A

REPORT

ON

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in the

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by

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submitted to

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Table of content

Introduction

Modern approach of design of the interfaces rely on the "User-centered design" method. The main difference from the usual construction of the user flows that, the UCD makes the attention to: Accessibility, Visibility, Legibility, Language.

But "Usable" is not always a user goal. To make a design that you can use comfortable and at the same time get the desired result - you need to adhere to several rules.
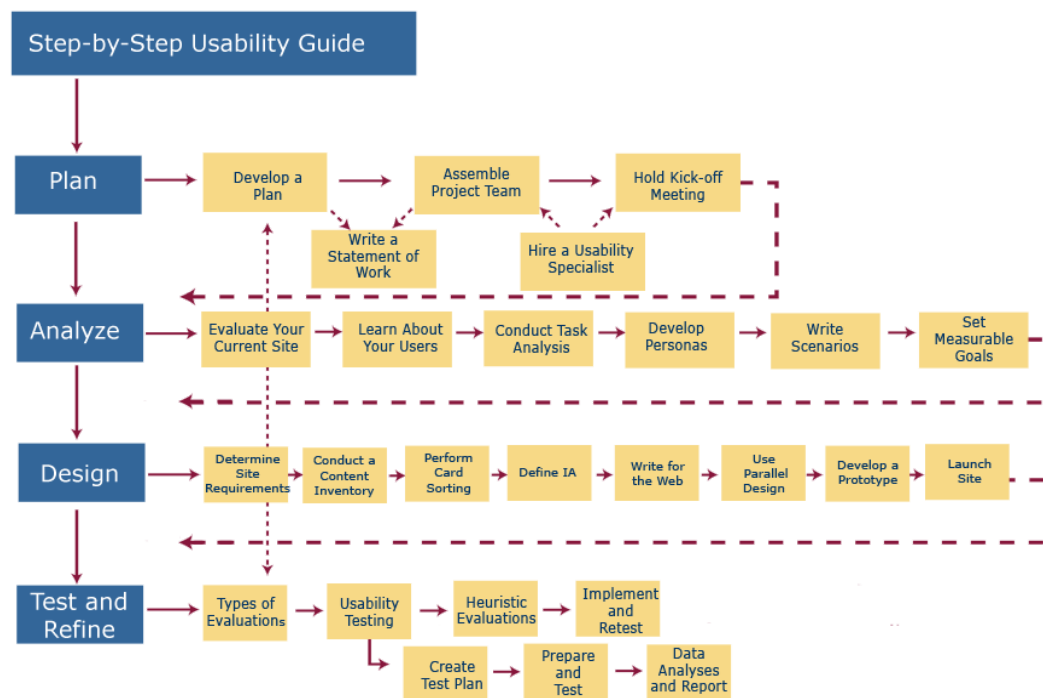
User-centered design
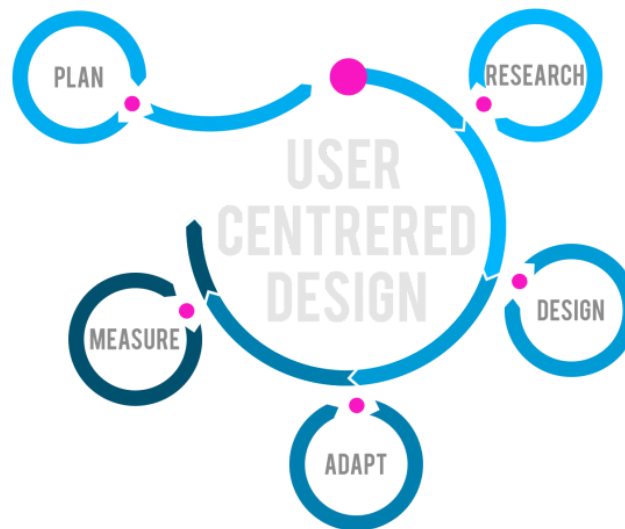
Picture 1.1. Life cycle of UCD

"User-Centered Design (UCD) is the process of designing a tool, such as a website's or application's user interface, from the perspective of how it will be understood and used by the end user. Rather than requiring users to adapt their attitudes and behaviors in order to learn and use a system, a system can be designed to support its intended users' existing beliefs, attitudes, and behaviors as they relate to the tasks that the system is being designed to support. The result of employing UCD to a system design is a product that offers a more efficient, satisfying, and user-friendly experience for the user, which is likely to increase sales and customer loyalty."[1]

User-Centered Design Process Map

Picture 1.2. Main steps of USD [2]

The User-Centered Design consist of several main steps. There are four main phases of the user centered design process: Plan, Analyze, Design, Test and Refine. Sometimes it depends on product and approach that you choose, but it usually looks like on the picture 1.2

Problem description

The main idea of my project is combined sources of news in one app. It will allow to get all news from all websites, social networks that client use. There are a lot of different applications in our phones that do the same things and each app require a lot of space in memory. This is a real problem, because even if you don't use your phone, the application works in the background and use resources, which leads to slow down of response speed. This application may solve all these problems.

Methodology

Develop a project plan

Project plan - it is the most important part of UCD approach. Because plan provide you by schedule of tasks "TODO list". Due to this an orderly plan, you will understand what goals and objectives you need to achieve, what market research you will need to undertake and count the value of the product.
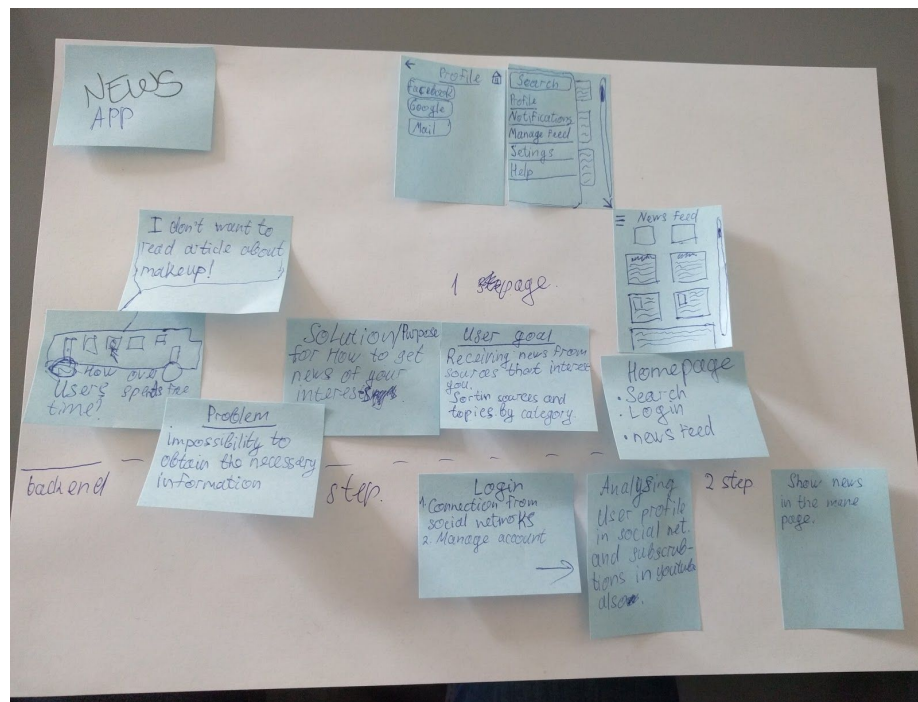
Picture 1.3. Example of project plan

Define the Scope and Stay on Track

Identify Target Audiences

Each application has its own target audience. If you have an app with news then your audience is people growing from 18 years old who are interested in what's happening in the world, whereas if you have a game then the main audience is children. It is very important to design the application to determine its target audience, because the success of the product depends on this.

The project scope

The project scope identifies what needs to be accomplished for the project to be considered complete. When discussing scope, it's important to define:

What product is being developed?	Mobile app
What information is going to be covered? Will it feature a particular topic or is it for a particular audience?	The application is intended for all ages regardless of preferences
What is the size of the product (i.e. how many pages will the app contain)?	The application is small, consisting of a maximum of 15-20 pages
Are you creating an app for an entire agency or organization? Is the app for part of that agency or organization?	The application is a proprietary and independent development
What amount of research do you intend to pursue? Is there time built in for incremental adjustments based on those findings.	To develop an application, you need to conduct market analytics, what news sources people use

"For a project to stay on track, it's important to avoid scope creep. Scope creep refers to when there are things incrementally added the project plan that are individually doable when piled together endanger successful completion of the project as previously defined. Scope creep can be on the business front or the technical front."[3]

Set Measurable Objectives

Each case begins with the tasks assigned. You always need to project according to your goals that you want to achieve, it helps to understand what needs to be done for this. There are two types of goals/ objectives to consider:

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● User goals are users' task scenarios. They explore what users come to the app to achieve.	Users will be able to receive news from the sources that interest them. The user will receive the news feed according to his wishes.
● Usability goals should measure your users' ability to accomplish tasks on your app. This will tell you whether your app is effective, efficient, and satisfying to your users.	The goal of the user receiving news, to share news with friends, to improve the experience of using news aggregators.

Develop design and prototype

Before investing money in developing an application, it's worth making a prototype. The prototype allows not only to save money but also to develop a usable and convenient design. There are several types of prototyping:
- Sketching & Paper Prototyping
- Digital Prototyping
- Native Prototyping

For my project I used digital prototyping in Adobe xd application, because instead of rewriting and redrawing everything on the paper over and over, for my own opinion it's more convenient. Also digital prototype allows explore interaction and transition between screens. During prototyping, I had many different versions of my application, I constantly changed something, to achieve a better result.On the picture 1.3 below is an example of my prototype.
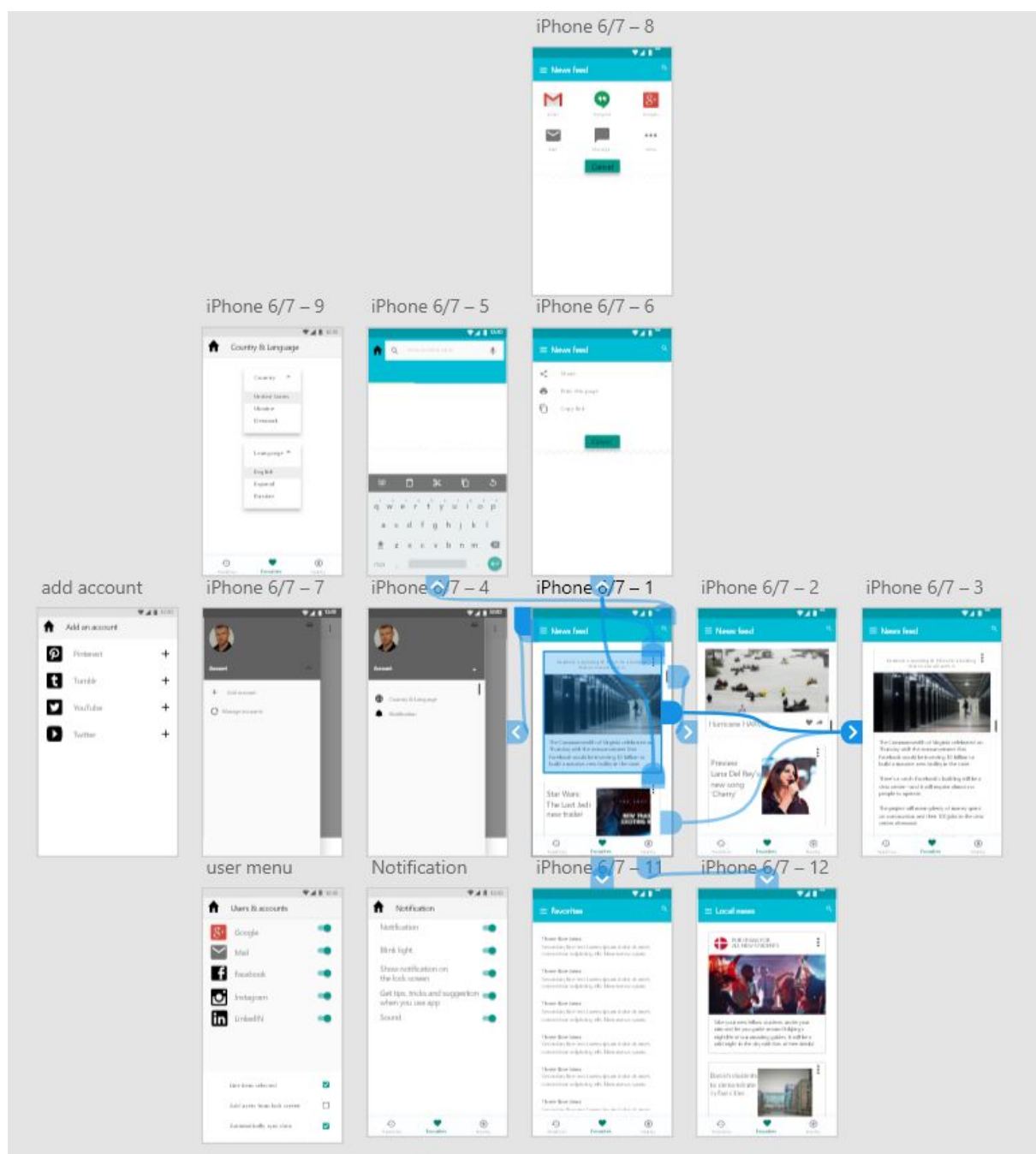
Picture 1.3 Example of prototype

Accessibility

How to create a product that will be available and useful to everyone. **Accessibility** - it is an approach of developing that allows for anyone use website or application, regardless of disabilities, such as visual impairment, hearing loss, and limited dexterity.

According to Eurostat: "One person out of seven reports a basic activity difficult. Lifting and carrying are most frequently reported difficulties. The most frequently reported basic activity difficulties by women and men aged 15-64(number of cases per 100 people)."[5]

The World Health Organization has published statistics for the entire world for 2017.

- "An estimated 253 million people live with vision impairment: 36 million are blind and 217 million have moderate to severe vision impairment.
- 81% of people who are blind or have moderate or severe vision impairment are aged 50 years and above."[6]

Modern Web technologies make it very easy for developer to create a website that is for someone who is blind to use. If the user have no vision, it's quite likely they would be using a screen reader, which is a software that allows them to hear the information displayed on the screen via text to speech synthesizer. There are also people with poor color vision, who have difficulty distinguishing red and green or blue and yellow.

Accessibility i so broad and the useship is so diverse, that developers need roadmap to guide. "**Web Content Accessibility Guidelines** - is a set of guidelines and best practices which have been put together by accessibility experts to try and answer the questions of what accessibility means in the methodical way. WCAG is organized around four core principles.

- **Perceivable** - is making sure that users can perceive content
- **Operable** - can users use UI components and navigate the content
- **Understandable** - can users understand the content
- **Robust** - is it robust enough for the content to be consumed by a wide variety of user agents" [7]

User flow

One of the most important question before creating low fidelity prototyping - is how to create user flow so useful and easy to use? The interface of the application or web site should be intuitively understood. Having created a prototype of my News application, I had to adhere to several rules that would allow the user to easily and quickly obtain the functions that the user expects to receive.

On the main screen with news there should be no unnecessary information. Being in the main menu, the user expects to receive only the most important information, the main functionality of the application. You can't mix settings, news, additional functions on one screen.

If you don't use division for the functionality, menus and categories, then the user may be confused and don't understand what he needs to do.

Interaction design

How to get from A to B point. Which approach design of navigation interaction i should choose:

- Should i use widget in this case?
- Should i use drop-down menu?
- Radio button or checkbox?

How to construct that kind of navigation scheme in properly way, that will allow easily interact with interface. After you make first prototype, you will realize how much time it take for animation or why slide menu more useful instead of top menu. Manipulation with all types of interaction will show level of usability.

When i made first prototype in Adobe XD, i realized how everything is working. That kind of creating design helped me to understand how to manipulate and interact with design for better user flow.

Information architecture

Information architecture - it is the science of art of structural design, organizing and labeling websites, intranets, online communities and software support usability and findability. Without good relevant content, there is no compelling reason for anyone to use a website or app. In **IA** everything is intimately interrelated, so that's mean that you can't create something without defining the other. For example:

- How global navigation are related to your content
- What shows up in you navigation bar
- How categories are divided between each other

IA means consciously organizing the content and flow of a website, app or system. During creating my News app, i thought about how everything are connected. Approach for developing were for me like a logical chain of sequences.

Gamification

Gamification - is using game based mechanics aesthetics and game thinking to engage people motivate action promote learning and solve problems in a non-game context. But how actually use this concept of promotion?

The main idea - is "Motivate for action". So in my News app, i can use approach for spreading app through network by motivate users for sharing this app in social network, in return you will receive some bonuses, such as: free subscribe for service or floating through news feed without advertisement.

Conclusion

User experience, innovation will become the battleground in almost all consumer businesses within a few years. It has happened widely already within the web page design area, it has happened within the mobile phone area, and it will also happen in industries such as those involving washing machines, stereo and other music systems, remote controls, cars, and so forth. Customers will start to expect and demand reasonable user experiences for any product they purchase.

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