Abstract

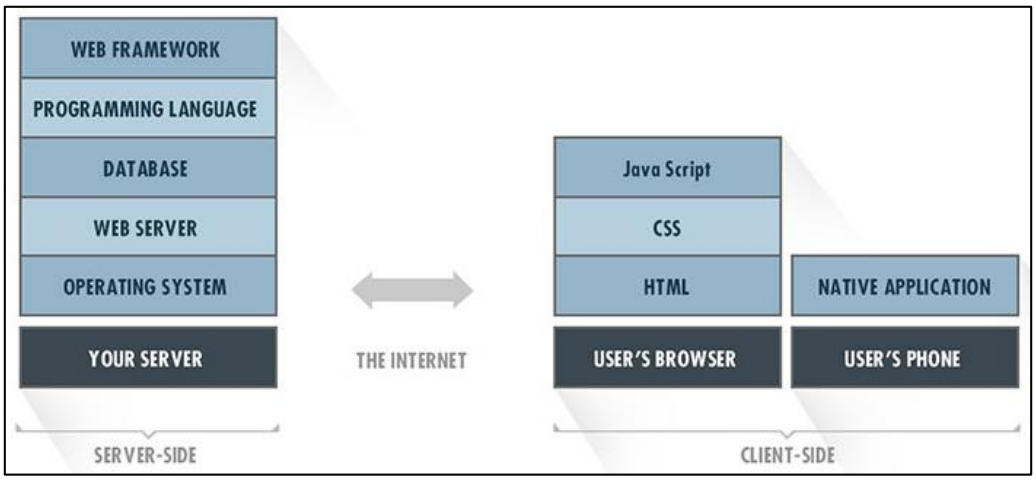
An e-commerce site like Flipkart is all about getting a product into the hands of the customers quickly and learning from their feedback and having their choices.

Before any idea gets convert into reality to launch into market, code for the online site needs to be written, and so we will need to select the tech stack that will power our application. Selecting a tech stack is often a hard decision for founders to navigate. The options are overwhelming if we are non-technical, and they come with a fear that committing to the wrong language or framework will have serious consequences down the road.

Formal Definition

The first step should be clearing away the fog around the term “technology stack” so that we can mentally place each technology in its correct category.

A tech stack is a combination of software products and programming languages used to create a web or mobile application. Applications have two software components: client-side and server-side, also known as front-end and back-end.



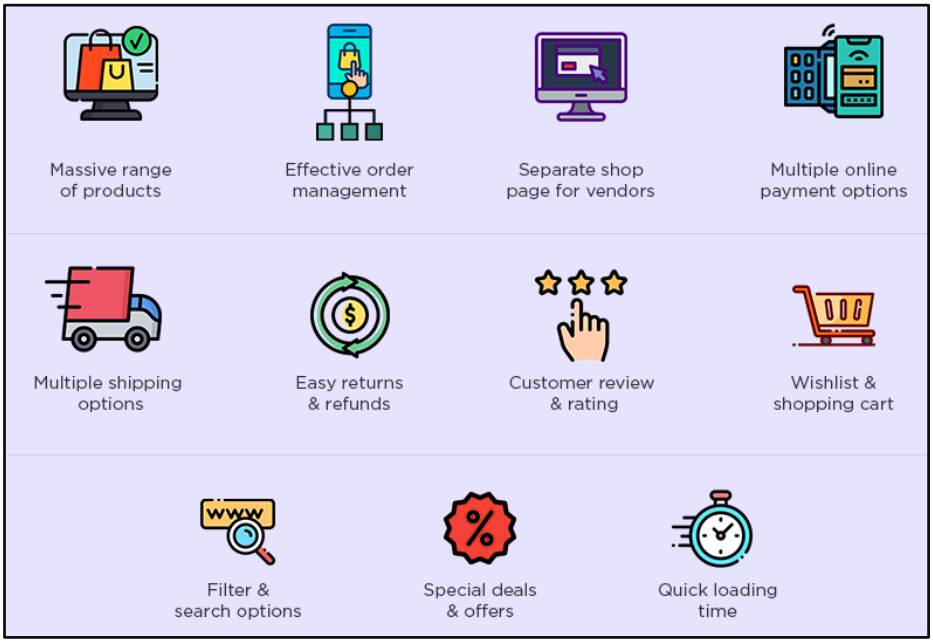
So, in this particular article we shall have a detailed overview on the different technologies used to run a well-planned organized site like Flipkart which connects millions of customers and its employees too.

Overview of Technology Stack used by Flipkart.com.

An Indian e-commerce company based on Bangalore, Karnataka, India is what we known as 'Flipkart'. It was founded by Sachin Bansal and Binny Bansal in the year 2007. The company initially focused on book sales, before expanding into other product categories such as consumer electronics, fashion, home essentials & groceries, and lifestyle products.

Technology is the backbone of Flipkart's dominance in the ecommerce market with AI, ML, IOT, data science, and robotics making for a holistic shopping experience. It has been the key differentiator in Flipkart's journey over the last 12 years and this will continue do so as India's largest ecommerce company leverages technologies.

In its quest for excellence in technology, Flipkart has been engaging with the ecosystem to create a collaborative environment. Along this path, there have been many technologists associated with it. Starting from the client server technology to the web server and DNS service provider it has always been using the best technologies.



The business ideology behind the Flipkart:

1. Portal lists merchants and their products to sell
2. Create appealing deals & discounts
3. Buyers search through the products and shop for their desired items
4. Flipkart/Merchant ships the products to the consumer
5. Vendors receive the agreed price of their product after deducting the Flipkart commission for delivering the product.

There are lots of queries regarding the one who designed it but the bigger question for us is what technology does Flipkart use, because it is that technology which is making Flipkart a users' favourite.

Developing an online platform is a job that requires equal share of Technological expertise and sound decision making. Principally built on PHP, this website offers human experience which makes the shopping experience as satisfying as in a real store.

Sachin Bansal, one of the founders, did initial coding on an open source platform and customized it according to their initial business needs. Later on, the duo focused more on the management aspects like packaging and delivery. As in current times, their programming engineers make it sure that the site is high on responsiveness and low on tech errors, which is the most favourable selling point of this online store.

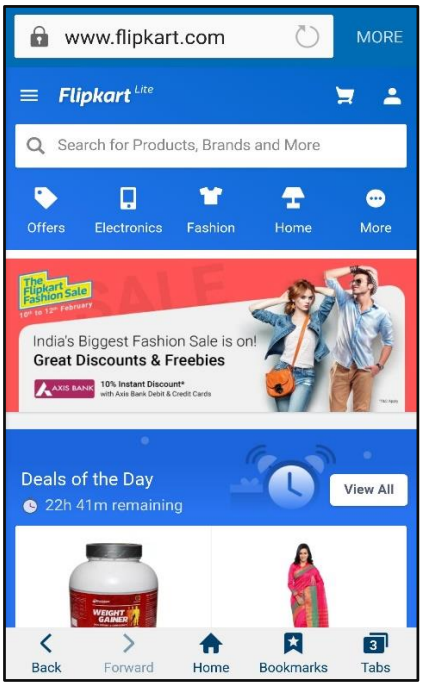
Website Description:

Flipkart is the evidence of efficient use of PHP development services for an e-commerce website design. Since it is built mainly on PHP, Flipkart site enables a contented purchasing experience as in a real store. It uses MySQL for data storage and all of its software functions on Linux.

The main strategy that ensure the sales objective in Flipkart websites are

- Group Products Together
- Leverage Quality Photography
- Design for Mobile
- Give Website a Personality
- Optimize the Purchase Process
- Expect what the buyer is looking for

Description on homepage - Online Shopping Site for Mobiles, Electronics, Furniture, Grocery, Lifestyle, Books & More. Best Offers! India's biggest online store for Mobiles, Fashion (Clothes/Shoes), Electronics, Home Appliances, Books, Home, Furniture, Grocery, Jewellery, Sporting goods, Beauty & Personal Care and more! Find the largest selection from all brands at the lowest prices in India. Payment options - COD, EMI, Credit card, Debit card & more.



The payment gateway of Flipkart is the most vital component to concentrate before launching its designed e-Commerce website. A reliable Payment Gateway is required that allows our buyers to pay directly on the website using debit cards, credit cards, and other payment options. Customers will make a regular purchase only if they’re happy with the payment gateway, and that is why people prefer Flipkart as their major mode of online shopping.

Creating an e-commerce website is the ideal way to keep our business competitive and to increase access to our products. Engaging users with innovative solutions and infusing technology to ensure discoverability, user experience and responsiveness adds success to an online store. Flipkart meets these requirements perfectly and becomes the prominent e-commerce website in India.

Client Server Programming Language:

JavaScript: JavaScript is a lightweight, object-oriented, cross-platform scripting language, often used within web pages.

Web Server:

Nginx: Nginx is a web server which can also be used as a reverse proxy, load balancer, mail proxy and HTTP cache. The software was created by Igor Sysoev and first publicly released in 2004.

DNS Server Provider:

Neustar Ultra DNS: Neustar offers DNS services under the UltraDNS and UltraRecursive DNS brands. It is a cost effective enterprise grade, cloud-based recursive DNS service that delivers fast and reliable access to vital online applications with built-in security and threat intelligence.

Some unknown facts:

- Abhishek Kona, ex-Flipkart Engineer has revealed that Flipkart does not depend on any fixed technology stacks rather aim at knowing which tool solves their problem best and use that one flexibly. In his work tenure at Flipkart, he has used Java, Scala and pure python for different projects.
- All their software run on Linux – Debian and most of other systems make use of JVM, even though they are not always created on Java.
- Flipkart uses MySQL for data storage and Memcached for caching. The company has assessed top most No SQL data stores to pick the best for the production.
- Hadoop is another software that Flipkart uses for various projects. It simplifies evaluation and data management.

Email Service Provider:

Gmail: Gmail is the email service provided by Flipkart for users registering themselves in the platform. Gmail is a free email service developed by Google. Users can access Gmail on the web and using third-party programs that synchronize email content through POP or IMAP protocols.

SSL Certificate Authority:

GoDaddy: GoDaddy is an IT service provider, among others operating as SSL certificate authority. This includes ValiCert certificates, now operated by GoDaddy.

Site Elements:

1. External CSS: External Cascading Style Sheets define style rules in a separate CSS file.

2. Embedded CSS: Embedded Cascading Style Sheets define a set of style rules in a <style> element within a web page.

3. Inline CSS: Inline Cascading Style Sheets define style rules directly within an (X)HTML element using the style attribute.

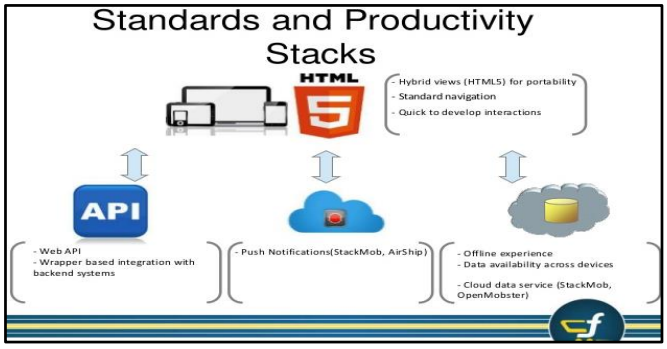
4. Cookies expiring in months: Persistent cookies with an expiration time between 1 month and 1 year.

Structured Data Formats:

1. Open Graph: The Open Graph protocol, originally developed by Facebook, is an RDFa-based format that enables any web page to become a rich object in a social graph.

2. Twitter Cards: Twitter Cards enable automatic attachment of photos, videos and media elements to Tweets.

3. JSON-LD: JSON-LD (JavaScript Object Notation for Linked Data) is a method of encoding Linked Data using JSON.



Markup Language:

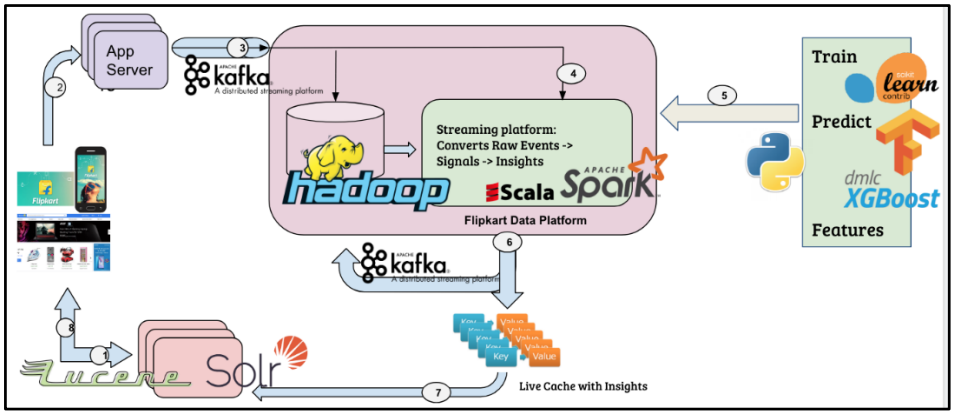
HTML 5: HTML5 is a markup language used for structuring and presenting content on the World Wide Web. It was the fifth and last major version of HTML that is a World Wide Web Consortium recommendation.

Image File Format: SVG: Scalable Vector Graphics is an Extensible Markup Language-based vector image format for two-dimensional graphics with support for interactivity and animation.

What makes Flipkart a Success Story?

Engineers at Flipkart use A/B framework to test new ideas and implementations so that the upgraded functionality can be delivered to its customers. It offers fast checkout, instant product search and Layered and Faceted Navigation that adds to its user experience.

- Apart from the consistent ecommerce features, they have added innovation in their offers and discount section that adds to buyers' confidence.
- Appropriate space is dedicated to its Offers zone and deal of the day that fetches adequate attention of users.
- Flipkart keeps a constant focus on new category creation and expansion of products.
- Its ads and promotion activities motivate shoppers to buy online by delivering the idea of ease to them.



The summarizing words…

Engaging customers with infusing technology and innovative solutions is the thumb rule to raise an online store like Flipkart.

Except this, what adds to its success is:

- ✓ Discoverability
- ✓ User experience
- ✓ Responsiveness

Flipkart meets the above mentioned standards perfectly and thus happens to be one of the most saleable ecommerce brands of India.

"It is not the idea that defines your success, it's how you bring it forth."
