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Assessment of site classifications according to layout type in web development

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Abstract. This article discusses the theoretical part of creating an online store. At the beginning of this article, we looked at the benefits of using websites. We studied them in order to start creating a site, one needs to decide on its functions, because with the help of them one can select the means for writing it, which are in this article. Some types of tools for writing a website are described. We considered site classifications by purpose, such as business card site, corporate site, portal, catalogue site, online store, landing page. Based on the available data, a table of the advantages and disadvantages of different types of websites is provided. The main stages of creating an online store were identified and described. These are a preparatory stage, preparation of technical specifications, marketing research, design, programming and layout, content filling, testing, domain and hosting selection. Conclusions were made about the conducted study, the advantages of an online store over conventional stores.

1. Introduction

The main element of e-commerce is the website, as it is the main instrument of interaction between the company and the consumer. A site is a collection of web pages, united by meaning and located on one server [1-3]. The content and scope of the site depend on the task it is supposed to perform. For the company, the website provides many new opportunities for building and managing customer interactions.

The company receives a number of advantages when using such marketing tool as a website, including [4-6]:

- Increasing the productivity of companies.
- The emergence of an additional way of selling goods and services.
- Direct access to the buyer.
- Business modernization.
- Access to additional market niches.
- Collection of analytical data.

Before developing a website, it is necessary to determine what functions it should perform and what it should be, because it is quite obvious that sites can be incredibly diverse; sites radically differ from each other, or, on the contrary, be somewhat similar [7-9]. For the convenience of navigating among various types of websites for both the developer and the customer, the following classification can be proposed [1].



In terms of technical performance, sites are divided into the following types [10-12]:

- Sites in pure HTML/CSS.
- Sites with a management system (CMS).
- Websites made in constructors.

At a time when the internet speed was very limited, sites were created entirely in pure HTML. This is one of the first types of the site, which, however, is sometimes used to this day. Such site, as a rule, is a collection of static HTML pages linked by hyperlinks. The advantages of this type of site include the speed and the minimal server load. However, there is also a significant disadvantage - page editing has to be done manually, and with a large amount of data, this process takes quite a lot of time [4,13,14].

CMS is a content management system. In modern realities, this is the most popular technical way to create websites. The advantages of this method include convenience, ease of learning, low financial costs and quick start-up. The essence of the CMS is the separation of the page content and its design. All content, settings and content are stored in a MySQL database for added convenience and security. The developer only needs to choose a template that will determine the appearance of the page. All that remains is to fill the page with the content. Thus, the CMS is great for creating template types of sites; however, it does a poor job when creating unique, non-trivial solutions in which you have to either make compromises or spend a lot of time introducing new features [2].

Another type of sites that are created by combining ready-made templates, which are further filled with information, is sites made in designers. This method does not require special skills in creating sites and the help of specialists. However, this type of site is not without serious drawbacks. Among them, it is worth highlighting the high limitation in changing the functionality and design. The site will not be able to properly adapt, change the code, transfer to CMS. In addition, such site is quite difficult to promote in search engines, due to the meager functionality for optimization and features of the code [12].

2. Materials and Methods

The classification of sites by their purpose is given below.

1. Business card website. This type of site stood at the dawn of the internet. It is the simplest type of site. In the modern world, business card sites have obviously changed, but the essence remains the same - this is just a small set of pages containing basic information about the company. The content of this type of site is static and does not imply active user interaction. At the moment, it is less popular, because due to low information content it is replaced by social networks, which are also business cards in their own way, but contain much more useful functions. The business card site can be useful when integrating with social networks. An example of using a business card site:
 - Creation of a unique design, publication of brief information + links to social networks.
 - One of the options for a business card site is the Landing Page (From the English landing page). This type of site is used in e-commerce to advertise and promote a specific product. Landing page, as a rule, is represented by the only page where information about a product or service is key and presented in the most visual way. Landing Page development is carried out with the participation of a marketer.
2. Representation website. The site has more than a business card site, the number of pages and functions: a more detailed description of services, a portfolio, reviews, a feedback form, a road map, etc. The set of pages and functions is usually approved in advance and is described in terms of reference for the website.
3. Corporate website. This already multifunctional organizational tool can contain the most complete information about the company, its services and products. Much attention is paid to the publication of materials from the life of the company: news, notes in the media, awards, employees. Often more powerful functional tools are for working with published content (full-text site search, sitemap, calendar of events, corporate blogs, galleries). The corporate website

can be integrated with the internal information systems of the company (CRM, accounting). It may contain closed sections for different user groups - employees, customers, dealers, counterparties, etc.

4. Informational portal. This type of the site, in fact, is an improved version of a corporate site containing advanced functionality, such as placing and displaying multimedia in the form of convenient galleries, reading, viewing and listening online, forums, blogs, ratings, polls, private messages between users, etc. The main feature of the portals is their great functionality for active communication with the user [11]. For discussion of articles, the ability to comment is added. Registration and authorization of visitors are possible using an account on social networks.
5. Site directory. This type of site is a kind of electronic storefront where you can view and select a product, but there is no way to place an order for it. As a rule, such site cannot exist independently of the site of the representative office or the corporate site. The catalogue is intended for publishing a more detailed description of goods or services, technical characteristics, photographs, certificates. It may contain reviews received from customers. Such site is created if the customer has a need for a more visual demonstration of the existing price list. Purchase of goods from the catalogue is carried out by phone or e-mail. In modern realities, a catalogue site is unlikely to be very popular, since consumer needs are constantly growing and the lack of an automated way to place an order in 2020 can easily scare customers away [9].

Table 1. Features of website types.

Website type	Advantages	Disadvantages
Business card website	Low cost, fast start-up, upgradeable to more advanced site types	Difficulty in promotion, little functionality
Corporate website	Detailed information about the company, great functionality, active attraction of users	The need for competent promotion and support
Portal	Good promotion in search engines due to a large amount of content, the ability to successfully monetize advertising due to high traffic	Complexity and cost of development
Site-catalogue	The opportunity to get acquainted with the company's products, quick launch and low price, the possibility of upgrading to an online store	Lack of functionality for the modern world
Online store	Convenience of the client, saving on staff, good chances of successful promotion	The need for constant support, the complexity of development
Landing page	Saving time and money for development, maximum conversion from visitor to client	The impossibility of providing a large assortment

6. Online store. The main task of sites of this type is the direct sale of goods or services. Online stores are a kind of online showcase, conveniently divided into categories and presenting the necessary information about products, such as descriptions, reviews and visualizations. The main distinguishing feature of this type of the site is the "basket" module - a functionality that allows the buyer to easily place an order for the selected product.
7. Landing page or landing page (LandingPage) is a one-page type of the site aimed at more efficient sale of a product or service due to close attention to the design and design of the site. Distinctive features of this type of site are [7]:
 - Most often created for the sale of a single product or service.
 - There is no navigation menu, or the navigation buttons lead to the internal blocks of the site.
 - All user's attention is riveted to the target action.

The landing page carries key information about why a consumer should buy a particular product or perform another targeted action. Benefits, promotions, photos, a call to action are the main components of the landing page.

Based on the above, you can conduct a comparative analysis and highlight the advantages and disadvantages of each type of the site. This analysis is presented in Table 2 [13-16].

3. Result

When creating an online store, the following main stages are distinguished [3]:

1. Preparatory stage.

At this stage, the goals of the project and its further positioning are determined. First of all, the customer must clearly understand what he wants and how the final product should look; otherwise the results of the work can rarely become satisfactory.

If there is no clear idea, the online store will not suit you, despite the thoughtful design and good functionality. To avoid further financial costs, time and nerves, at the preparatory stage, the goal of the project is clearly discussed and formed with the participation of both the customer and the developers. [15]

Based on the information collected in the previous step, a sitemap is created (Figure 1).

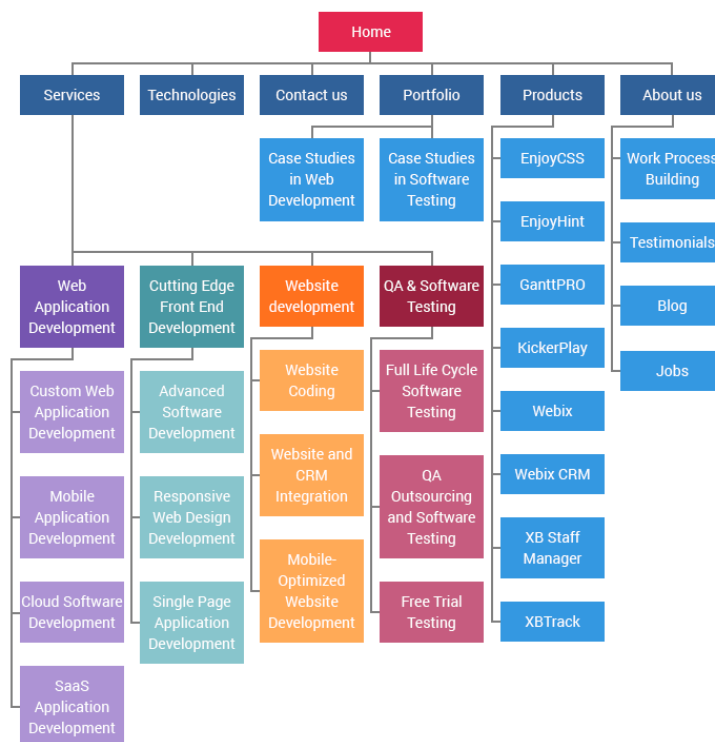


Figure 1. Site's map.

A sitemap should describe the relationship between the main areas of your site. This view can help you understand how useful the final product will be. It can show you the “relationship” between the various pages of a website so you can gauge how easy it is for an end user to find the information or service they want if they start from the home page. The main reason for creating a sitemap is to create a user-friendly and easy-to-navigate website.

Sometimes, before you start coding or even working on a design, you need to get the client's approval that everything looks fine so that you can move on to the next stage of development. In this case, a wireframe or layout is created. A wireframe is a visual representation of the user interface that you are about to create. But it does not contain any design elements like colors, logos, etc. It only describes the elements that will be added to the page and their arrangement. A simple and cheap sketch can be produced.

Any layout can be used for this. We used Moqups. This is what a wireframe might look like (Figure 2).

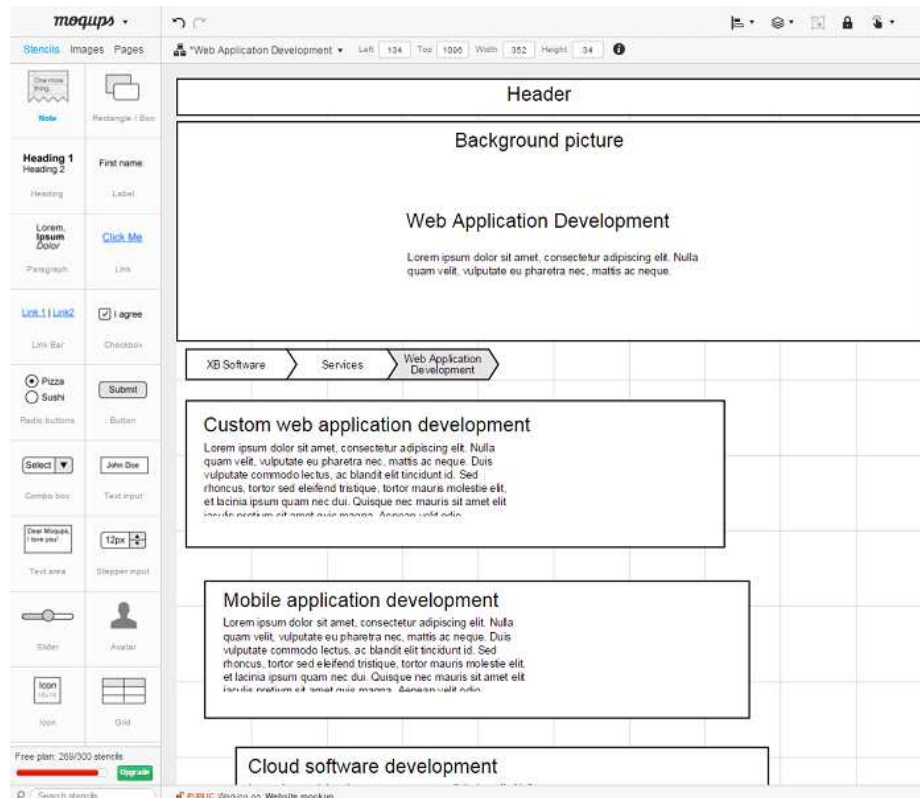


Figure 2. Site layout.

2. Drawing up technical specifications.

Terms of Reference (ToR) is a clearly written document containing the customer's requirements for the developer. Essentially, TK serves to minimize the difference between expectations and reality. In other words, the TK allows you to clearly define what will be the end result and how the project will be implemented.

ToR includes the following points:

- Requirements for the graphic content of the project.
- Functional requirements.
- General provisions and peculiarities of cooperation.
- Requirements for software and technical components.
- Deadlines for the completion of the project.

And this is only a small fraction of what TK includes. For individual tasks, a so-called brief can be drawn up - an additional document that includes a list of questions that help the performer understand how to solve the task [8].

3. Marketing research.

High competition is an integral part of almost any field. For an online store to be in demand, it is necessary to study competitors, understand how to do it better. This stage includes [13]:

- Product analysis, during which the developers study the product, its features, plunge into the client's topic.
- Trend analysis, during which there is a study of global and local trends, the positioning of the product in the market is determined.
- Study of competitors, their ways of interacting with customers, their features, in order to create a more effective offer.
- Determination of the target audience.

During marketing research, strategic tasks are solved. The final result depends on it. The customer takes an active part in the work.

4. Design.

Website design development begins with a detailed study of the structure of the online store, its functionality and display on various devices. This stage is very important, since the correct elaboration of the prototype will ensure fast and high-quality development of the final product. The design is being developed for [8]:

- Visualization of the site structure for further development.
- Thoughtful display on various devices.
- Defining user interaction with the store.

The design can be diagrams, drawings and plans, as well as be interactive, providing the customer with the opportunity to evaluate the interaction with the site.

5. Programming and layout.

At this stage, the graphic plan is translated into the HTML format; the main page, catalog, store sections, order forms and other elements of the online store are created.

An administrative panel is created, including functions for adding a product, managing, etc. Third-party systems are connected [14, 15].

This stage usually takes most of the site development time.

6. Filling with information.

Based on the tasks and functions of the company's site, a list of conditions for the content of the site is highlighted. This process can go in parallel with other stages of website creation; the main thing is to set the right tasks for the developers. Due to the parallel execution of tasks, errors and inconsistencies (for example, incorrect display of images, text displacement, etc.) can be detected.

This stage is very important in the process of creating a store, since the success of sales depends on the quality of the content. The online store must contain a detailed description of the goods, high-quality images. These factors ensure the attraction of more customers [9].

7. Testing.

At this stage of website creation, errors are searched for. The tester draws up a plan, checks the technical compliance, the correctness of the site, visual perception and compliance with the ToR. We need this stage for the following purposes [16]:

- Search for technical errors.

- Checking the correctness of the site display on all necessary devices.
- Checking the correctness of display in all required browsers and operating systems.
- Verification of compliance with the parameters specified in the tor.
- Analysis of functional requirements.
- Control over the work of third-party services.

8. Selection of domain and hosting.

After passing testing and full preparation of the site, it is ready for uploading to the main domain.

First, there is a selection and registration of a domain name. It is important that the domain name is original and memorable, reflecting the essence and focus of the online store.

Then there is a registration on the hosting provider. Hosting, in fact, is a provider's computer, where the project files will be stored and to which the provider will provide access via the Internet [10]. This stage is very important, since the speed of access to the site, material costs, and site security depend on the choice of hosting. And finally, the site is placed on the selected hosting [9].

4. Conclusion

In this paper, the role of websites in the field of e-commerce was analyzed, their classification was presented, a comparative analysis of various types of sites was carried out, and the main stages of creating an online store were considered [15].

Today, online stores are very popular; they are considered as a platform for increasing sales and for starting a business from scratch. For the successful implementation of an online store, it is very important that your contractors work efficiently, so that you understand each other with them [5].

An online store has a number of advantages over ordinary stores due to a more simplified trading system and lower costs. But it also has disadvantages associated with the inability to evaluate the goods before purchasing it and the distrust of some part of the population in the activities of online stores. Nevertheless, this direction is very promising nowadays [7].

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