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| GREENWORLD ELECTRONICS  Usability Design – CA2 | Surendra Dura – 15007669  Keith Feeney – 15015556  BSHC4SD – 2018/9 |

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# Executive Summary

This project will look at designing and developing a high fidelity prototype to critique usability by means of testing. For the purpose of this project, an electronics website similar to the likes of Currys PC World or Dell will be created.

It will be created for people who have an interest to buy electronics and wish to have the latest and most relevant products. The website will represent a fictitious electronics company that has many shops throughout Ireland. It aims to provide a warehouse solution for independent smaller shops and for general customers looking to buy in bulk. It will hold information about products such as specifications, reviews and technical information. The customer can also request product manuals with their order. The website will also have a search feature, contact details and a customer support chat service. The company also has partners that are able to place a recommendation and testimonials on the website.

The data gathering process involves two to three people who will be surveyed. Another set of two to three people will be part of a single-person brainstorming session. This includes looking at different user groups, as well as scenarios and personas to enhance the requirements. A ranked version of the requirements is being used to see how the website behaves. Lastly, the requirements dealing with the functionality and non-functionality were allocated for the website.

The stakeholders in the project are:

* Developers: Surendra Dura, Keith Feeney
* Administrators: GreenWorld Electronics (e.g. website managers, administrators)
* End users: Customers of GreenWorld Electronics.

# Data Elicitation

The data elicitation section was created by using two different styles; brainstorming and surveying.

## Brainstorming

One of the data elicitation style was brainstorming, where the participant was given the Executive Summary and asked to brainstorm ideas on what they would like in a website that is being created. The participant was allowed to use the Internet to look up similar websites and to allow them to generate ideas on what works and what doesn’t work. They were also reminded to keep user-friendliness in mind.

Colm Kilduff:

Colm has said that while he likes the Currys PC World website, it seemed a little cluttered. He pointed out he liked the way that no matter where he was on the website, he could always go to the home page by clicking the logo at the top. He also pointed out that the navigation bar, while good at displaying the general area of sections of the website, showed too much text when an item was hovered over. He would have preferred to go to a separate page and be able to select a submenu item from there. Colm also stated he liked the dedicated home icon on the navigation bar.

Ailís Tracy:

Ailís decided to do a search of electronics on Google and decided to look at the electronics section of DoneDeal.ie. She likes the way the submenu is as a sidebar as well as showing the amount of products in said section. Ailís said that the capability of searching by price, location and seller type was a good idea. She did not like that there were no submenus to show different types of (e.g.) consoles in the Games section. She also said the overall functionality was good and easy to navigate through, and that is was not too compact. Ailís said: “A feature I dislike about Done Deal is there’s no Wish List”

Paul Brady:

Paul has said he had used a website called mouser.ie, an electronics website dealing with the likes of computer components. Paul said he used this website before and decided to use that as his brainstorming session. Paul likes the was the sidebar menu shows all the products with a small amount a text on the sub categories menu. The sub categories show the number of products in that sub category which Paul likes. When looking for an (e.g.) I/O connector, there are a lot of items to select from, such as the pitch and voltage rating. Paul stated that unless someone knew exactly what they wanted, it may be difficult for an “everyday” person to use this website. Paul recommended that the website that is being created should be able to be used by people with little knowledge of computers or parts. Paul said; “I would like to be able to share [a product on the website], so I could ask someone if this was the right version of it”.

Darragh Foley:

Darragh is a gamer and uses the CEX website on a regular basis and wanted to use that for brainstorming. Darragh says it reminds him of Christmas with the green and red theme. He said the website is very “colourful”, which he does not like. He said it makes it feel like a chore when he wants to buy something from CEX. Darragh added that the navigation bar at the top blends too much into the header image and can be easily overlooked. He said that the website looks like someone with little website creation skills seems to have made it, as it’s too colourful and crowded. Darragh says “I’d rather use Amazon or eBay over CEX any day, if I was given a choice”. Darragh also disliked that it was difficult to find his nearest CEX store on the website.

Danielle McGowan:

Danielle had built her own computer and used Irish Electronics to do so. Regarding the website, Danielle has noticed that there is little to no images on the main page and said it’s not very “enticing”. However, she does like that the basket feature and account info are in the sidebar and viewable on all pages. The top navigation bar when hovered, displays a large amount of submenus and Danielle has said this is not a nice feature. “The text in the submenus is also different and can be confusing”, Danielle says. She adds; “Overall it’s a good website, but needs a bit more ‘flashy-ness’”. Danielle also suggested to have an area on the new website for a community where questions could be asked about products.

## Survey

In this data elicitation technique, a survey was used in Google Forms. The following is a list of the questions and the most popular answers:

Question 1 was asking the participant their name.

Question 2: What is your age group?  
Eric Matthews: 24 – 40

Sunil Bhattarai: 18 – 24

Kabita Pandey: 18 – 24

Uyen Ngo: 24 – 40

James O’Carroll: 18 – 24

Question 3: What is your occupation?

Eric Matthews: Human Resources

Sunil Bhattarai: Student

Kabita Pandey: Nursing

Uyen Ngo: Student

James O’Carroll: Student

Question 4: What is your gender?

Eric Matthews: Male

Sunil Bhattarai: Male

Kabita Pandey: Female

Uyen Ngo: Female

James O’Carroll: Male

Question 5: How often do you buy the electronic goods online?

Eric Matthews: Frequently

Sunil Bhattarai: Sometimes

Kabita Pandey: Sometimes

Uyen Ngo: Sometimes

James O’Carroll: Sometimes

Question 6: How much money did you spend on buying electronic goods in the last year?

Eric Matthews: less than €500

Sunil Bhattarai: less than €500

Kabita Pandey: €500 - €2,000

Uyen Ngo: Less than €500

James O’Carroll: Less than €500

Question 7: How many brands did you compare before purchasing the electronic goods?  
Eric Matthews: 2 - 3 brands

Sunil Bhattarai: 2 – 3 brands

Kabita Pandey: 2 – 3 brands

Uyen Ngo: 4 – 5 brands

James O’Carroll: 2 – 3 brands

Question 8: Why do you purchase electronic goods?  
Eric Matthews: New purchase for myself

Sunil Bhattarai: Gift for family and friends

Kabita Pandey: New purchase for myself

Uyen Ngo: Other, all answers (New purchase for myself, Gift to family and friends, Broken or old item at home)

James O’Carroll: New purchase for myself

Question 9: What factors influence you when you go to buy the product?  
Eric Matthews: Brand, Product features

Sunil Bhattarai: Price

Kabita Pandey: Price, Brand, Product features, Warranty

Uyen Ngo: Price, Brand, Product features, Warranty, Customer Service  
James O’Carroll: Price, Warranty

Question 10: Did you find that buying an online product is better than buying in the store?  
Eric Matthews: Sometimes only

Sunil Bhattarai: Sometimes only

Kabita Pandey: Sometimes only

Uyen Ngo: Sometimes only

James O’Carroll: Sometimes only

Question 11: Please add anything else you feel would improve the online service

Eric Matthews: When buying online, I tend to stick with major brands that I can trust (Apple, Kindle). I worry that off-name brands are unreliable.

Sunil Bhattarai: *(no response)*

Kabita Pandey: More details regarding the product would help

Uyen Ngo: Promotion (gifts, vouchers)

James O’Carroll: *(no response)*

## Results

The data elicitation phase showed that people like a website that is easy-to-use and is not text-heavy or image-heavy too. We can put these results into two categories; Features and Usability.

### Features

Participants specifically wanted to look at the specifications of certain products, but was difficult to find on some of the websites in the brainstorming session.

Participants wanted to be able to:

* Have submenus or sub categories, even if it meant being on a separate page
* Be able to buy online and pick up in-store
* Add items to a wish list
* Chat in a community on the website to ask about products
* Compare prices and brands
* Search by warranty offered.

### Usability

* Clean look with neutral colours and little or no background/header images
* Few images, but not too many or none.
* Two to three clicks to go anywhere in the website
* Submenus to have one font and little to no changes in text styles
* Navigation bar on top with clear headings
* Sidebar with basket/wish list or promotion.
* Don’t over simplify technical jargon.

# Data Analysis

## User Groups

It is needed to analyse this significant amount of information. It was decided that to do this, users would be put into groups with the same traits. As a result of this, the requirements of each user group can be analysed. Examples of how user groups could be used is by categorising users into groups, such as; gender, age, race, level of education, how computer-literate they are, and many more.

This website is targeted to any type of user who wishes to buy electronics and to get information on products they wish to buy, whether it be the specifications provided with the product or information from within the community on the website. As people of all types use computers and electronic devices, user groups in this format to create a website is not the best way to gather requirements.

A possible way of using user groups would be that the company (GreenWorld Electronics) could use data analysis to see how many user groups buy or view a particular product or device.

## Personas

This section looks at what a typical user would do in the website. The personas generated here are imagined and are used to improve the elicited requirements.

### Persona 1

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| --- | --- |
| Name | John Doe |
| Age | 26 |
| Occupation | Computer Technician |
| Bio | John loves computers. He is constantly adding new features and hardware to his computers at home. He also likes to help other users to find the best computer for them. John is on electronic websites regularly. |
| Wants | John wants a community message board where he can write messages to other users. John also wants to know the product information. |
| Objectives | John’s objectives are to be well informed about the product he is buying. John’s other objective is to write messages to other users to help guide them into buy the best computer for them |
| Features | * Community message board * Messages sorted by relatability * Product information |

### Persona 2

|  |  |
| --- | --- |
| Name | Mary Simmons |
| Age | 43 |
| Occupation | Book shop owner |
| Bio | Mary knows a little bit about computers and electronics, but would not be considered tech savvy. Mary buys the occasional electronic product for her teenage son as well as to promote her online book shop. Jane likes to be kept informed about new technology to keep her business up-to-date. |
| Wants | Mary needs a functional search interface. Mary needs to know want she is buying will last her for a number of years and won’t break within a few months. |
| Objectives | Mary’s objectives are to purchase a product, but to be well informed about what she is buying. |
| Features | * Well-designed search feature * Clean and up-to-date visuals |

## Scenarios

### Scenario 1

**John Doe wants to create a thread about his latest computer.**

John has recently bought a new computer from GreenWorld Electronics. He has seen reviews of the computer on other sites about how it doesn’t work correctly, but believes this is user-error. John is a tad bit annoyed that people are disliking his new computer. John goes to the GreenWorld Electronics website to talk about how great his new computer is and to help other people who have or wish to buy it. The website requires a clean look and needs to be designed thoroughly, otherwise the annoyance John has would be directed at the website instead. John would need to find the product quickly and with ease and be able to link the product in his post.

### Scenario 2

**Mary Simmons wants to buy a new computer**

Mary’s computer recently broke and she is looking to buy a new one. She is not sure of which one she wants. With the help of her teenage son, she knows some of the specifications she needs for the new computer. Mary finds GreenWorld Electronics and finds the computer she likes. She expects the product description is accurate and reliable. She understands that if the computer up to her standard, she will say GreenWorld Electronics is not a good company and will not return to the site. She trusts GreenWorld Electronics to confirm she is buying the right product.

# Task Analysis

## Example 1

**John Doe wants to create a thread about his latest computer.**

* Create a thread
  + Go to GreenWorld Electronics website
  + Click on Community tab in the Navigation bar
    - Find the “Create” button
      * Insert the title
      * Insert the message
    - Find the “Publish” button
      * System asks “Are you sure?”
      * Publish new thread
  + Ensure the new thread is live and can be viewed on the website

## Example 2

**Mary Simmons wants to buy a new computer**

* Buy a new computer
  + Go to GreenWorld Electronics website
  + Click on Computers
    - Find the search options
      * Input the price range
      * Input what specifications are required
      * Save these settings
    - Find product
      * Click on Product
      * Click on Specification
      * Click on buy
    - Browse until desired computer is found
  + Purchase
    - Product added to basket
    - Go to Checkout
    - Buy product

# Requirements

## Functional

|  |  |
| --- | --- |
| **Requirement name** | **Create thread** |
| Code | CreateT |
| About | Users should be capable of starting a new thread |
| Reasoning | User should be capable of making a new thread in the community. The “+” symbol is used as a “create” button as users are familiar with this. |
| Achievement standard | When the user has successfully added a new thread and all threads are now visible to the user. The most recent one the user has created is at the top. |

|  |  |
| --- | --- |
| **Requirement name** | **Reply to thread** |
| Code | ReplyT |
| About | Users should be capable of replying (or commenting) to threads |
| Reasoning | User should be capable of replying to a thread in the community. A thread must be created for a user to do this. |
| Achievement standard | When the user had successfully added a reply message to the original thread, and all the replies are viewable to the user. The latest reply would be at the bottom. |

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| --- | --- |
| **Requirement name** | **View threads and replies** |
| Code | ViewT |
| About | Users should be capable of viewing all threads and replies |
| Reasoning | A user can click on the Community and see all threads. When a user clicks into a thread, the original thread and its replies are displayed. |
| Achievement standard | When the user is shown the thread and replies and is offered to reply with a comment. |

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| --- | --- |
| **Requirement name** | **Search Products** |
| Code | SeachP |
| About | User can search products |
| Reasoning | A user can search for products that wish to buy. They can edit search options such as price range, make, model and certain specifications (e.g. RAM). |
| Achievement standard | When the user has successfully searched a product that they are interested in |

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| **Requirement name** | **View Products** |
| Code | ViewP |
| About | Users should be capable of viewing products |
| Reasoning | All products will have a product specification and will be shown by relevance after a search. When the user clicks on a product, tabs will about for Product, Specifications and Warranty. |
| Achievement standard | When the user has successfully viewed a product that interests them |

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| --- | --- |
| **Requirement name** | **Buy Product** |
| Code | BuyP |
| About | Users are capable of buying a product |
| Reasoning | All products will have an option to “Add to Basket”. Then the user can enter their billing and postal information. |
| Achievement standard | When a confirmation message displays informing the user has successfully bought the product. |

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| **Requirement name** | **Add item to wish list** |
| Code | WishP |
| About | Users are capable of saving products to a wish list. |
| Reasoning | Instead of buying a product, a user can add a product to their wish list. This wish list can be shared on social media where the likes of friends and family can view this. |
| Achievement standard | When the user has added a product to their wish list. |

## Non-functional

**Performance and response time**

When the website is being created, how the user will interact with the website should be paramount. The response times should reflect the action. For example, when searching products, a loading circle should be used to inform the user that the system is working. However, if the user is just clicking the navigation bar, the wait time should be minimal enough so a loading circle would not be required.

**Scalability**

Depending on the time of day and how busy the website is; the resources should fluctuate accordingly. For example; if the server is working at 90% capacity with a large amount of users, then that is justifiable. However, if the server is running at 90% capacity with a minimal amount of users, this would not be optimal. The resources need to be adaptable for different situations.

**Responsiveness**

The website should be able to adapt to users on mobile phones and tablets, as well as different screen sizes. This would ensure that no matter what device a user is using; the website is accessible to them.

# Conclusion

This report looked at the data elicitation for the GreenWorld Electronics website. It is felt that the methods used in this report are just and that profound results were created. The findings in this report give an understanding at some of the requirements of the website and how they would be introduced. The findings also assist in a clearer awareness of the requirements and the analysis of these requirements. These are the basic requirements of the website and are presented as not being vague or in a large number. This report also provides the concrete for what a user would like to see in thee site.

# Appendix

