PARALLAX SCROLLING IN WEB DESIGN

Belarusian State University of Informatics and Radioelectronics
Minsk, Republic of Belarus

Garbuzov E. V.

Liahushevich S. I. – Assistant professor,
candidate of physical and mathematical sciences

The purpose of this paper is to examine the usage of the parallax scrolling technique in web design, find out its advantages and disadvantages and to investigate its impact on user experience.

Parallax scrolling is a technique which has been applied to an increasing number of websites on the Internet in recent years. The term “parallax scrolling” is not new and dates back to the 1980s when it was first applied in game design.

Parallax scrolling is a technique in computer graphics where background images move by the camera slower than foreground images. It creates an illusion of depth in a 2D scene and adds to the immersion.

The word "parallax" is taken from astronomy and is defined as the apparent displacement or the difference in apparent direction of something when viewed from two different vantage points.

It is generally accepted that web designers began incorporating parallax scrolling in 2011 using HTML5 and CSS3. Advocates argue it is a simple way to embrace the fluidity of the Web. Proponents use parallax backgrounds as a tool to better engage users and improve the overall experience that a website provides. An example of parallax scrolling is given in Figure 1.

At the moment there is a large number of programming libraries for adding parallax scrolling effect to a client-side part of a website. These libraries are written both for standalone usage and for integration with common web frameworks.

There are also many ways to implement parallax scrolling without using already written libraries. The implementation is most often based on creation of a certain number of layers within a container. Each layer is given its own offset (depth).

It is worth mentioning that there are two general approaches for the implementation of parallax scrolling with the usage of web technologies at the moment: the CSS approach and the JavaScript approach.

One of the most well-known pieces of research regarding the usage of parallax scrolling in web design is the research done by a group of associates from Midwestern (Purdue) University. The technique was investigated from the point of view of UX being a combination of fun, usability, visual appeal, satisfaction, and enjoyment that a user experiences.

The research showed that no significant differences were found between the two groups of participants with respect to perceived usability, enjoyment, satisfaction and visual appeal. However, the investigation showed that the usage of parallax scrolling on websites increases the fun constituent.

After the research, the advantages and disadvantages of the parallax scrolling technique were formulated.

Advantages:

- Aesthetic appeal
- Draws user’s attention
- Better in hedonic and fun context

Disadvantages:

- Possible motion sickness
- Usability issues

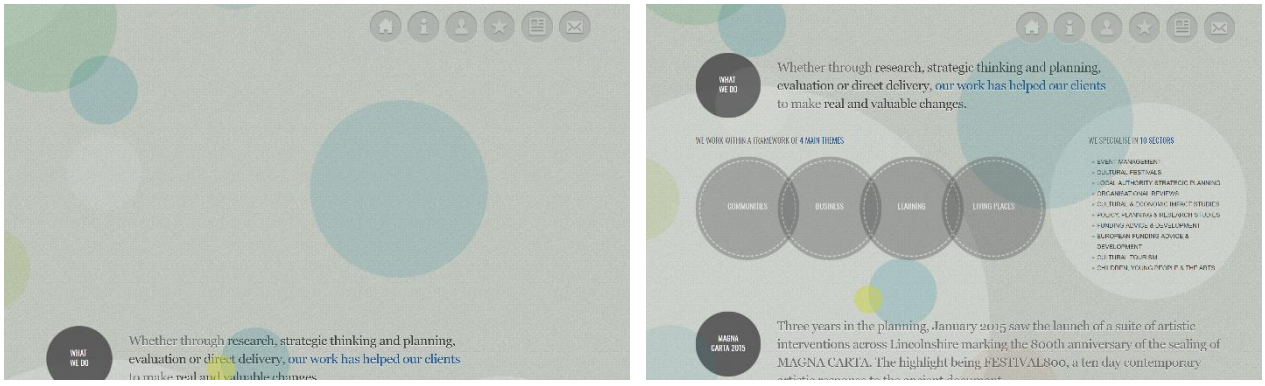

Figure 1. “Parallax scrolling illustration”

References:

i. The Effects of Parallax Scrolling on User Experience in Web Design – Dede Frederick, 2015.
ii. Handcrafted CSS: More Bulletproof Web Design – Dan Cederholm, Berkeley, 2010.
iii. The Art of Parallax Scrolling – Paul Wyatt, 2007