The Benefits of Modern Web Technologies

Traditionally, web sites delivered static content. That is, once content had been designed and produced, it could not be changed dynamically. Technologies such as JSP, PHP and Microsoft’s ASP.NET, have provided a definite improvement but still fall somewhat short when it comes to a user experience that is more akin to using a desktop application. More recently, web technology has grown and evolved to the point where the experience is more comparable. The phrase ‘single-page application’ has been coined to describe rich, responsive web applications that behave more like native desktop applications. There are several modern web technologies, which are utilized here at Lhasa, that have made this possible, and these are discussed briefly in this article.

AJAX

The emergence of AJAX has perhaps had the most dramatic effect on a user’s experience in the web. The traditional web model for updating the content of a web page requires the browser to request an update. The web site then sends a completely fresh page, even if the user only changed the value of one field. AJAX enables browsers to send and receive small chunks of information which is much more efficient. Similarly by leveraging Javascript (see below for more information) the content of part of a page can be updated dynamically. This results in a much more responsive application.

SVG

Another technology, which has existed for some time, but which has gained increasing support in the web, is the vector graphics format SVG. This has been incorporated into the HTML5 standard which has resulted in wider support in web browsers. One of the principal benefits of SVG over other graphics formats (e.g. bitmap) is that it scales without loss of fidelity. As well as improving user interaction, this means that only a single more compact representation of an image is necessary for display which improves performance. A final advantage of SVG is that it is easy to facilitate user interaction with a part of an image, thus making it a flexible graphics format.

CSS3 and Javascript

In today’s modern era of technology, users no longer interact with the web solely via a desktop computer. Nowadays, laptops, mobile phones and tablets are commonly used to navigate the web, and the list of devices continues to grow. This introduces a further complication for web application designers, because now more than ever there is a need to cater for not just multiple screen resolutions, but also multiple screen form factors. The look and feel language of the web, CSS is now in its third generation, and provides better support to enable web developers to overcome these issues.

Javascript is the last of the technologies discussed in this article. As we saw earlier, Javascript is part of the AJAX technology. Its uptake has increased significantly over the last few years. This has resulted in the emergence of a number of good quality open source libraries such as d3 and jQuery which wrap up useful functionality.
In summary, technologies such as AJAX, SVG, CSS3 and Javascript have enabled web sites to evolve into web applications, providing a rich user experience. Where will web technologies take us next? Only time will tell!