IMPACT OF AJAX IN WEB APPLICATIONS

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ABSTRACT
This paper represents how to reduce the traffic in web applications and to make high interactive web applications with rich client interface. There are several highly interactive web applications and web sites. Those sites faced a common problem of page refreshing and data trafficking. Sometimes user has to wait for long time to reload the page. This paper also presents the interactive responsiveness from the server as well as from user’s perspective. To avoid such kind of situation AJAX came to a rescue. AJAX has several advantages and impact of web applications compares to standard web applications and it also has several features which overpass the normal web applications. It also saves the round trip to the server.

KEYWORDS Web, Web Application, AJAX, Impact

INTRODUCTION
Today the consumer of a Web site can be as responsible for its content, direction, and success as the publisher. Social networking sites, blogs, online photo journals are just a few of the new styles of Web sites springing up every day. [1] We have seen many web sites are slow and takes much time to load. As a user nobody wants to wait bit longer to just open the whole content are load. Imagine a situation when the web page contains some flash or big image with some animation. It takes time for reloading all these things. Every time you do not want to load the whole page again, instead people will prefer for loading the only some content which are changing frequently. The new trends work into that direction, now a days the web sites are build in such a way that it will refresh only those part which are required and which can be updated without refreshing the whole page. In the traditional Web application, the interaction between the customer and the server goes like this: [3]

- In normal web applications, User accesses web application
- Interaction between the user and the server is synchronous. This means that one has to happen after the other. If a user clicks a link, the request is sent to the server, which then sends the result back.
- Server processes request and sends data to the browser while the user waits
- User clicks on a link or communicate with the application
- Server processes request and sends data back to the browser while the user waits

This is a long process and user has to wait a lot. To avoid this scenario AJAX is useful.

AJAX
After studying several web sites we came to know that to overcome this problem there is a way by which we can effectively developed web applications. AJAX is the technology by which we can create web sites using dynamic features and it also looks better and effective. AJAX (Asynchronous JavaScript and XML) enables you to refresh part of a web page without having to send the entire page back to the server. The AJAX-style of development is used in high-profile websites like Google, Flicker, and Amazon, and has rapidly gained popularity within the ASP.NET development community because of its ability to deliver rich, fast-loading, user-friendly applications that meet the demands of today's organizations. Recognizing the significance of AJAX, Microsoft recently introduced the Atlas project, an extension to ASP.NET 2.0, designed to make simpler the execution of AJAX functionality. AJAX is not a new technology but a combination of several existing technologies in a new way. These include HTML, CSS, DOM, XML, XSLT, XMLHttpRequest and Javascript. AJAX applications eliminate the start-stop-start-stop nature of traditional web pages hence allow web application to look and behave like the desktop ones, of course to a limited extent. AJAX allows pages to request small bits of information from the server instead of entire pages. This incremental updating of pages eliminates the page refresh problem and slow response that have plagued Web applications since their inception. [2] Ajax is a way of developing Web applications that combines: [3]

- XHTML and CSS standards based management
- Interaction with the page through the Document Object Model
- Data interchange with XML and XSLT
- Asynchronous data retrieval with XMLHttpRequest
- JavaScript to bind it all collectively
AJAX uses XHTML for the data presentation of the view layer, DOM, short for Document Object Model, which dynamically manipulates the presentation, XML for data exchange, and XMLHttpRequest as the exchange engine that ties everything together. Fig.1 shows the normal behavior between the Simple HTML Page and the AJAX enable page. The fig. shows the different events occur while page is refreshed or reload. AJAX uses XHTML for the data presentation of the view layer, DOM, short for
Document Object Model, which dynamically manipulates the presentation, XML for data exchange, and XMLHttpRequest as the exchange engine that ties everything together. AJAX works on I.E. 5.0+, Mozilla 1.0+, Firefox 1.0+, Netscape 7.0+, and Apple added it to Safari 1.2+. [3]

Despite the fact that it's cool and sometimes developers jump on a technology bandwagon for the sake of doing something new and different, there are real benefits that can be achieved through the use of AJAX and similar technologies.[4]

Fig. 1 Simple HTML and AJAX page Events

Ajax is a design approach and a set of techniques for delivering a highly interactive, desktop-like user experience for Web applications in popular HTML browsers.[5]

There are several common and frequently used examples of applications that would benefit from AJAX while searching for information and displaying it back in a table, related select dropdowns, or checking if a user exists before submitting an entire form. Our goal in writing this paper is to expand your knowledge of a central component of ASP.NET AJAX controls and to show how advanced programming of ASP.NET AJAX is achieved using it.

DEVELOPED SYSTEM

To clarify our point here we are representing a web application which we have developed. The web application used several features of AJAX. As we all know that when we are registering any web site we have to create our account by providing the username and password. We cannot judge our password whether it is strong, weak, easily guessable. There may be a chance of brute force attacks and sometime it may damage the user accounts or confidential information. Fig.2 shows the feature of password strength which is provided by the AJAX.

There are also several features which ease the user experience. One of important feature is text formatting feature which provides the editor look. Imagine a situation where we want to send the email or text with some formatting like making the text bold or italic, want to give some kind of indentation or want to give bulleted kind of effect. It is hard to give such kind of effect or facility in web sites. We can give such facility in desktop using using VB.Net or C#.Net, but if want same facility in web applications then there is no facility till AJAX came. Earlier we have to write tons of code for achieving similar functionality. We remember the old days when we have written almost 1000 lines of code for achieving similar kind of functionality.

IMPACT OF AJAX

AJAX user interfaces are highly responsive giving users the feeling that changes are instantaneous.[2] AJAX moves web-based applications from a page model to a true application model, based on events and user actions rather than pages[4]. Here are major impact criteria are given for considering the impact of AJAX in the web applications which are highly interactive.

- User can use standard web browsers like I.E, Mozilla, Firefox, Netscape etc.
- User is not forced to wait till the whole page is loaded or refreshed.
- Even in case of an error in one segment other segments can stay usable.
- It normally avoids scrollbars and makes user experience flexible.
- Data is manipulated in XML format so it can be easy to interoperate with other languages like PHP, Perl, CGI, ASP.NET.

CONCLUSION

By studying the several materials related to the problems facing by several users and for the significance of AJAX, we can now say that it reduces several efforts from developer side. It also provides the flexibility to the users as well as developers. We can conclude that AJAX has very high impact on developing the Rich Client Applications.

REFERENCES

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Fig. 2 Ajax Feature for password strength

Fig. 3 Ajax Feature for Formatting