

A Comparative Study of Ecommerce Websites in India

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ABSTRACT - E-commerce market of India is showing tremendous growth from the last couple of years and was expected to become the second-largest e-commerce market in the world by 2034. The revenue in the Indian market amounts to US\$40,845m in the year 2020 and there was an expectation of reaching an annual growth rate of 12.8% by 2024. Today e-commerce has beaten all the technical as well as geographical limits in the hustle of upgrading themselves. In this paper we have done a comparative analysis of two e-commerce portals of India—Flipkart, and Snapdeal based on technical and demographical parameters.

Keywords: Flipkart, Snapdeal, E-commerce, Online Marketing, Online Shopping.

I - INTRODUCTION

The Indian e-commerce industry has been on an upward growth trajectory and the e-commerce market is expected to reach appx. US\$ 210 billion by 2027. Current active e-commerce penetration in India stands only 28 percent, with lots of room for improvement - India's retail e-commerce CAGR is projected to reach 23 percent from 2016 to 2021. In 2016, Amazon.in was the leading e-commerce store with net worth in sales of 437.7 billion U.S. dollars in India which was followed by local competitors Flipkart and Snapdeal. The Flipkart and Snapdeal are the two emerging E-commerce giants of India. These two e-commerce companies have given the drastic changes in the market in their initial stages. Flipkart is the biggest online retailer in India, with a 31.92% market share in 2018. After adding the market share of its fashion specialty sites Myntra and Jabong, Flipkart controls appx. 38.36% market share and Snapdeal had just a market share of 1.9 percent.

A web-based business opens the overall market to the client, it helps the clients by giving the immense options while purchasing a thing or an administration, the internet looking and emerging offices empowering clients from select right item or administration, another realistic favorable position of online business is that 24x7 it is accessible to the client which offers them to practice the online shopping sitting at the home, office, at travel or about anywhere anytime. The web-based business presented new conceivable outcomes in the field of trading and pulled in consideration of various merchants.

II - RESEARCH METHODOLOGY

DATA COLLECTION

The motive behind collecting the all information is to trace the data and change it into valuable information which helps in analyzing the facts.

The primary data was collected from different peoples. Fundamentally the questions were requested to the individual who is in the same field and their knowledge inspires the data which helps in considering and dealing with the research whereas for doing the deep analysis of the subject secondary data was also taken into consideration. Secondary data is taken from several distributed papers.

III - LITERATURE SURVEY

Gupta(2014) in her research paper which was titled “E-Commerce: Role of e-commerce in today’s business” kept forward her study saying that e-commerce is not same as the e-business. The various kinds of models of e-commerce were analyzed for briefing and utilizing the maximum advantage from e-commerce market and some of the advantages was also enlisted by Rina in 2016 for country in her research.

The two researchers named Kotkar & Mishra had done a research on the current status of the e-commerce in India and noticed the advantage and development of Business-to-Commerce showing a great positive affect in the Indian e-commerce industry. In his research he Analyzed the two online e-commerce platforms “Flipkart and Amazon” and shown a great comparative study for analyzing the differences between the two giants industries and acknowledged during the research that there is very slow progress in some areas due to restricted and limited internet accessibility, lack of awareness and weak online payment systems. From the early 2000s there has been a very well growth trajectory has been traced in the Indian e-commerce industry with the expansion of online services to travel and accommodation sectors which continue to be major contributors even today.

Many companies like Myntra, Flipkart etc. is being funded by the many firms of the New York like Tiger Global Management. The availability of funds has presented a favourable conditions for the growth opportunities for big as well as small corporations. The penetration of e-commerce in the every fields humans needs & business sectors has raised a very tough completion for the startups to compete with the foreign giants industries in e-commerce sector. (Aggarwal, 2014) kept forward his study about the comparison and differentiation between e-commerce and traditional business is getting blurred. Similarly, China’s Alibaba Group and affiliate Ant Financial became the largest shareholders of One97 Communications, the parent of Indian e-tailer Paytm, by investing around \$700 million, (Aulakh, 2015). To tap the potential of what it regards as “underdeveloped internet economy” of India, Japanese investment companies and technology powerhouse of the Softbank has invested

Appx . \$629 million into online retailing marketplace Snapdeal and \$210 million in Ola cabs. (Mac, 2014).

Raghunath&Panga (2013) has done there study on the various point of facts in e-commerce and put it forword in front of the world naming the research as “Probles and Prospects of E-Commerce”. Giving prominence to the fact that, all the activities of business was about it’s marketing & promotions, payment etc. which can only be performed in the digital environment. The research also tell about various points regarding the importance of e-commerce. The accessibility of internet worldwide has give a digital door for the business there are so many other online tools which brought a new revolution in the business worldwide. The digital platform has opened too many opportunities for building and exploting new business . E-commerce was not only the reason behind enhancing the performance of internal business management, instead of that it is also the reason for building up the customer relationships by marketing the business model. The E-commerce was very helpful because of its low operating cost, improved customer interaction, time saving as the unique strengths of e-commerce.

The growth of digital commerce in India is slow because of the logistics failure, inadequate infrastructure, Lacking’s in tax uniformity and declining margins. In this face of intense competition, firms have to attract the customers with huge offers, discounts everyday with liberal returns policy which proves detrimental to their profits. As against the firms following inventory model, e-marketplaces are more adversely affected by subsidies as they have to offer incentives to the seller for listing their products on the website offering the various discounts and gift vouchers to the customers. Rina (2016) had discussed about the increasing the lesser connectivity between the sub-urban areas and urban areas because of the e-commerce and the logistics services. She discussed about the many advantages with the greater loses in the society.

IV - DATA ANALYSIS & RESULTS

All the data found through the primary and the secondary search it was found that the Flipkart is much more updated in terms of the technology in comparison to the Snapdeal. They are using the current newly developed technologies due to which their site performance was slightly better than snapdeal website functionalities which is also helpful in driving the web traffic to their website site. The Flipkart is investing too much money to make its application fast and up- to- date. The Flipkart has given the contracts to a different organization to handle their site workings like they has taken their domain from the GoDaddy company and talking about the hosting- in early stages Flipkart corporation was using Apache Tomcat web server but they have evolved with the time now they were using Nginx web server while the snapdeal is still stuck to Apache webserver from last one decade. Here are some technologies mentioned below in the table which will tell you the technical differences between the two e-commerce sites;

TABLE I- COMPARATIVE TECHNOLOGICAL DETAILS

<i>TECHNOLOGIES</i>	<i>FLIPKART</i>	<i>SNAPDEAL</i>
<i>CORE LANGUAGES</i>	<i>PHP, JAVA, SCALA</i>	<i>JAVA, JAVA SCRIPT</i>
<i>WEB SERVER</i>	<i>NGINX</i>	<i>APACHE TOMCAT</i>
<i>WEB HOSTING</i>	<i>NETMAGIC AND AWS.</i>	<i>TELIASONER A.</i>
<i>ANALYTICS</i>	<i>HP VERTICA, GOOGLE ANALYTICS, ADOBE ANALYTICS, ADOBE MARKETING CLOUD, SITE CATALYST.</i>	<i>SITE CATALYST</i>
<i>ADVERTISING NETWORK</i>	<i>CRITEO</i>	<i>CRITEO</i>
<i>DNS SERVER</i>	<i>NEUSTER</i>	<i>CLOUD FLARE</i>

The above table gives the detail about some of the main technological tools which are used by the e-commerce portals and which makes the differences in their ranking around the world. The Flipkart is at 104th rank around the globe with a revenue-generating of US\$6.1 billion (FY2019) whereas the Snapdeal is sharing 1,168th rank on the table with US\$130 million by Alexa world ranking.

Flipkart's growing exceptional well with the time and they are constantly working on these technologies to grow technically as well. They are using a service-oriented architecture which was very helpful in giving the very user-friendly experience to users — such as search service, product listings service etc. All the services are very much important for providing good experience as well as maintaining the data of the data store according to the customer choices. Flipkart is using many necessary analytics as well as the security and marketing services. Flipkart Data Platform provides wide range of data to store which are accessible and necessary for the teams to consume and act on this data. As we discussed earlier that the flipkart is having wide range of data platform. The flipkart data platform is managing around more than 700 hadoop cluster for maintain more than 25 PB of data. Daily TBs of data is ingested into FDP who is also responsible for handling data spikes because of sale events. The flipkart is currently having around 30,000 working employees in their company. While coming to the Snapdeal online shopping portal all through the journey of this company they were intended to create life-changing experiences by connecting buyers to sellers and till date this company is working in the market with around 3,800 employees. The company's portal offers quick delivery to the remotest corners of the country and daily deals, discounts and offers to make products available at slashed down prices, enabling customers to buy from national, international and regional brands across categories.

In the current world of technological revolution, if your business has no website for it then it has no identity. Web design is extremely important for any business. Speed, usability, content, maintenance and many more factors go into having a successful online presence.

V - TESTED RESULTS:

A. Statistics of both websites based on their time taken in opening the web portals;

These stats are considering the time which was taken by both websites to open the website. There are various reasons on which the site loading speed matters like rendering- blocking javascript, if CSS not optimized, not using CDN onto the website etc. all the segments like these are tested for both the sites

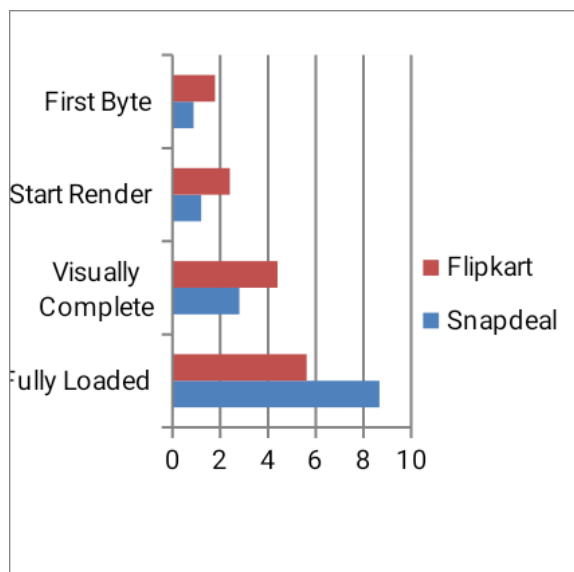


Fig. 1 A bar graph showing the time taken by both the websites for loading.

and the results are prepared according to that which follows the first byte, start render, visually completion of images and the total times taken the website to fully load.

B. Statistics based on weights and requests;

The page weight is basically the gravity of the web which the page downward which means , the rate of responding to any request of website decreases and load time of the page increases. Whenever there is any request on the website the server computer keeps a track records of that requests which is very helpful and allowing the operators to look over and examine which page is getting the most attention. The weights and requests on the website plays a very important role in any website.

NAME	TOTAL WEIG HT	TOTAL OF REQUE STS	HTTP/ 2 SUPPO RT
WWW.FLIPKART.COM	734 KB	40	8%
WWW.SNAPDEAL .COM/	1.19 MB	88	30%

TABLE 2 – COMPARISION OF WEIGHT& REQUESTS.

This table is showing the difference between both the websites on following aspects like the weight, requests and html supports.

Follow the graph to understand the weights on both the website.

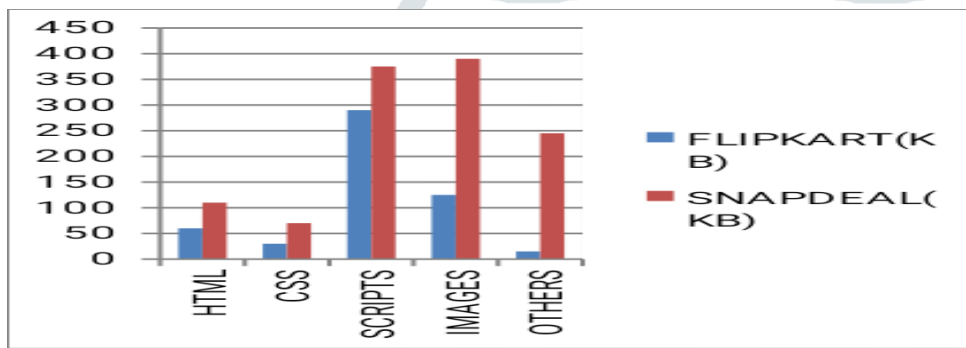


Fig.2 A column graph showing the weights on the websites.

Follow the figures to understand more about results. It is very simple to examine that the weights and the requests on the snapdeal web portal is way more than the flipkart. The Flipkart is very user friendly comparing to the Snapdeal portal that is why Flipkart is getting more web traffic than snapdeal and web traffic analysis is very much essential for giving the business reliable information about the interests of their customers. There weights and requests are elements which are responsible for making the site performance bad. The regular maintaining the sites weights and requests are very important as it affects the load time, cost, market reach etc.

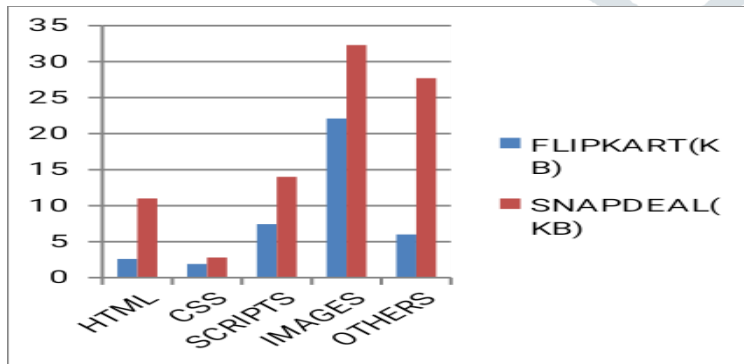


Fig. 3 A column graph showing the requests on the websites.

C. Difference of speed index of the websites:

Speed Index ; It is a page load performance metric i.e., quickly the contents of a page are visibly populated. The lower the score, the better. The Flipkart speed index is 3172 ms and Snapdeal has 2908 ms of speed index.

TEST RESULTS:

S NO.	TEST NAME	FLIPKART	SNAPDEAL
1.	FIRST BYTE	1.78 SEC	0.88 SEC
2	START RENDER	2.40 SEC	1.20 SEC
3	FULLY LOADED	5.62 SEC	8.67 SEC
4	SPEED INDEX	3172 MS	2908 MS

TABLE 3 – SHOWING COMPARATIVE RESULTS DIFFERENCE

During the test there were several issues detected in both the websites.

C. Technical issues in Flipkart

- Accessibility- 2 labels do not refer to an element.
- Browser rendering- Should reduce the number of DOM elements.
- Number of requests- 1 redirect requires 586 milliseconds.
- SEO- add 'alt' attributes on tags.
- Security- 4 cookies are not secured.

D. Technical issues in Snapdeal

- Accessibility- each form must define a submit button
- 2 labels do not refer to an element.
- Browser rendering- should reduce the number of DOM elements
- Specify a character set in the response HTTP header.

- Data Amount- 7 images are resized on browser
- Optimize your image.
- Use a better file format for your fonts.
- Number of requests- 1 resource is unreachable.
- One redirect required 719 milliseconds.
- Quality- 9 id's are duplicated in HTML.
- SEO- add <h1> title in your contents.
- Add 'alt' attributes on tags.
- Security- the content security policy is missing.
- 69 cookies are not secured.

VI - FINDINGS DISCUSSION

- Customers are preferring quality products as well as web portals because the old techniques used by
- Snapdeal customer traffic on their website are less with comparison to Flipkart.
- Site speed plays a crucial role if the web pages take longer than expected time to fully load the website then traffic might get diverted to another. It affects a variety of key metrics, for example, including your site's visibility and conversion rate., users expect websites to be fast. You'll likely see higher page abandonment and bounce rates at low loading.
- During the testing in flipkart there are 5 issues occurred while in case of snapdeal their 14 issues were occurred.
- Flipkart technologies evolved with the time they are constantly working on their technologies. Main detected technologies during testing of website are Nginx, React, Site Catalyst, Web Pack. Main detected technologies during testing of snapdeal website are Akamai, Apache Tomcat, Cretio, Google Tag Manager, Site Catalyst, Twitter Bootstrap, JQuery.
- Snapdeal web servers are less effective.
- India is a big market place for e-commerce.
- Advertising are very innovative and attractive of both the companies which is also responsible for expending their business at such a great measure..
- Snapdeal page contains 5402 DOM contents which needs to be less than 1000 for better performance.
- Flipkart is more secured then Snapdeal.
- Flipkart has it's own logistics service but snapdeal doesn't have it's own logistics.
- Flipkart intends to offer everything except groceries and automobile whereas Snapdeal offers almost all categories focusing on unique unbranded products.

VII - CONCLUSIONS

This examination put forward all the major performances and work done by both e-commerce players in India. These both e-commerce companies are doing their best to compete around the world where the Flipkart is doing slightly better in comparison to the Snapdeal in the field of making themselves more efficient in marketing themselves globally and making their web portal more user-friendly. By constantly improving their technology. As well as from the study it was also concluded that the Indian e-commerce market is growing at a rapid speed and offering too many opportunities to peoples to contribute in e-commerce.

In this modern the the millions of the online active users are preferring shopping through e-commerce sites as it was easy and time saving with many other advantages. In the last couple of years there has been a very huge growth is registered in the Indian E- Commerce both in revenue and geographic reach.

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REFERENCES

- [1] <https://deviceatlas.com/blog/understanding-web-page-weight>
- [2] <https://www.ibef.org/industry/ecommerce> [3] <https://www.statista.com/outlook/243/119/ecommerce>
- [4] https://www.unido.org/sites/default/files/2017-10/WP_15_2017_.pdf
- [5] <https://www.w3tech.com>
- [6] www.dareboost.com
- [7] Sinha(2009), Ecommerce in India- The Real Challenges.
- [8] Web.archive.org
- [9] www.buildwith.com
- [10] www.google scholar.com
- [11] <https://www.journalijdr.com/study-impact-e-commerce-india%E2%80%99s-commerce>
- [12] https://www.researchgate.net/publication/307863488_Ranking_E_-_Commerce_Websites_Using_Feature_Array