ARCADA

Can an E-commerce site be improved with help of Eye Tracker?

CASE PPS-Shop

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Sammandrag:
Det är viktigt för en webb sida att den fungerar som den skall. Det år också viktigt att sidan är användarvänlig. Ingen vill använda en sida som inte fungerar som den skall eller som man inte hittar den information man söker. Jag tog och undersökte om det är möjligt att förbättra en webbutik med hjälp av Eye Tracker. Eye Tracker räknar ut hur ditt öga rör på sig när du ser på saker och ting. Jag gjorde testet på en webbutik med namnet PPS-Shop, som säljer kosttillskott och andra träning relaterade produkter. Jag började med att ta redan existerande sidan och testade hur consumenternas ögon rör sig på skärmen när de söker efter olika saker. Efter det analyserade jag testet och byggde en ny design på basen av första testet. Efter att nya layouten var färdig gjorde jag nytt test och analyserade om sidans användarvänlighet förbättras. Så fick jag fram resultatet att är det möjligt att förbättra en webbutiks layout med hjälp av en Eye Tracker.

Nyckelord:	Eye Tracker, Användar vänlighet, Webbutik, web design
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Abstract:
It is important for a web site to work as it is supposed to. It is also important that the site is user friendly. No one wants to use a site where one does not find what one is searching for. I decided to research if it is possible to improve an e-commerce site with help of an Eye Tracker. Eye tracker measures and records how your eyes move on a site when you are searching for something. I did my test on an e-commerce site called PPS-Shop. PPS-Shop sells proteins, supplements and other training related products. I started with the already existing site and examined how long and where test persons eyes moved while they were searching for different elements. When that I analyzed it and built a new design based on the first test. After the new design was ready I made a new set of tests and saw if the new design worked better than the old one and to see if it is possible to improve an e-commerce site with the help of an Eye Tracker.

Keywords:	Eye Tracker, User Friendly, Web design, E-Commerce
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Tiivistelmä:

On tärkeää että verkkosivusto toimii kuten pitääkin. On myös erittäin tärkeää että sivusto on käyttäjäystävällinen. Kukaan ei halua käyttää sivustoa jolta ei löydä etsimäänsä informaatiota nopeasti ja helposti. Minä päätin tutkia onko mahdollista parantaa verkkokaupan käyttäjäystävällisyyttä Eye Trackerin avulla. Eye Tracker rekisteröi silmäsi liikkeet näytöllä kun etsit tiettyjä asioita sivustolta. Tein tutkimukseni käyttäen apuna verkkokauppaa nimeltä PPS-Shop. PPS-Shop myy lisravinteita ja muita harjoitteluun liittyviä tuotteita. Aloitin tekemällä ensimmäiset testit jo olemassa olevalla sivustolla. Tämän jälkeen tein sivustolle uuden ja parannellun ulkoasun pohjautuen aikaisempiin testeihin. Tämän jälkeen tein uudet testit uudella ulkoasulla ja tarkistin oliko uusittu versio käyttäjäystävällisempi kuin alkuperäinen. Näin sain selville onko Eye Trackerillä mahdollista parantaa verkkokaupan käyttäjäystävällisyyttä.

Avainsanat:	Eye Tracker, Käyttäjäystävällisyys, verkkokauppa, verkkosivuston suunnittelu
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FOREWORD

It is important to make websites that are easy for the consumer to use. If the consumer does not easily find what they are searching for they will not come back to the site anymore. So if your site is not consumer friendly the user will go to a site that they can use and where they can find what they are searching for.

Jakob Nielsen mentions in his book WWW-suunnittelu (Orig. Designing Web Usability) that a web shop can be the only product a company has. Badly designed site is the same thing as having a shop in the 17th floor and it is only open from three o'clock to four o'clock. (Nielsen 2000 page 14)

I think it is important that anyone who has a web shop should test their sites now and then, so that they know if they should improve their site. That way the site is easier for the customer to use and you know if there is a problem with your site that scares potential customer away.

1   BACKGROUND FOR MY RESEARCH

I decided to use a Finnish web shop, PPS-Shop (PPS), as the test site in my research and see if I can improve their site using Eye tracking. I approached PPS and asked if they would be interested in my findings. We decided that I would report my conclusions to them after my thesis was done.

First I will take a group of people to look at the now existing site and analyze the data. After I analyzed the data I will make some mock-ups, of the site, based on my findings. When I have my mock-ups done I will take a group of people again to look at the mock-ups and see if my changes improved the site and made it more consumer friendly. I will compare PPS's and my mock-ups to Fitnesstukku.fi (FT).

1.1   PPS-Shop

PPS-Shop is a Finnish web shop that sells nutritional supplements and sporting goods. They opened their web shop in 2004 and have been growing ever since to be one of the largest supplement sellers in Finland. They own two stores in Finland, in Espoo and Helsinki, and they are planning on opening a third one.

1.2   Fitnesstukku

Fitnesstukku is part of a bigger company called Gymgrossisten Sweden AB that is part of Qliro Group. Gymgrossisten is one of the biggest nutrition sellers in Northern Europe.

1.3   Eye tracking

Eye tracker was first used in the late 1800s. (Holmqvist-Nyström-Anderson-Dewhurst-Jarodzka- van de Weijer 2011 page 9) The eye tracker measures your eye movement and calculates where you are looking. This way you can get all kind of useful data when you are thinking of your sites user experience.

1.3.1 Heat map

Heat maps tell us where the test persons have been looking at. The area that gets most attention is red, next is yellow and the area that gets the least attention is shown in green.
Heat maps provide quick, very intuitive, and in some cases objective visual representations of eye-tracking data that native users and even children can immediately grasp a meaning from. (Holmqvist-Nyström-Anderson-Dewhurst-Jarodzka- van de Weijer 2011 page 231)

With the help of a heat map I know which parts of the screen get attention when the test persons are looking for the elements. When I know which parts get more attention I can look at the gaze plots to see if one of these parts of the sites gets the first fixations from the test persons.

1.3.2 Gaze plots

Gaze plots show the route the eye has taken. Every fixation the eye makes is marked with a dot and a number so that it is easier to follow the movement of the eye. With the help of gaze plots I can see where the eye moves first, before finding the elements. When I can see the first few movements of the eye I can determine where the different elements should be.

1.3.3 Area of Interest

In the second part of my thesis I will use Areas of Interest (AOI). AOI is an area that you, as a researcher, are interested in. (Holmqvist-Nyström-Anderson-Dewhurst-Jarodzka- van de Weijer 2011 page 187) For Example an AOI could be a part of the screen. What I am measuring with eye tracker, in the second part, is how many fixations (places the participant looks at) the participants have before they find the AOI.

1.4 Test group

I used a group of seventeen (17) people to do the Eye tracker test. The groups' age variation was 19-35 years of age. 59% of the participants were women and 41% were men. None of the participants had heard of PPS-Shop before but two of them thinks they could be shopping on the site in the future.

How often the participants shop online, varies (Figure 1). Many of them shop clothes and tickets but only two of them shop for supplements (Figure 2).
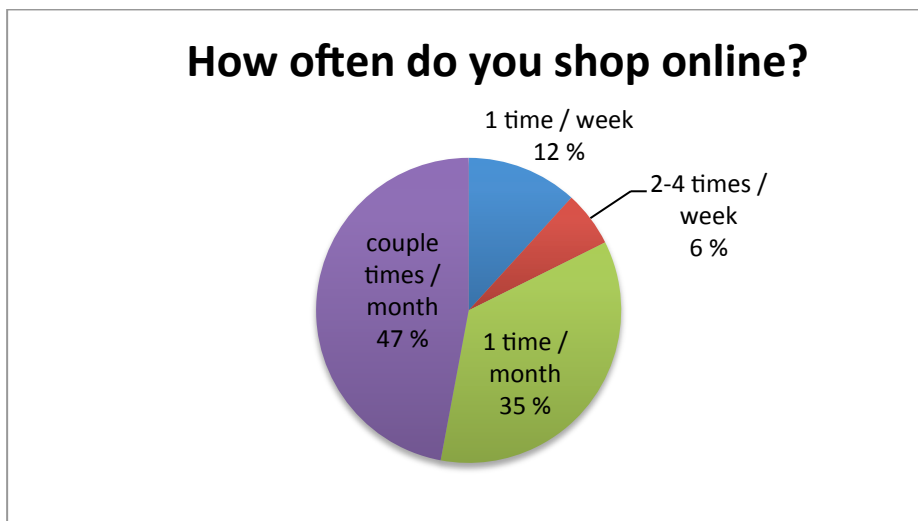
Figure 1. How often my test participants shop online

Figure 2. What my test participants buy online

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1.5 How my test is built and what am I looking for?

In the test, there were seven (7) different simple tasks. The participants saw the task information first for 10 seconds and then they had 15 seconds time to find the object described in the task. Two (2) of the tasks were done on a product site and the other five (5) were done on the first site.

The objects that the participants were supposed to look for were:

- Product categories (first site)
- Search-function (first site)
- Price (product site)
- Shopping cart (first site)
- Link to terms of delivery (first site)
- Buy-button (product site)
- Link to social medias (first site)

1.6 What I do not look for

I had to narrow the thesis down a bit so as to make it possible to do decent research. I decided not to look at which parts of the site get clicked on or what colors gets better noticed. However I will mention if a different font size, weight or color could improve the site or if another color for an element would make it easier to find.

I will not test if there are any technical issues (loading times, browsercompatibility etc.) with the site.

2   EYE TRACKER TEST ON THE OLD SITE

In this chapter I will explain my findings and why I am looking at these different parts of site.

2.1   Product categories

Product categories is the part of the site where you can easily access the different product categories by simply clicking on the topic that you are interested in. This is important to have on your site so that the consumer can easily get to the product category he is looking for and does not have to go through a lot of products that he is not interested in.

There is not only one right answer to where this navigation should be placed. Jakob Nielsen and Marie Tahir mention in their book *Kotisivujen Suunnittelu – Miten teet vetävimmät Web-sivut (Orig. Homepage Usability: 50 Websites Deconstruction)* that you can choose between four different locations on your site where you can put the product category navigation. These four places are:

- Navigation to the left
- Tabs
- Links at the top
- Classes in the middle

Most common of these are having the navigation to the left or to use tabs. (Nielsen-Tahir Page 43)

2.1.1   Heat map

PPS has placed their product category navigation on the left side of their site. As we can see in the heat map (Figure. 3) the left side gets the biggest attention from the test per-

sons. There is also minor attention to the upper part of the site where the navigation is. This could imply that a few persons where searching for a link to products in the navigation. The other possible explanation to why there would be activity in the middle part of the site might be that the test persons looked around the site after they found the categories. You can see that when you take a look at the gaze plots (Figure 4.) that some of the test persons find the AOI fast and start exploring the site after that.

2.1.2 Gaze plot

When looking at the gaze plots you can see that almost everyone finds the categories within just a few fixations. There are only three test persons who go to another direction than left when searching for the categories.

2.1.3 Conclusion

When looking at the heat map and the gaze plots it is easy to say that the product categories are in the right place. Almost every one of the test persons started looking to the left when searching for the categories and the heat map also shows that the most attention is given to the left side. This conclusion is also supported by the findings that Nielsen and Tahir made in their research.

Figure 4 Heat map that shows that the left side gets most attention when test persons look for product categories. Red circle shows where the product categories are located

Figure 3 Gaze plots show that some persons explore the site after they found what they search for.

2.2 Search function

Search function is important for the customers when they know exactly which product they are searching for and want to find it fast.

According to Nielsen and Tahir one should place the search-function in the upper part of the site so that it is easy to find. It should also be designed as a text field so that the consumer doesn't have to go to separate search-page on the site. There are two places where the search-function is normally placed, up in the left part or up in the right side of the site. The most common placement is to place it on the right side. But if the design works better with having the search function on the left side, then that is acceptable. (Nielsen-Tahir page 41)

2.2.1 Heat map

PPS placed their search function on the left side right above the categories. You can see in the heat map (Figure 6) that there are two places on the site that get most of the attention. One is in the upper left corner, where the search function is now, and the other one is on the right side of the page.

Figure 6 You can see in the heat map there are two spots getting a lot of attention. Red circle shows where search-field is located

Figure 5 Gaze plot shows there are two possible places where you can place your search function

2.2.2 Gaze plots

The gaze plots (Figure 5) show the same as the heat map did. There are two clear spots where people are looking at when searching for the search function. No one looks at any other parts of the site than the left side or the right side. There are few persons more, ten (10) people of seventeen (17), looking on the left side than on the right side.

2.2.3 Conclusion

As the heat map and gaze plots show there are two possible places where you can place your search function. On the left side of your site or on the right side. As Nielsen and Tahir pointed out one can place the search function in two different places. PPS has decided to use the left side. This was okay, according to Nielsen and Tahir, if it works fine with the design of their site. What I think they could do is to get rid of the big orange box above the search engine. This way the site would get a bit lighter and the product categories would get a bit higher up on the site as well. I would also like to place the search function in the upper right corner next to the middle navigation above the shopping cart. This way the categories would get even more space and the empty space above the shopping cart would get filled.

2.3 Price on a product site

It is important to show customers the price of the product they are buying. This should be presented clearly so that the customer does not have to search for the price for a long time.

Providing clear information about the price of the product […] will help the customers to decide whether or not to buy the product (Sengar 2015).

PPS has used normal font, size and color to show the price for the product and it does not jump out from the rest of the text or the background. So it can be a bit hard for the customer to find this immediately.

2.3.1 Heat map

As you can see in the heat map (Figure 7) there is a lot of attention around the site. This could mean that test persons have been searching for the price and have not found it immediately.
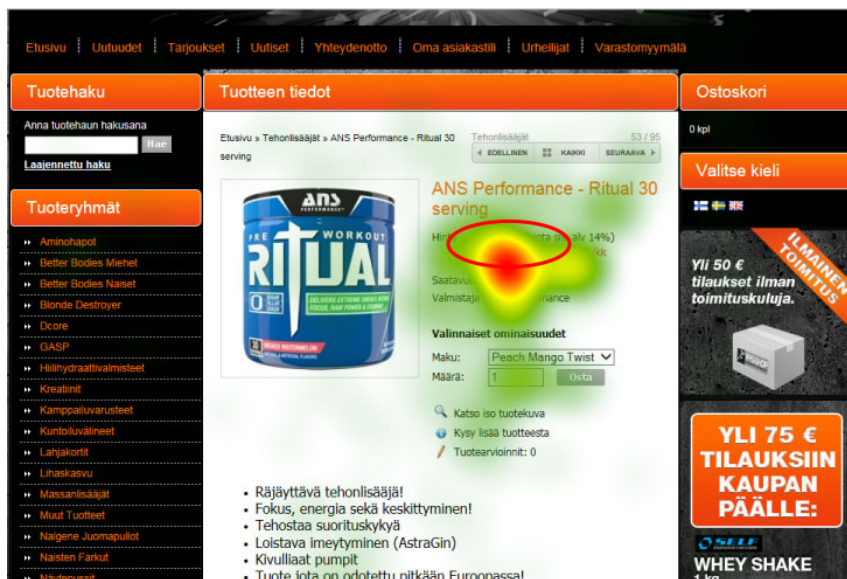
Figure 7. Heat map shows a lot of action all over the site. Red circle shows where the price is located.

2.3.2 Gaze Plots

The gaze plots also show that there are a lot of fixations before the eye finds the area it is searching for (Figure 8). Some of the persons are actually looking all over the site to

find what they are looking for. It looks like the price is almost at the right place because the persons are starting from the middle to search for the price.
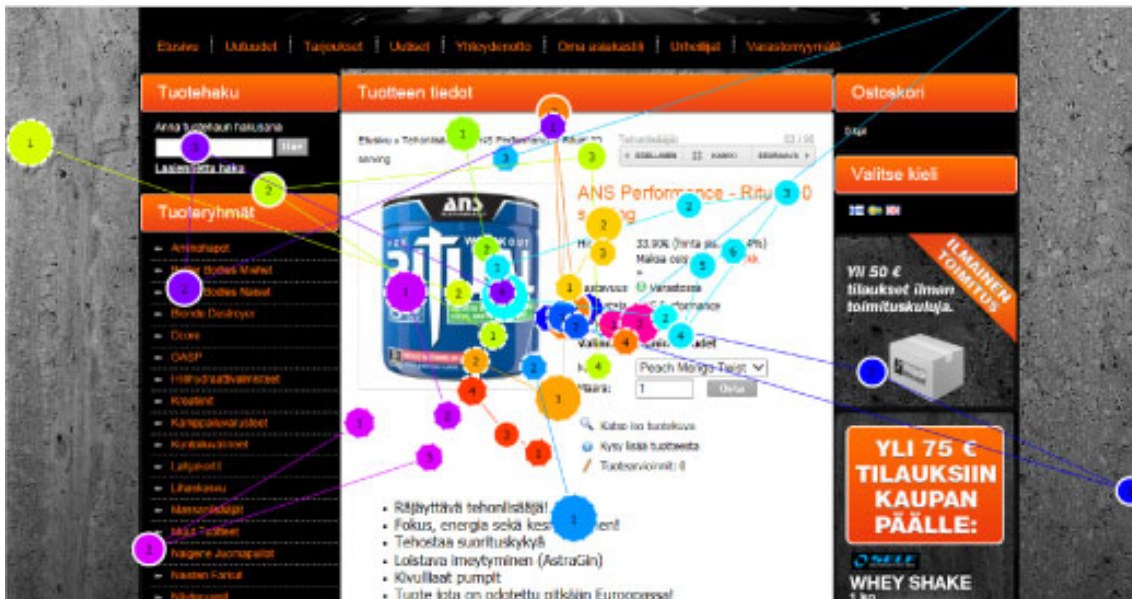
Figure 8. Gaze plots show how test persons look around the site searching for information about the price

2.3.3 Conclusion

The problem with this is not so much that the price might be in the wrong place, but that the font size and/or color is wrong. If it was bigger or a different color it would be easier to notice. Now it blends with the other texts on the site.

2.4 Shopping cart

Shopping cart shows what you are going to buy while you are still browsing the site and discovering new products to buy. The shopping cart is also a great way to see what you are buying and helps you make your decision.

> Many shoppers use the shopping cart to make final purchase decisions. Usable shopping carts provide product detail, allow access to product pages, and let users easily delete items.
>
> −Amy Schade, *Decision Making in the E-Commerce Shopping Cart: 4 Tips for Supporting Users*

2.4.1 Heat map

On PPS' site you can find the shopping cart on the right side of their site. As you can see in the heat map (Figure 10) most of the attention is drawn to the right side of the site. There is a little bit green in the upper part of the site.

Figure 9. Heat map showing a lot of attention on the right side of the site. Red circle shows the location of the shopping cart

2.4.2 Gaze Plots

When looking at the gaze plots (Figure 9.) you notice that some of the test persons look in the middle of the upper part of the site and then go down to the right side. Others start at the right side, where the shopping cart is placed.

Figure 10. Gaze plots showing that some of the test persons looked in the upper middle part while others looked at the right side.

2.4.3 Conclusion

It looks like the shopping cart is in the right place when it is placed on the right side of the site. The other place where you could place it is in the middle of the upper part of the site.

2.5 Terms of delivery

It is important that the clients find the terms of delivery (ToD) so that they know what to expect when ordering from the site, when they can expect to get their package, how much the delivery will cost and what different paying methods there are.

2.5.1 Heat map

There are two places on PPS' site where you can get to the ToD. One is on the right side of the site on the first fold, the viewable area on the site before scrolling (Nielsen 2010). There is a display banner that tells that the delivery is free. The actual link to ToD is on the left side on the last fold of the site.

When looking at the heat map (Figure 11.) you can see that the test persons have been looking around the whole site searching for the link to ToD. The area that gets most of the attention is on the upper part of the site. There is a banner at the top making advertisement for the free delivery for over 50 euros purchase, but the problem is that it is no link to the ToD. So it looks like that is confusing the clients. There is some attention at the link to ToD that is placed at the last fold of the site. But there is not so much attention at the banner on the right side of the site. This might be caused by banner blindness, which Nielsen talks about in his article *Banner blindness: old and new findings*. Basically consumers do not look at anything that looks like an advertisement and passes them while searching for information.

> If users are looking for a quick fact, they want to get done and aren't diverted by banners. (Nielsen 2007)

2.5.2 Gaze plots

When looking at the gaze plots (Figure 12) you notice that many test persons start by going through the links in the middle navigation. After that they start going down on the site. Some of them find the banner to the right that works as a link to the ToD. If they don't notice the banner they continue their way down. Some of them go all the way down to the footer and continues their way a bit up to the left and finds ToD there when others, who did not go to the footer, go to the left side where the ToD is located.

Figure 12. Heat map that shows a lot of attention over the whole site. Red circles shows the location of ToD
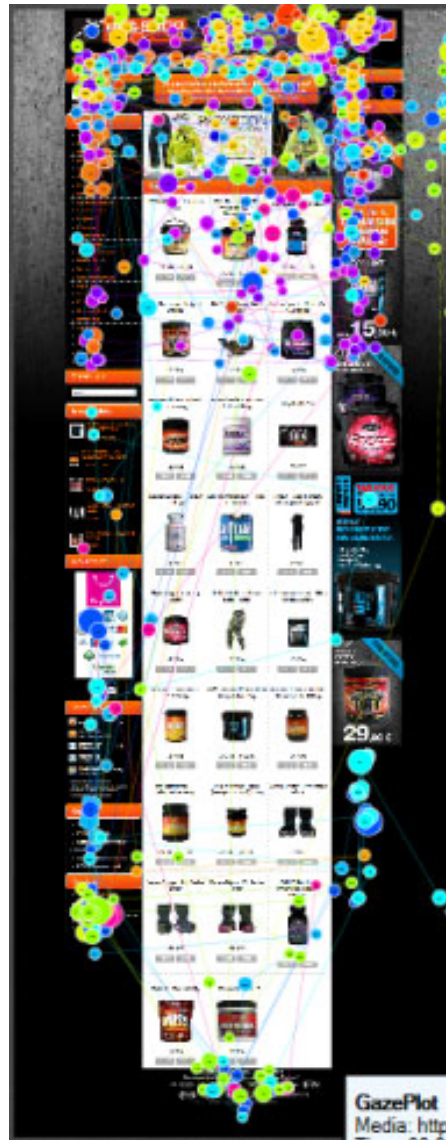
Figure 11. Shows a lot of activity first up in the first fold, around the navigation bar, and after that the gaze plots go further down on the site.

2.5.3 Conclusion

It is hard to find a location that would be easy for customers to find and that way get to the link to ToD. One place would be to make the banner, on the top, as a link to ToD. But that would not be a long lasting solution because banners get changed. The gaze plots indicate that you could put the link in to the navigation bar. Problem with that is that it is hidden and will not be seen if the costumer does not open the drop down menu. The other possibility is to put it in the footer, where some of the test persons where looking at. As the test shows there is not a place on the site where everyone looked first. Sundström mentions that one could place the link to ToD at the same place where you place the shopping cart (Sundström page 396). That could be a good solution. That way the link would be visible on the first fold and should be easier to locate.

2.6 Buy-button on the product site

When you have found the product you want to buy you need to click on the Buy-button. This should be easy to find on the product site. The Buy-button should be visible by color and pop from the rest of the site (Sundström page 392).

2.6.1 Heat map

PPS has put a gray button on their product site to work as a buy-button. When looking at the heat map (Figure 13.) you can see that there is a bit attention around the button. So the test persons have been forced to look for the button. This problem could be solved with adjusting the color of the button. If it would be a bit brighter color it would pop out of the background more and consumers might find the button easier.

2.6.2 Gaze plots

Gaze plots (Figure 14.) show that there is not a problem with the positioning of the button. Almost all test persons look at the area where the button is, or at least around it.

2.6.3 Conclusion

As I said before there is not a big problem with the button. It looks like the consumers find it relatively fast and it is placed at the right area. There is a small thing that could help consumers find the button a bit faster. If the button were some other color, than gray, it would be more visible. Now it blends a bit into the background. Why not use the same orange color they are using now on their site?
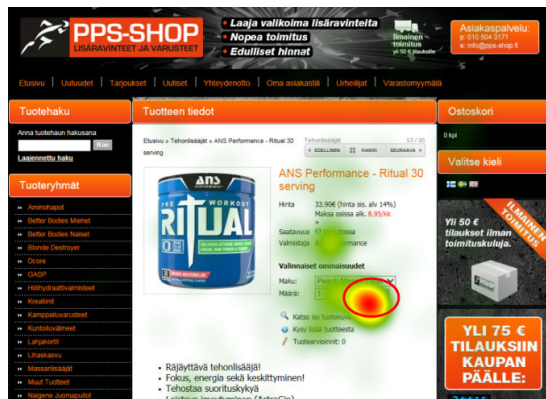
Figure 13. Heat map shows a bit attention around the button as well. Red circle shows the location of the buy-button

Figure 14. Gaze plots show that the test persons are looking at the right area.

2.7 Link to social media

Now days it is important that consumers find easily the links to the social medias. Social networks offer new ways to reach first-time customers, engage and reward existing customers, and showcase the best your brand has to offer (Zorzini 2005). Putting social media links to your site is not easy. They should not dominate the site but if they are hidden then they are useless (Booth 2012).

2.7.1 Heat map

PPS has placed a Facebook feed under the banners on the right side of their site on the last fold. When looking at the heat map (Figure 15) you notice that the test persons where looking all over the site for the social media links.

There is a lot attention at the upper right corner of the site. Some attention can also be found on the last fold on the left side where all information of delivery and paying methods are. Some attention can also naturally be found at the Facebook-feed.

2.7.2 Gaze plots

As the gaze plots show (Figure 16) many of the test persons start looking at the upper part of the site. Most of them are looking to the right side. When they start to move further down on the site almost everyone is looking at the right side of the site. Those who are not looking to the right stays at the middle. There are only two persons looking at the left side.

2.7.3 Conclusion

When looking at the gaze plots and heat map you can see that the social media feed is not placed properly. It is not easy to find because it is right below the banners and as I earlier mentioned many customers do not notice or look at the banners. So what should be done? As seen a lot of the attention in the beginning is at the top right corner. That could be a good place to put some links to social media. That way it would be visible on the first fold and easier and faster to find.

Figure 15. Heat map shows that test persons have been searching for the social medias all over the site. Red circle shows the location of social medias

Figure 16. Many of the test persons start looking to upper right corner when searching for the social medias.

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3 EYE TRACKER TEST ON THE IMPROVED SITE DESIGN

I made a new design on the site based on the previous test I made changing the design on the parts I noticed that needed improving. When the re-design was ready I made new set of Eye tracker tests. After that I compered the results to the old sites test results and saw if the site had improved. I also checked if the new design was user friendlier than the site of Fitnesstukku.

3.1 What needed to be change for the new site

When testing on the real site I noticed that there was five (5) parts of the site that could be improved in the new design. Those five parts are:

- Re-design on for the Buy-button on the product site
- Re-design for the price on the product site
- Placement of the Search-function
- Placement of the social medias
- Placement of ToD

3.1.1 How was the site changed?

I noticed that there was two parts on the product site, Buy-button and price of the product, that was in the correct place but needed to stand out a bit more. So I changed their coloring and font size and weight. The other three parts that needed to be looked at where on the front site. These three needed to be placed correctly and also designed a bit differently.
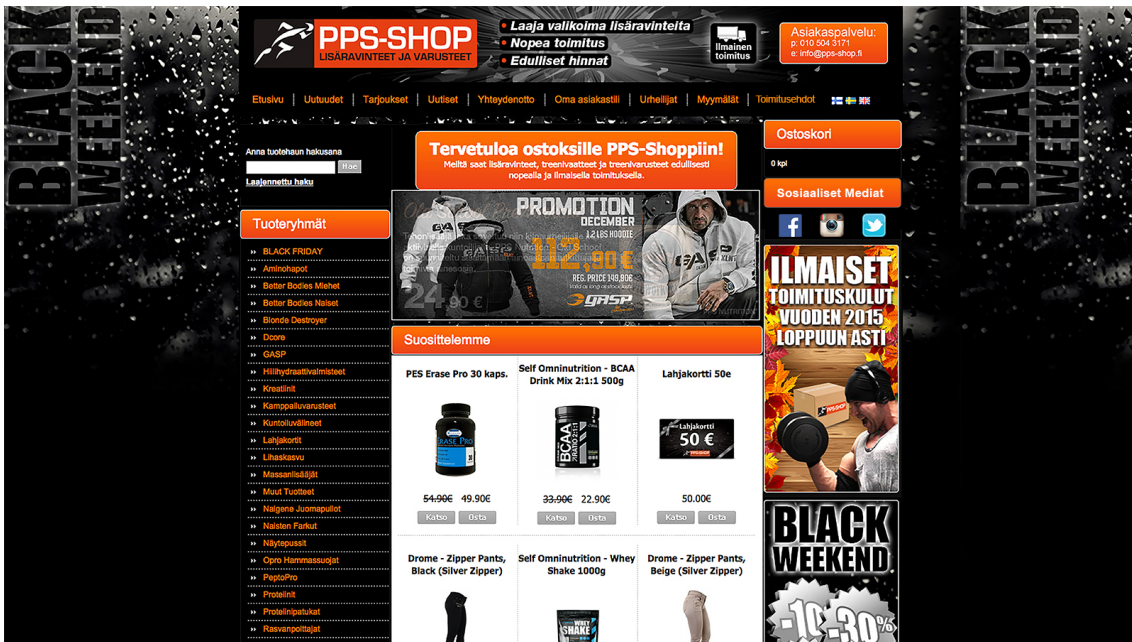
Figure 17 Improved design on the front page

Figure 18 Improved design on the product site

3.2 Improved design on the Buy-button

As showed in the previous test on the real site there was not a lot problems with consumers trying to find the button. But I decided to change the appearance of the button a bit so that it popped out a bit more from the background. The old button was gray and did blend a bit with the background. So I decided to change the color to the same orange color that PPS uses on their site. I also made the button a bit bigger.

3.2.1 Heat map

As seen on in the heat map (Figure 19) there is still a bit green around on the site but it is not as strong as on the old site. So it looks like the customers would find it faster.

Figure 19 There is a lot less green on the site that shows that customers find the button faster

3.2.2 Gaze plots

Gaze plots show (Figure 20) that most of the test subjects start at the middle and start then moving towards the button. There is few moving to up instead of going towards the button.

Figure 20 Gaze plots show the movement towards the buy button

3.2.3 Fixations

In this part you will see the average amount of fixations before the client gets to the object they are searching. You will see the results for the old design, new design and Fitnesstukkus site.

As the table shows (Table 1) the test persons find faster the buy-button on the new design than on the old one.

Site	Average amount of fixations	Amount of test persons that did not find the object
Old design	12,58	4
Improved site	3,22	3
Fitnesstukku	17,50	11

Table 1 It is shown clearly that the new site scores better than the old site and Fitnesstukku

3.2.4 Conclusion

The table shows clearly that it was easier for the test persons to find the button. The improved site scores better than the old site and Fitnesstukkus site. Heat map and gaxe plots backs also this up.

3.3 Improved design for the price

My study showed that the placement of the price was good but it could be more visible. On the real site the price is the same font size, color and weight that the normal text is. That is why it takes a while before the consumer finds it. So I decided to make it bigger and change the color of it. I made it green so that it pops more out from the site.

3.3.1 Heat map

As it is shown in the heat map (Figure 21) there is not a lot of activity on the site else-where than where the price is. There is a bit green shown around the price but that is not a lot.

Figure 21 There is not a lot of action on other parts than where the price is located

3.3.2 Gaze plots

When looking at the gaze plots (Figure 22) you notice fast that there is only one test person that starts to look at the wrong direction. Otherwise most the test subjects find their way fast towards the price.

Figure 22 Gaze plot shows that most of the test persons find their way fast to the price

3.3.3 Fixations

When looking at the table of fixations (Table 2) you can see that the new design work better than the old one. Test subjects needed on the old site more than seven fixations before finding the price. On Fitnesstukkus site the test subjects needed over eight fixations. On the new improved site they needed only three fixations.

Site	Average amount of fixations	Amount of test persons that did not find the object
Old design	7,33	2
Improved site	3,00	1
Fitnesstukku	8,40	10

Table 2 Test subjects need only average of three fixations before finding the price

3.3.4 Conclusion

All three different graphs show that the price is now much more easy and faster to locate. The price is now easier to find on the new design than on the old and on Fitnesstukkus site.

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3.4 Improved design for the search-function

When I did the eye tracker test on the old site it was shown that there is two places where you can place the search-bar. The right side got a bit more attention than the left side in the test. According to Nielsen and Tahir both sides are okay as long as it works with the design. I decided to leave it on the left side because I did not want to fill the right side too much. What I did instead was that I removed the big orange box that was on top of the search-bar. That way I wanted to make the left side lighter and bring the search-bar more visible.

3.4.1 Heat map

Heat map (Figure 23) shows that there is a bit activity on the right side and in the middle of the site. But it is not as much as in the first test. So it could mean that it has been easier to find than in the old design.

Figure 23 There is little action on the right side but not as much as earlier

3.4.2 Gaze plots

When looking at the gaze plots (Figure 24) you notice that almost half of the test persons look first to the right side. It is more than in the first test. So according to the gaze plots the site has not been improved.

Figure 24There is a lot of second and third fixations located on the right side of the site.

3.4.3 Fixations

As seen in the table (Table 3) the test subjects need most fixations with the new design. That means that the old design was user friendlier than the new one.

Site	Average amount of fixations	Amount of test persons that did not find the object
Old design	2,65	0
Improved site	5,33	0
Fitnesstukku	4,40	2

Table 3 Test persons need most fixations with the new site

3.4.4 Conclusion

The new site is not as user friendly as the old one when it comes to the search bar. It was easier for the test persons to find the search function on the old site. It still looks like it does not matter so much if the search bar is on the left or right side of the site. Both sides got attention in the new test.

3.5 Improved placement and design of the social media

In the old version PPS had put their Facebook feed on the bottom half and on the right side of the site. I decided to move them up and locate it on the first fold. I also removed the feed and put only icons that was linked to their Facebook, Instagram and Twitter. That way it should be easier and faster for clients to locate the links to their social media.

3.5.1 Heat map

Heat map (Figure 25) shows that almost all attention is located on the links to social media or close to them. There is a bit green on the right side and in the middle of the site. This could mean that the links are now easier and faster to find.
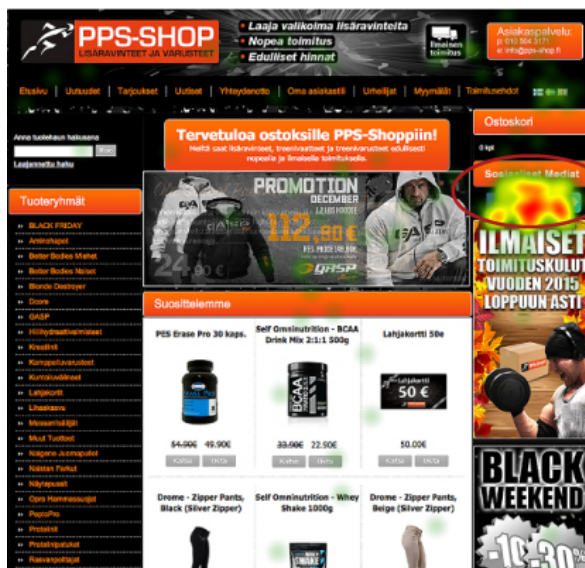

Figure 25 Almost all attention is located on the social medias

3.5.2 Gaze plots

Gaze plots (Figure 26) show that there is a few test persons that start looking at the middle part of the top before they find the links. There is also one that looks at the left side. Many of the test persons look at the top right corner before they locate the links.
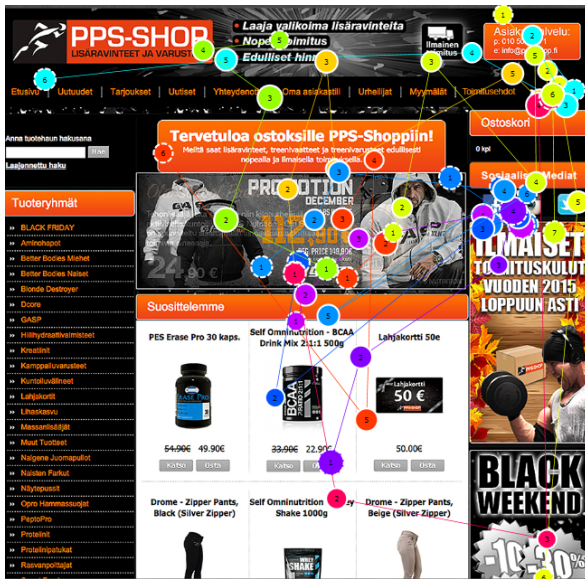
Figure 26 Many look first to the top right corner

3.5.3 Fixations

The table (Table 4) shows clearly that it is a lot easier and faster to find the links on the new site than on the old. Earlier there was thirteen persons that did not locate the links but on the new site everyone found the links. The new site is also friendlier than Fitnesstukkus site. It took almost three times more fixations to find the links on Fitnesstukkus site than on the new improved site.

Site	Average amount of fixations	Amount of test persons that did not find the object
Old design	10,50	13
Improved site	5,83	0
Fitnesstukku	15,33	14

Table 4 Fixations dropped a lot in the new design

3.5.4 Conclusion

The improvement was big on the new design. It took half the time for the test persons to locate the links and everyone found the links on the new design. It is also important to remember that earlier PPS had only a link to their Facebook page even though they have Instagram and Twitter accounts. In the new design there is a link to all of them.

3.6 Placement of the link to terms of delivery

Placing the link to ToD was not easy. I decided to place it in the navigation bar. But I did not hide it in a dropdown menu. I put it as its own topic. That way it is visible all the time and it is placed on first fold of the site.

In the original site it was place on the last fold on the left side. PPS had also a banner that functioned as a link to ToD. But almost no of the test subjects saw it. So it did not work as it should.

3.6.1 Heat map

Heat map (Figure 27) shows that the test persons have been looking quite a lot around the site when searching for the link. There is a lot of activity on the left side navigation where all the products are. Also the top navigation, where the link is located, has a lot of activity.

Figure 27 There is a lot of activity on left side navigation

3.6.2 Gaze plots

Gaze plots (Figure 28) show the same as the heat map did. There is a lot of activity around the site. Many of the test subjects look at the search bar. That could be a way to find the ToD. Some of the test persons find the ToD after just a few fixations.

Figure 28 There is a lot of activity around the site

3.6.3 Fixations

When looking at the fixations one can see that the improved site scores better. It takes half as many fixations for the test subjects to find the ToD and only one test person does not find it. When comparing to Fitnesstukku you see that the amount of fixations is higher than on Fitnesstukkus site. But there is only one test person on Fitnesstukkus site that found the link. So it cannot be better than the improved site.

Site	Average amount of fixations	Amount of test persons that did not find the object
Old design	34,53 / 63,00	2
Improved site	16,64	1
Fitnesstukku	11,00	16

Table 5 New design needed fewer fixations than the old site. Old site had two different links

3.6.4 Conclusion

When looking on the heat map, gaze plots and fixations it is easy to see that the new site works better than the old one. It takes approximately 50% less fixations for the test persons to find the ToD than with the old site.

4   MY FINDINGS

In this part I am going to take a look back at my research and look what worked and what did not. I will also discuss how working with Eye Tracker went and if that is a good method to check if the site is user friendly or not.

4.1 Old design vs. new design

When looking at the results it is easy to say that the new design is more user friendly than the old one. Four out of five improvements worked better than the old one. Only the new design for search function did not work as good as the old one. If one only looks at the results it would be easy to say that Eye Tracker is a great way of testing E-commerce sites.

4.2 Working with Eye Tracker

Eye Tracker is a great tool if you are working with images. It is also possible to test sites, as I have done, but it takes a little more work to go through the results and data that you get. I noticed that when I did the first part of the tests working with live sites the data was not as clear or precise as it was in the second part when I worked with screenshots and images. So to get 100% accurate study images works better than live sites.

4.3 Overall

So as said it is possible to test if a site is user friendly with an Eye Tracker but it takes a bit more work and the results are not precise. But you can do a re-design based on the results and improve your site as I did with PPS.

4.4 PPS-shop response

At the moment my findings have been sent to PPS and I am waiting for their response.

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6   APPENDICES

6.1 Glossary of terms

PPS = PPS-Shop

FT = Fitnesstukku

AOI = Area of Interest

Heat map = A picture that shows where the test persons have looked the most

Gaze plots = shows the route the test persons eye have went

ToD = Terms of delivery

Fold = the viewable area on the site