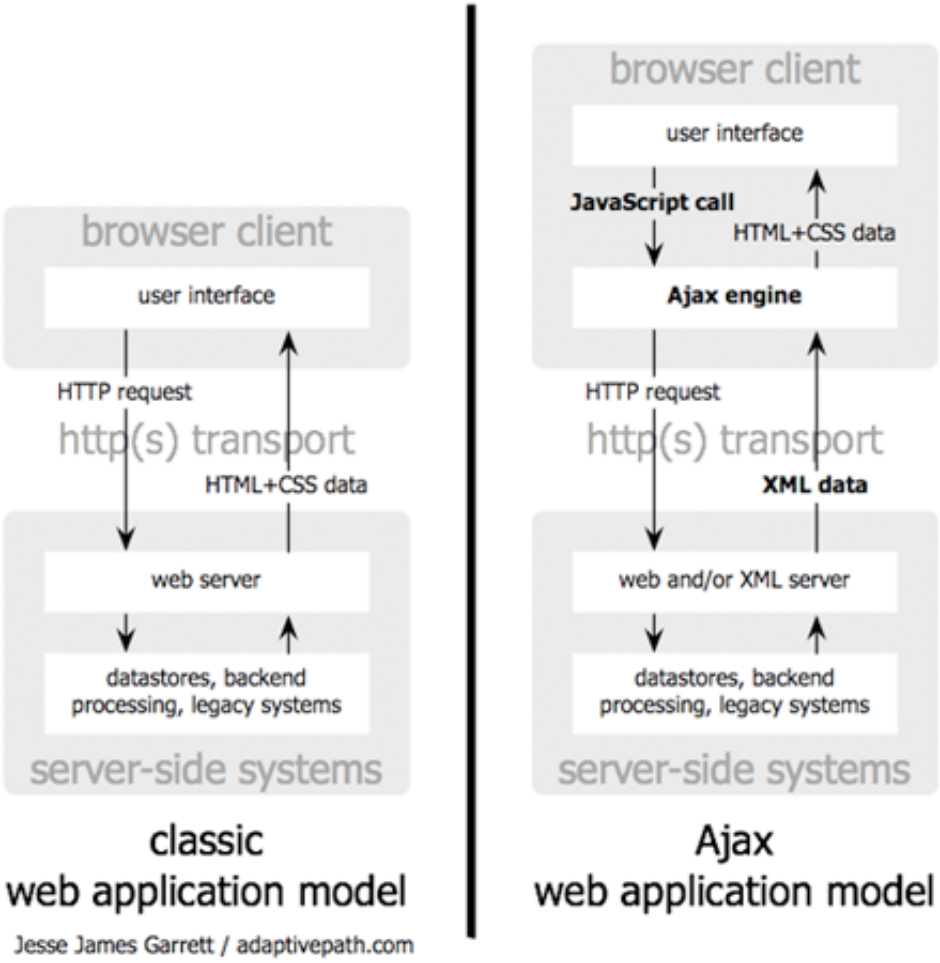

Figure 1: The traditional model for web applications (left) compared to the Ajax model (right).

This approach makes a lot of technical sense, but it doesn't make for a great user experience. While
waits some more.

Obviously, if we were designing the Web from scratch for applications, we wouldn't make users wa
application needs something from the server? In fact, why should the user see the application go to

How Ajax is Different

An Ajax application eliminates the start-stop-start-stop nature of interaction on the Web by introduc
application would make it less responsive, but the opposite is true.

Instead of loading a webpage, at the start of the session, the browser loads an Ajax engine — writte
interface the user sees and communicating with the server on the user's behalf. The Ajax engine all
with the server. So the user is never staring at a blank browser window and an hourglass icon, waiti

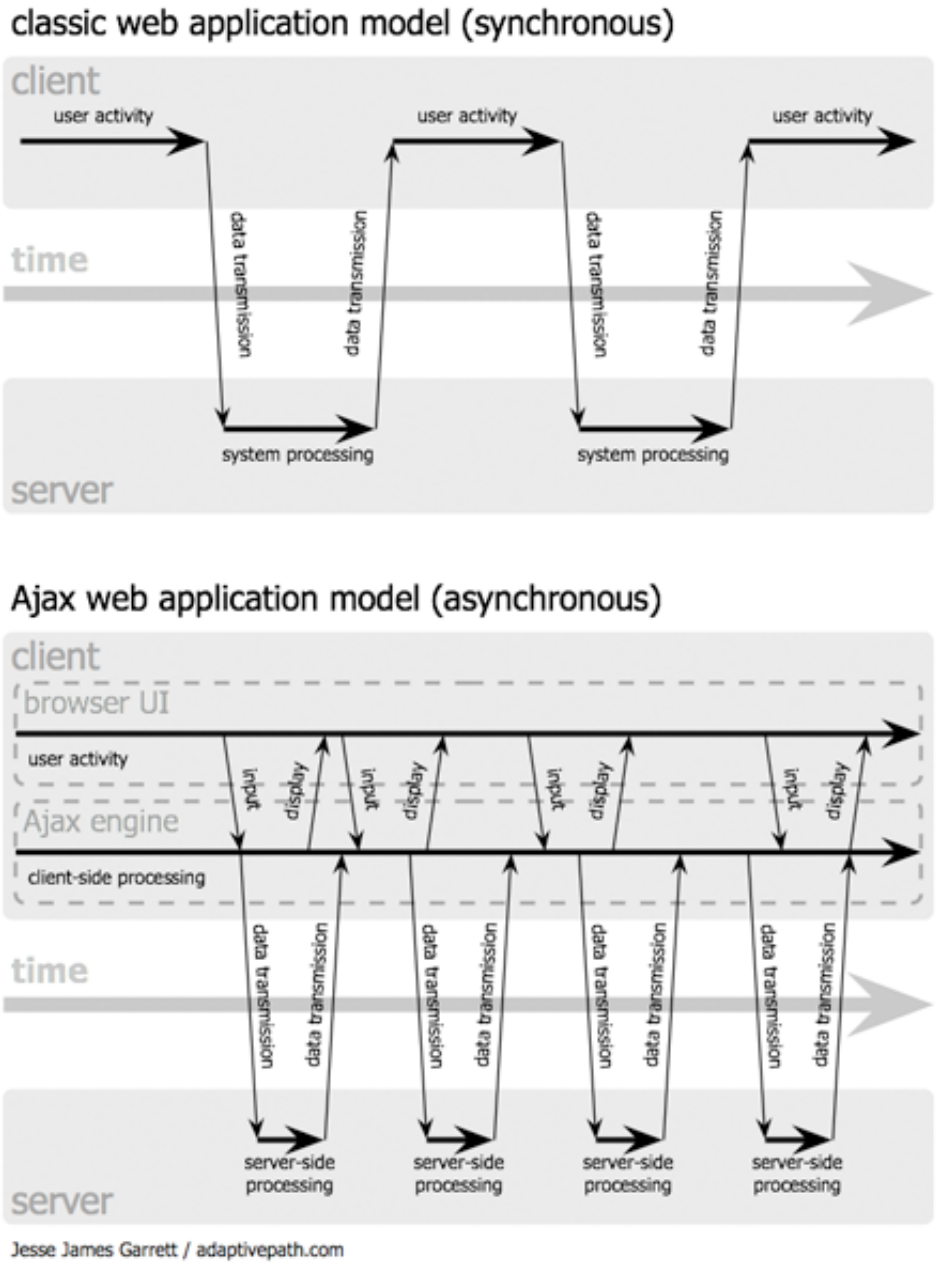

Figure 2: The synchronous interaction pattern of a traditional web application (top) compared with

Every user action that normally would generate an HTTP request takes the form of a JavaScript call such as simple data validation, editing data in memory, and even some navigation — the engine har for processing, loading additional interface code, or retrieving new data — the engine makes those r

Who's Using Ajax

Google is making a huge investment in developing the Ajax approach. All of the major products Go Suggest, and Google Maps — are Ajax applications. (For more on the technical nuts and bolts of th Others are following suit: many of the features that people love in Flickr depend on Ajax, and Ama

These projects demonstrate that Ajax is not only technically sound, but also practical for real-world size, from the very simple, single-function Google Suggest to the very complex and sophisticated G

At Adaptive Path, we've been doing our own work with Ajax over the last several months, and we'r

can provide. Ajax is an important development for Web applications, and its importance is only goi technologies, we expect to see many more organizations following Google's lead in reaping the con

Moving Forward

The biggest challenges in creating Ajax applications are not technical. The core Ajax technologies a forget what we think we know about the limitations of the Web, and begin to imagine a wider, riche

It's going to be fun.

Ajax Q&A

March 13, 2005: Since we first published Jesse's essay, we've received an enormous amount of co common queries.

Q. Did Adaptive Path invent Ajax? Did Google? Did Adaptive Path help build Google's Ajax appli

A. Neither Adaptive Path nor Google invented Ajax. Google's recent products are simply the highe Ajax applications, but we have been doing Ajax work for some of our other clients.

Q. Is Adaptive Path selling Ajax components or trademarking the name? Where can I download it?

A. Ajax isn't something you can download. It's an approach — a way of thinking about the architec to Adaptive Path.

Q. Is Ajax just another name for XMLHttpRequest?

A. No. XMLHttpRequest is only part of the Ajax equation. XMLHttpRequest is the technical comp described in the article, which relies not only on XMLHttpRequest, but on CSS, DOM, and other te

Q. Why did you feel the need to give this a name?

A. I needed something shorter than "Asynchronous JavaScript+CSS+DOM+XMLHttpRequest" to u

Q. Techniques for asynchronous server communication have been around for years. What makes Aj

A. What's new is the prominent use of these techniques in real-world applications to change the fun industry's understanding of how to deploy them most effectively have taken time to develop.

Q. Is Ajax a technology platform or is it an architectural style?

A. It's both. Ajax is a set of technologies being used together in a particular way.

Q. What kinds of applications is Ajax best suited for?

A. We don't know yet. Because this is a relatively new approach, our understanding of where Ajax appropriate solution to a problem.

Q. Does this mean Adaptive Path is anti-Flash?

A. Not at all. Macromedia is an Adaptive Path client, and we've long been supporters of Flash techı and sometimes Flash will be the better solution. We're also interested in exploring ways the technol

Q. Does Ajax have significant accessibility or browser compatibility limitations? Do Ajax applicati development? Can Ajax applications be made to work for users who have JavaScript turned off?

A. The answer to all of these questions is "maybe". Many developers are already working on ways t we expect the Ajax development community to uncover more issues like these along the way.

Q. Some of the Google examples you cite don't use XML at all. Do I have to use XML and/or XSL

A. No. XML is the most fully-developed means of getting data in and out of an Ajax client, but ther any similar means of structuring data for interchange.

Q. Are Ajax applications easier to develop than traditional web applications?

A. Not necessarily. Ajax applications inevitably involve running complex JavaScript code on the cl tools and frameworks will be needed to help us meet that challenge.

Q. Do Ajax applications always deliver a better experience than traditional web applications?

A. Not necessarily. Ajax gives interaction designers more flexibility. However, the more power we experience of our applications, not degrade it.

This article is translated to Serbo-Croatian language by Jovana Milutinovich from Webhostinggeeks

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