

DIGITAL MARKETING FOR TOURISM INDUSTRY USING ARTIFICIAL INTELLIGENCE

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Abstract

The technology and the internet provide many conveniences for the people. This article is a study on improving marketing through digital marketing. One area of knowledge that can be used is Artificial Intelligence (AI) in the system recommendation section. Through the website, tourism can be introduced to the people and marketing is enhanced through a recommendation system. In this article, we propose a recommendation system for tourism websites in Uzbekistan. The data about developed user interface for website, it will be guideline how to develop a user-friendly website, and how to develop website that can have a function to improve digital marketing. Recommendation system was developed based on database concept which designed used Entity Relationship Diagram (ERD).

Annotation

This article is devoted to the study of the tourism site of Uzbekistan. Studied the data of Official Website of Tourism in Uzbekistan developed in the user interface for the website, guidance on how to develop a user-friendly website and how to develop a website that can have an improved digital marketing function

Supporting concepts: tourism, digital marketing, advertising, internet, website, recommendation system

Introduction

Travel and tourism have attracted humans' interest from the very inception of life. This endless craving for exploring more, lead tourism in one of the world's most promptly evolving industries. Clearly, the constantly automated travel services as well as the growing amount of information that any potential traveller can find via the internet, fueled this rapid growth of the tourism industry. According to the United Nations World Tourism Organization, Uzbekistan was among the top 4 countries experiencing the fastest tourism growth of 27.3 percent. The number of tourist visits in Uzbekistan has increased almost every year. However, in 2020, the number of visits decreased by 77% due to impact of the COVID-19 pandemic. Then it experienced an increase again in 2021 with the 2022 number of visits reaching 1.9 million people.

The Internet facilitates travellers by providing online booking systems, information concerning the accommodation, the local food, the weather forecast and much more for the chosen tourism destination not to mention that the internet even connects all travellers instantly, in order to exchange personal experiences. All travellers are seeking to increase the rate of return on their investment while all tourism providers upgrade continuously their skills in order to be able to respond to global standards and requirements.

Digital marketing is a marketing or advertising operation of a brand or product using digital media or the Internet, the goal of digital marketing is to reach customers and future consumers rapidly. According to Kleindl & Burrow [1], digital marketing is a process and implementing concepts, ideas, prices, promotions and distribution. In simple terms, it can be interpreted as the development and maintenance of mutually beneficial relationship between consumers and producers.

Digital marketing today has become the one of the key focus areas for businesses all over the world. Today digital marketing plays a critical role in the success of each business which exists in the tourism industry [2]. Before the launch of digital marketing, the role of people who rendered these services was indispensable to the success of the business. The tourism industry, in particular, has been disrupted as a whole with the rapid development of the internet. Users purchase services related to tourism online at the click of a button while comparing amongst businesses from all over the world. A web app is an application located on a web server that users can access through a browser. Mkwizu [3] conducted a research which was on digital marketing and tourism with a focus on opportunities for Africa as a case study by specifically examining social media marketing in relation to tourist arrivals.

Based on research from Gareet, et al. [4], it is known that there are 20 distinct design elements commonly discussed in research that affect user engagement. From the 20 design elements already mentioned, there are seven website design elements that meet the threshold requirements for review. In navigation, there is a definition of key design elements, including navigation bar, easy access to web pages, search features, and user feel ease of managing website. In the search feature of the website, users will perform a search by entering keywords. Search done by user, still gives output with notification that search result not found. This notification, can make the user not get the desired information. This is actually an opportunity, to do marketing on something, meaning that the search that is done can still provide recommendations to users. Therefore, this study will give method for recommendation system. Recommendation system in this study for Uzbekistan tourism website and relate with digital marketing.

Literature Review Digital Marketing

Marketing is the customer-oriented management operation that organizes and manipulates all those commercial activities involved, in evaluating and converting consumers' purchasing power into effective demand, accomplishing in parallel customer-satisfaction. According to Kotler [5], marketing is defined as "A social process by which individuals and groups obtain what they need and want through creating, offering and freely exchanging products and services of value with others." According to Eun Young Kim [6], there are four dimensions of digital marketing: Cost, Incentive Programs, Site Design and Interactive.

Website

Website is an information page provided through the internet so that it can be accessed throughout the world as long as it is connected to the internet network. Websites have become the most important public communication portal for most, if not all, businesses and organizations. Because business-to-consumer interactions mainly occur online, website design is critical in engaging users. In the search feature of the website, users will perform a search by entering keywords. This is actually an opportunity, to do marketing on something, meaning that the search that is done can still provide recommendations to users.

Artificial Intelligence

Artificial Intelligence (AI) is general term for the science of artificial intelligence. It uses computers to simulate human intelligent behaviours and it trains computers to learn human behaviours such as learning, judgment and decision-making [7]. AI has been widely implemented in various industrial fields and continues to develop rapidly. Some of the topics on commonly used AI are as follows: Machine Learning, Logic-Based AI, Knowledge Representation, Planning, Heuristic, Generic Programming.

Machine Learning

According to Arthur Samuel [8], Machine Learning can be defined as a process of entering data into a computer system. The computer will learn the ability to process that data and perform its own activities without being explicitly programmed. In other words, computers will develop their own "minds" and allow them to "think". Based on data type and volume, there are three machine learning approaches [9].

Recommendation System

Recommendation System is an application model based on observations of the circumstances and customer desires. In the recommendation system, several methods are used to assist the system in providing information. Recommendation system have emerged in the e-commerce domain and are developed to actively recommend the right items to online users [10].

Methodology

The research stages is the stage of activities carried out in a research. The research stages in this study can be defined as follows: Problem Identification, Literature Study, Data Collection, Data Analysis, Developed Method, and Create Mock-up.

The first step in carrying out the stages of system development is to carry out problem identification. Problem identification is carried out as an affirmation of the boundaries of the problem so that the scope of the research is not out of the goal. In this study, the process of identifying problems was carried out by analyzing the Uzbekistan Tourism website.

In this study, the method used for data collection was a descriptive method. The method of data collection carried out in this study by direct observation of the object of study. The object of this study is the website of Uzbekistan Tourism. In this step, the data collected are:

The data about Official website of tourism in Uzbekistan.

The data about developed user interface for website, the data will be guideline how to develop a user-friendly website, and how to develop website that can have a function to improve digital marketing.

The data needed to make a recommendation system

Data analysis is data processing with the aim of finding useful information that can be used as a basis for next step. The analysis is done on the website of tourism in Uzbekistan. Data to developed the website that have a good user interfaces and functions that suit what it needs, data to developed a recommendation system are also to analyzed. Figure 1 is shown the step for analysis until developed method and mock-up for the website.

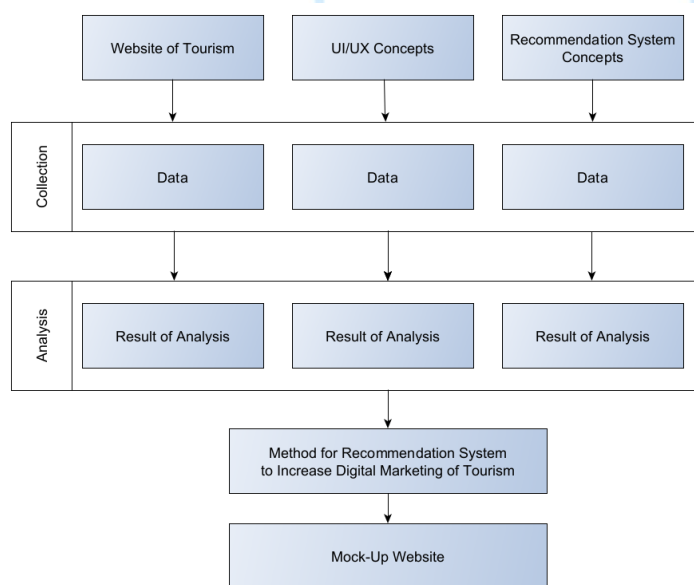


Figure 1. Step of Data Analysis

In Developed Method, data needed is about the website of tourism in Uzbekistan, data about developed UI/UX website, and data about the concept how to build recommendation system. The method in this study is in the form of stages to create a recommendation system that can be used in website of tourism. This proposed method can improve digital marketing such as about tourism. The method to developed recommendation system is based on to the database. In this study, the database design by Entity Relationship Diagram (ERD). ERD have entity, relationship, and the attributes.

Mock-up used to describe in the form of design about the method that have done by this study. The website mock-ups are made using a design application, namely Figma.

Result And Discussion

The first problem looks at the conditions that have occurred in the last 3 years related to tourism in Uzbekistan (2019, 2020, 2021), because of a healthy case in the world (Covid-19 viruses, and almost all country have a lockdown policy). About years of 2020 to 2021, there is a drastic decrease in the number of tourists that came to Uzbekistan. In 2022, conditions began to improve and the lockdown policy was abolished.

Back to the normal condition, it need to think about ways that can be done to increase tourists visit, and one of the way is by digital marketing. In Uzbekistan website of tourism, it is found that there are several views and functions that can be developed from the website. The problem found is that there are several features that are not available on the Uzbekistan Tourism website are there's no search feature and there're pictures but no explanation has been given. Data about official website of tourism in Uzbekistan are: Link of website, Features in Website (Menus of Website), Pages of Website, and Services of Website.

The data about developed user interface for website, it will be guideline how to develop a user-friendly website, and how to develop website that can have a function to improve digital marketing. Figure 2 shown the points that must be considered in website development (Key Design Elements).

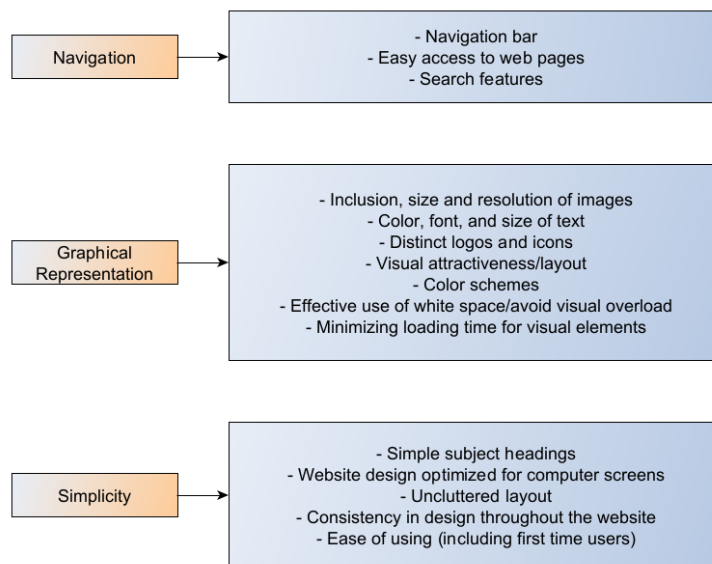


Figure 2. Key Design Element to Developed Website

There are keys of design elements for user engagement website: Content utility, Navigation; Graphical representation; Purpose; Memorable elements; Valid links; Simplicity; Impartiality; Credibility; Consistency or reliability; Accuracy; Loading speed; Security or privacy; Interactive; Strong user control capabilities; Readability; Efficiency; Learnability. In this study, used 3 (three) keys are: Navigation; Graphical representation; and Simplicity.

Recommendation system in website is one of service that used to give recommendation. One of advantage from recommendation system is related with marketing. In this study, recommendation system used to digital marketing, because recommendation system method used in website of tourism. In this study, data for recommendation system are Name of category, Name of town, Name of place, Link of Website, Address, Phone number, Description of place, and Similar place. Data for recommendation system will be developed to be the tables that support recommendation system. Figure 3 is illustration of this method to recommendation system for the tourism website that proposed in this study.

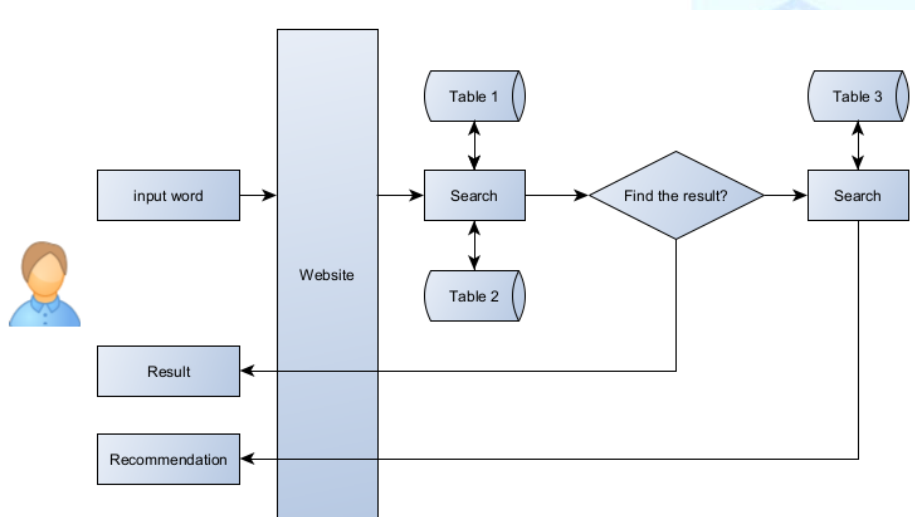


Figure 3. Illustration of Recommendation System

From Figure 3 it is known that the database have three tables are:

Table 1: table of category of tourism destination

Table 2: table of tourism place

Table 3: table of similar data

The recommendation system will be operation when user input keyword, and system will be try to find the result. For the first, system will be try to find the result from table 1 and table 2. In there is on result, the system will be find to the table 3, and give recommendation to the user.

Conclusion

Recommendation system was developed based on database concept which designed used Entity Relationship Diagram (ERD). A good database design will be helped system give a best result from the search function for website. Recommendation system will be helped user to find another information that similar to what they are looking for. So, website didn't give a notification "result not found". Recommendation system give the advantage to introduce other tourist attractions, and this method can used to increase the marketing.

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