

## UNIT-7

### Optimizing E-commerce Systems

#### ⊗. Search Engine Optimization (SEO):

SEO is the process of improving the ranking of web pages with search engines such that the website link appears on the top of search results. and it is easy for users to find the website. By carefully selecting key words used on the web pages, updating content frequently, and designing the site so it can be easily read by search engine programs, marketers can improve the impact and return on investment in their web marketing programs. Marketers want to make sure that when a potential customer enters search terms that relate to their products or services, their companies Web site URLs appear among the first 10 returned listings, which can be possible by SEO.

#### ⊗. Working mechanism of Search Engines:

A search engine is a software accessible through a Web site that helps people find things on the Web. Search engines contain three major parts: Spider, Index and Search utility.

1) Spider: It is a program that automatically searches the Web to find Web pages that might be interesting to people. When the spider finds Web pages, it collects the URL of page and information contained on the page. This information might include the page's title, keywords included in the pages text, and information about other pages on Web site. The keywords are enclosed in an HTML tag set called meta tags.



2) Index: The store element of a search engine is called its index or database. The spider returns information to the index. The index checks to see if information about Web page is already stored. If it is, it compares the stored information to the new information and determines whether to update the page information. The index is designed to allow fast searches of its very large amount of stored information.

3) Search Utility: Search utility takes search terms, and finds entries for Web pages in its index that match those search terms. The search utility program creates a Web page that is a list of links to URLs that the search engine has found in its index that match the site visitor's search terms. The visitor can then click the links to visit those sites.

### ⊗. On-page SEO:

- On-page SEO includes providing good content, good keyword selection, putting keywords in correct places, giving an appropriate title for every page, etc.
- On-page SEO will analyze the complete website.
- On-page SEO will use internal linking.
- URL optimization, Internal links, External links, Optimize page content, Publish high-quality content etc. are techniques that are used in on-page SEO.
- On-page SEO looks at what our site is about.
- Internal linking, Mobile Friendly, Navigation, Content Quality, Page speed etc. are factors that impact On-page SEO.



### ⊗. Off-Page SEO:

- Off-page SEO includes link building, increasing link popularity, search engine, link exchange etc.
- In off-page SEO we will promote the website.
- In off-page SEO we will use direct linking.
- Influencer Outreach, Social Media Engagement, Social Bookmarking Sites, Forum Submission, Article Submission etc. are techniques that are used in off-page SEO.
- Off-page SEO looks at how popular our site is.
- Social Media, Backlinks, Mentions, Google Business Profile etc. are factors that impact Off-page SEO.

### ⊗. Page Rank:

Page Rank (PR) is an algorithm used by Google Search Engine to rank web pages in their search engine results. Page Rank is a way of measuring the importance of website pages. Page Rank was named after Larry Page, one of the founders of Google. According to Google, "Page Rank works by counting the number and quality of links to a page to determine a rough estimate of how important the website is. The underlying assumption is that more important websites are likely to receive more links from other websites". Currently, Page Rank is not the only algorithm used by Google to order search results, but it is the first algorithm that was used by the company, and it is the best known.



## ⊗. SEO activities to improve rank of the website: [Model set]

- ✓ 1) Use Google Analytics to Track Metrics: One of the first things any SEO should do is get familiar with Google Analytics. Learn all about our site's performance, audience demographics, and much more.
- ✓ 2) Optimize Existing Pages: Once we begin tracking our site's performance over time, we can see which pages are doing well and which need to be revisited.
- 3) Create Content Based on Keywords: Spamming pages with keywords is an ancient SEO tactic. Instead, perform thorough keyword research and build a content strategy around our findings.
- 4) Diversify Backlink Portfolio: A varied backlink portfolio tells Google that site is an authoritative source and that we're generating links in a natural way versus relying on outdated spam tactics.
- ✓ 5) Optimize Images: Provide alt text for every image, make image files as small as possible without compromising on quality, and ensure images display correctly on mobile devices.
- ✓ 6) Make Sure Site is Mobile-Friendly: Most users search via their mobile devices. Run site through Google's Mobile-Friendly Test and adjust as needed.
- ✓ 7) Decrease Load Times: It's difficult to get users stay on slow website. Ensure that site runs smoothly. Use Site Audit to identify potential issues.
- ✓ 8) Track Results: Once we implement an SEO strategy, it's important to track our results. This way, we can test what works well, find out what doesn't, and report on results.



## ⊗ Recommendation Systems:

The systems that use algorithms, to find similar items and similar customers, based on their behaviour and interest are known as recommendation systems. A recommendation system is a tool that uses a series of algorithms, data analysis and AI to make recommendations online. These systems are used to predict users' interests and recommend product items that might be interesting for them. For example, If we buy T-shirt from an ecommerce site, then next time when we visit the website, it suggests us various types of T-shirts and other clothing items. If we are interested in buying certain products, Recommendation systems use following kinds of info/data to make prediction about users' preferences:

- User rating about a product.
- Search engine queries made by user.
- User's purchase histories.

### Advantages of recommendation systems:

- Increase in sales as a result of very personalized offers and an enhanced customer experience.
- User can search item very fast of their interest.
- Companies are able to gain and retain customers by sending out emails with links to new offers that meet customers' interests.
- Because of recommendation, the user is more likely to buy additional products or consume more content.

### Types of Recommendation Systems:

- 1) Content-based systems: These systems make recommendations using a user's item and profile features. They check that if a user was interested in it in the future. Similar items are



usually grouped based on their features. User profiles are constructed using historical interactions or by explicitly asking users about their interests.

2) Collaborative filtering system: It is currently one of the most frequently used approach and usually provides better results than content-based recommendations. Some examples of this are found in the recommendation systems of Youtube, Netflix. These kinds of systems utilize user interactions to filter for items of interest.

### ⊗ Use of Recommendation Systems in E-commerce:

With the fast growth of internet and smart devices, e-commerce systems have become further convenient and common in our daily lives. There are various types of products in shopping sites, therefore there is a problem for client to find out the item of their interest. Therefore an appropriate recommendation system will be essential for e-commerce system. A recommendation system acquires information from a client and recommends goods that will find most valued among existing products.

The provided suggestions aimed to provide customers in numerous decision-making ability. Recommendation systems in e-commerce helps to increase sales, search item of customers interest very fast, and gain as well as retain customers. Many of the largest e-commerce web sites are using recommendation systems to help their customers find products to purchase.