

25 JAN 2023 - E-commerce

Business Models:

Definition: A business model is a company's plan for generating profit. A business model describes how our organization creates, delivers and captures required values. Business model also identifies the product or services or the business plans to sell, its target market, and any anticipated expenses. The process of business model construction and modification is called business model innovation model.

→ In one sentence a business model is a plan for generating revenue. Types of Business Model; there are following types of Business Model exist these days. To adopt their specific needs and goals.

These days Business to consumer OR consumer Model.

B2C (Business To Customer) / B2C

(i) This Model Involves selling of prepared products or services directly to individual customers who buy the products. B2C-E-commerce is commonly seen in at large scale through online retail stores these days where customer can browse and give order to purchase the desired products.

This is the most traditional type of Business model where Businesses / Company sell products or services directly to the purchasing customer.

Without any Intermediate Structure or media. A common examples of B2C Ecommerce are - flipkart, Myntra.

2. BTOB (Business To Business Model)

In this Model Businesses and Companies sell products / services to other equivalent businesses.

BTOB Ecommerce often involves bulk orders Negotiations of terms and negot Integration with supply chain Systems.

→ In BTOB model transaction of products occurs between two companies such as a manufacturer with a retailer for selling goods. → BTOB commerce uses heavy transactions in business Industry. → In this model Normally a manufacturer sells their products to the other manufacturer or distributor or wholesale sellers or retailers in large amount using strong supply change chain system.

→ consumer to consumer Or Customer to Customer (C2C)

C2C Model :- In this model consumers sell-to-self products or services directly to other customers mainly through online mode. This type of business model transforms the product to other customers at small level.

→ The common examples of consumer to consumer business model are : ola, Care De Kho. This business model does not provide more security and privacy. → Customer to Business (C2B)

→ In this business model free-lancer type of workers work for tasks provided by clients. most of these clients are commercial entities. and free-lancers are mostly individuals.

- The common example of C2B Business models are online auction websites, freelance Market place, and affiliate marketing.
- Business to Government (B2G) B2G: B2G Model is a variant of B2B model. → B2G model is an e-commerce business model where a business world markets & supply their products or services to the government agencies at large scale with certain terms and conditions.
 - This model strictly follows the security and privacy rules.
 - The model transfers the products and services in bulk. In this model Government Agencies usually put up requests for proposals and e-commerce businesses have to bid on Government projects.

The business bid supply products and services to the government agencies with defined terms and conditions for agreements.

Government to Citizen (G2C) G2C : In this model government uses their websites to approach citizens to supply or provide requested services. In this model the government website supports different types of activities such as:
the making of voter id card, PAN Card, Aadhar Card, Birth certificate, Residential, Income certificates, Death certificates etc. The main objective of this model is to reduce the average time of securing or to provide services quickly to their citizens.

P2P Model (P2P) / P2R :

- In this model delivery of products or services from buyer to buyer directly without the involvement of a centralised body. → It typically involves sharing or renting of the resources through online platform.

29.01.2024 : E-commerce:

- Basic components of / Or framework of E-commerce :
- (i) The basic framework^{or} components of a typical e-commerce are as follows - (i). User Interface: It includes - websites. Typical E-commerce must contain a standard and advanced website with all the user required features and security that serves as front-end interface for users where users can customers because products, may purchase orders and interact with other related products. (ii). Mobile Apps: In addition to a typical website many advanced E-commerce businesses offer a mobile app for those users who mostly use the E-commerce business through smart phones. Thus, mobile apps helps a more convenient shopping experience on smart phones and tablets in any geographical area or location. (iii) product catalog: products catalog may be of following types: (a) listing products: This structure contains a variety of products list with its detailed information including images, descriptions, features, price availability status, and others.

① Search and Navigation option / structure.

The structure of structured product catalog implements search facility with full functionality and intuitive navigation which means that a searching facility with features that supports the finding of products very easily and quickly.

② Shopping cart : this structure includes -

Add to cart facility: this structure allows users to add items.

To show shopping cart for later purchase.

Cart management.

web technology

Statement, prepared statement, callable statement.

JDBC statements, prepared statement and callable statements.

We send query to DB server to do operation.

JDBC statements: JDBC statements are used to execute SQL statement.

JDBC API supports 3 types of JDBC statements, which are as follows:

① Statement - This statement object executes a named SQL statement to update or query the database. The Java.sql.Statement; interface is a part of JDBC API that describes a standard abstraction for the Statement object. The Statement object supports two main types of SQL statements.

update statement, which are usually used for operation that does not generate response. and a query statement.

② PreparedStatement - This statement object is used for execution of SQL statement that generates response. It is used for executing SQL statement multiple times with different values.

③ CallableStatement - This statement object is used for executing stored procedures or functions in the database.

we can use the execute statement method of the connection object to obtain statement object.

The following methods are provided by Statement objects which are as follows: (a) execute update (String SQL Statement) This method executes the SQL statement that create insert, update and delete the database.

(b) execute query (→ String query)

This method is used to execute the SQL statement to query the database. we can execute the select statement to retrieve the records from the database. This method returns the query results in the form of result set object.

The result set object contains the form of results generated after executing the specified SQL query.

The execute method () The execute method: This method is generic method that creates any SQL statements used to update or query the database. This method returns a boolean value indicating whether or not the given SQL statement had generated a result set. If the boolean value evaluates to true, the result set is generated, otherwise it implies that the SQL statement has not generated a result set.

Prepared Statement: The prepared statement object is used to execute the parameterised SQL statements. It is important to note that when the parameterised SQL statement is used with the prepared statement

object: when we compare prepared statement with statement object, the following outcomes are as follows:

(i) Statement

execute()

(ii) statement object

The execute method

submitstheSQL → is called on statement object
Statement to DB with SQL statement.

The execution plan
for the compiled SQL
Statement is then
executed.

the results are sent
to the statement object.
is associated with the connection object.

The prepared statement
object represents the
execution plan of an SQL
statement saved in the
DB. It is passed as
a parameter by executing
the prepared statement object.

The execution plan is prepared
by the database to execute
the SQL statement.

✓ The execute method of prepared
statement object is called to
set the parameters of the SQL
Statement if it is representing
the method is invoked to
execute the SQL statement
with the parameters set
for the prepared statement.

A 30 . B 29 .

20.01.2024 E-commerce:

Add to cart: Card management: This feature enables users to review, edit and remove items in their card & cart totals. This feature of shopping cart displays the total cost of selected items in the cart, total taxes applicable in that place, and shipping fee applicable on the products etc.

User accounts may contain following categories - (i) user (in user accounts), (ii) new user accounts: negotiation: This section of user accounts helps to create new user accounts for that e-commerce businesses with personal information and preferences.

Login and authentication: This section of user accounts namely authenticates user to access their accounts with authentication found table.

(iii) Profile Management: This section of user accounts helps the user to manage or update their profiles, shipping addresses, payment methods, etc. time to time.

(iv) Payment processing: In this process checkout is done after successful purchasing order and includes - (v) Shipping and Billing: In this section, admin collects shipping and billing information from user account and verifies all these. If found correct then shipping details forwarded at given addresses with selected billing information.

Purchase processing: In this section the payment method is checked and verified, if payment method is cash then the billing is done otherwise and if billing is payment method is through online transaction then the billing is handled another way.

Order confirmation: In this section order confirmation or rejection is done on the basis of purchasing order and payment processing. After successful purchase confirmation delivery process is going to start.

(vi) Order management: This option includes - (i) Order history, This section contains all the orders given by user in present time, or previous time. It also contains previous time, cancelled orders details.

(vii) Inventory Management: This option / section keeps track of products, availability, and update stock levels.

in real time. (iii) Order Fulfillment: In this action the vendor fulfillment and shipping is finally done after checking the payment and product status. This is a streamline internal process of a e-commerce site.

To continue next day:

(vi) Customer Support:

web Technology:

Servlet:

what is servlet; features and the advantages of servlet.

Java servlets technology provides a simple vendor independent mechanism for extending the functionality of a web server. This technology provides component based, platform independent and domain independent standard to develop web applications in Java.

A java servlet is a simple Java class which is dynamically loaded over web servers and therefore enhance the functionality of the web servers.

Servlet

Cave java . . .
↓
(core api)

3-tier arch. is used to develop the web app.

1st 2nd 3rd
JDBC Servlet Database.

JAVA APP JSP [RDBMS]
Web Developer Struts MySQL, oracle / others

Servlet Spring others is used.

JSP Spring boot

Framework

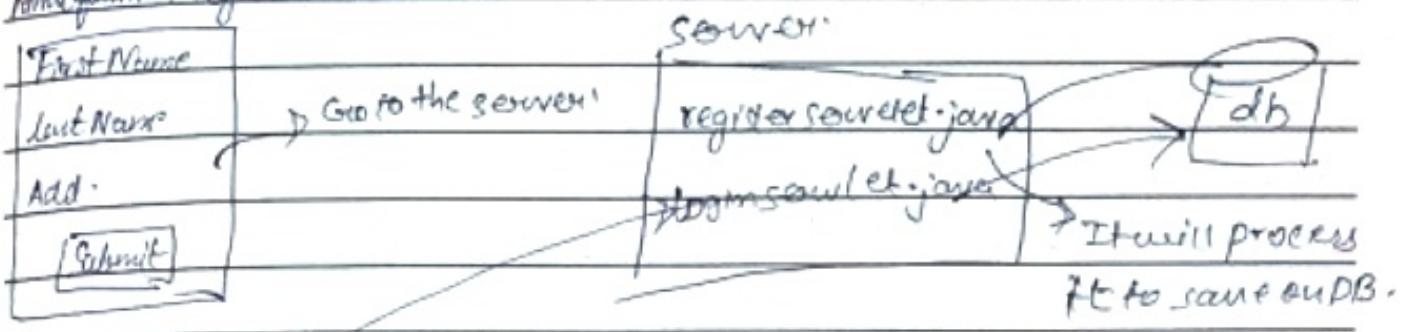
Spring

Spring boot

IBM ESTABLISHED in 1979

servlet: Provides, extends the functionality of web server, no main method.
Container: Apache Tomcat.

HTML form → registration.html.



~~Form~~ → ~~User~~ ~~pwd~~ ~~Submit~~
Advantages Java servlet is one of the component of API of Java platform. Interfaces Edition. It set standards for building Dynamic web applications.

Dynamic web Application in java. Java servlet application can run on any web server integrated with a servlet container like webserver or portlet.

Java execution engine or point compiler &

The servlet container create servlet object & /

A servlet is usually designed to process HTTP requests such as get and post GET And POST. The process can be summarized as:

- (1) Client send request to a servlet container which acts as the mediator through a web browser. (2) The web browser decide for the required servlet and instantiate it (creating an object).
- (3) The servlet then process the request, process the client request and send the response back to the server which is forwarded to the client. HTML CSS JS = Client side → send request to server whenever servlet is present, for whom servlet will be instantiated is determined by servlet container.

Browser will send back to server, client will be update its client side response. The browser is the receiver is decoding.

31 Jan 2024

HTTP protocol and HTTP methods.

HTTP works on application layer. To define connection of browser to send the request. HTTP specially meant to communicate between client and server using Internet. The HTTP is a stateless protocol. It supports only one request for connection. HTTP client connect to the server to send one request then it is disconnected. To run web application web browser communicate with web server with server; it is a stateless process the request to client and then give response.

HTTP client circuit switching of some request from server after a period of time same client & other clients.

HTTP session like a thread and client & server

HTTP session layer will handle the connection between client and server.

To view webpage, the web browser uses the big HTTP when you type any url in browser. Browser send a HTTP request to server.

By default for the get method, method = "post" password & file got it overcome with parameter with value 1.

To encapsulate the sensitive info, we convert to server, we use post method.

The server receives the request and send back response. **IBM ESTABLISHED in 1979**

Request data to the server

HTTP is also called connectionless protocol which means that the client establish the connection with the server before sending a request and the server send back the response back to the client over the connection only. When a response is delivered the connection between the client and the server is destroyed. If the same client want to connect to same server again the client should establish a new connection. As HTTP is designed as connectionless for this purpose.

HTTP is designed by Tim Berners Lee in early 90's. Some methods of HTTP are get, POST, and Head, OPTION, Trace, Put, Delete

GET, POST, HEAD, OPTION, TRACE, PUT, DELETE

HTTP Request: When the client send the request to the server then it is known as HTTP Request and the server returns a response to the client. Client send a request specifying one of the 7 HTTP request methods.

HTTP Response: Once a server receive a request, it interprets the request message and responds with an ^{response} http message containing response status code, description & response code. A set of headers and message body. This status code is used to indicate whether HTTP request has been successfully completed or not.

Client Error - 400-499. successful : (200-299)

Redirect Error - 300-399

Server Error - 500-599.

IBM ESTABLISHED in 1979

HTTP Methods:

To send request client can use various HTTP methods, and these request methods are case sensitive should always be noted in upper case. These are various HTTP request methods such as ~~get~~ GET, POST, PUT, HEAD, DELETE, OPTION ETC.

GET Method : Is used to retrieve requested Data from a specified resource in the server. It is one of the most popular and commonly used HTTP request method. GET request only used to request Data. It means that Get method is used to retrieve information and Does not make any changes to the in the server.

Ex:-

```
<form name="Info-user.jsp" method="get">
```

```
<form name="Infoform" action="User.jsp" method="get">
```

from the above code the resource file : user.jsp and the method will be get. and Get method is used to retrieve values from the server which was passed / sent in the URL of a Get Request.

localhost : 8080/ex/jsp/~~User.jsp~~?name=Ravi&course=MCA.
↓ ↓ ↓
refer to me part no parameter value
localhost my webserver send from
my webserver port no client side.

post method: another type of HTTP request method is post. This method is used to send data to a server to create or update a ~~resource~~^{resource}. Here the information submitted using post request method to the server is received (stored) in the request body of the HTTP request. The information / data sent through the post method will not be visible in the URL as parameters are not sent along with the URL.

31-JUN-2024

E-commerce

customer support: ..

customer service: this section of customer support offers various channels for customer support such as the form of chat .., through email, via phone etc., or FAQ and Help sections. This section of customer support provides self-support services resources for common inquiries, in the form of documents, which includes several questions along with their answers in detail., By using this document user may solve a common type of problems if arises.

Customer Support: Returns and Refunds: This section of customer support defines a clear policy for returns and refunds of products whenever used by customers.

Returns and Refund

Security and Privacy: This option includes Data protection. It ensures the security of customers' data and payment information for this E-commerce business. Implements higher level of security, encryption Techniques and firewalls - **iIBM ESTABLISHED in 1979**

(ii) Policy Policy: In this option there is a consideration when customer data is collected, used and protected by the system. To this the sharing criteria is also included.

Analytics and reporting: This section is of e-commerce businesses are helpful for e-commerce site. In this section following studies are performed - sales analysis. In this part an e-commerce business track the sales (monthly and yearly) structures collections and conversion rates. All these processes are done by a group of experts teams (called sales analysts). This is a regular routine work.

Inventory insights: In this section the analytical team gathers required data in large amount to check the behaviour and preferences. Choices. Inventory Analytics. In this section the expert Team monitors the inventory labels and product status in their stock. The stores so inventory determines to accept the purchase order or to deliver the accepted order.

e-commerce Architecture.

1.02.2024
servlet
contains a servlet container some times known as servlet engine.
It is an integrated set of objects that provide software environment
for server side component. The service provided by servlet
container are as follows: Network Service:-
component: Servlet, JSP, EJB. It does the role of JVM.

- (i) Network Service: It loads a servlet class and provides the network
facility over which the request and response are sent.
- (ii) Manager lifecycle of a servlet • Resource management: It manages
the static and dynamic resources such as HTML, JSP pages,
EJB, servlet etc.

Session Management: It maintains a session by appending a session id
to the URL path. All the servlet container support HTTP on the
backend for sending request and response. Servlet API:

Servlet API is a part of the Java Servlet Application designed
by sun microsystems. This API supported by all Java servlet
Container such as TOMCAT, weblogic etc.

API contains classes and interface that are packaged
in the following packages of the servlet API. ~~Java~~ ✓ javax
servlet, javax.servlet.http

Servlet life cycle: servlet object is initialised and managed
by the servlet container. The servlet container uses the
java.servlet.Servlet interface. To understand the servlet
object manage it. The servlet life cycle mainly goes through
four stages. Creating a servlet → Initialising the servlet
→ Request handling → Destroying the servlet.

The servlet lifecycle includes entire process from its creation to the destruction. The servlet container manages the entire lifecycle of the servlet using the javax.servlet.Servlet interface. Every servlet must implement the javax.servlet.Servlet Interface. either directly or indirectly. The servlet Interface defines the methods of servlet lifecycle such as init() Init method, service method, destroy method.

The first stage of servlet lifecycle involves: loading and initializing the servlet by with the help of web container. Installing the context on configuration. The servlet will be true integer value. To load. or stand up property. After loading web container. init() the servlet and creates new instance of the servlet. The following life cycle of the servlet starts from invoking init() method.

init() - method — This method is called when the servlet lifecycle begins. the servlet container calls this method. after the servlet class has been instantiated. This method is called exactly once. by the servlet container to indicate the servlet is being placed into service. In this method servlet creates the resources including the datamember while handling request. service methods. The service methods is used to handle incoming request and generates a response. This method is also called by servlet container and cannot

start service execution until the service's init method has been executed. The most commonly used by this method is in the HTTP servlet class.

The HTTP servlet class provides HTTP specific methods such as doGet, doPost, doHead, doTrace etc. In order to generate a response, we should provide the Do-Get and do-Post methods as per requirement. This method has following signature -

public void service (HttpServletRequest req, HttpServletResponse res) { } JSP

✓ Destory method: The Destory method is called only once when all the functioning of the servlet is over and it is at the end of the life-cycle. When your application is stopped, our servlet container shut down. This method will be called to close down their shared resources and other cleanup required before the servlet is taken out of the service. This is the place where any resources that were created or init method will be cleaned up.

1.01.2024

The IT/OS requirements for a typical e-commerce site may vary depending on the size, and the nature of e-commerce. So, it is always recommended to assess specific needs and invest in suitable IT/OS tools that align with business goals and operational requirements.

For a typical e-commerce site common IT/OS tools used are as follows:-

(i) Computer : A reliable and functioning desktop computer or laptop is a fundamental requirement for Managing various aspects of an e-commerce Business. This requirement handles product listings, process orders, manage inventory, communicate with customers and suppliers, other essential tasks.

(ii) High Speed Internet Connection : enables a stable and high speed internet connection is crucial for seamless online operation.

It enables to access and update our e-commerce platform, communicate with customer and supplier, conduct research and handle online Transaction securely.

(iii) Server Side or Hosting provider - Other.

Salvage e-commerce business, an e-commerce sites need to invest in server infrastructure to utilize the services of a hosting provider that assures that the website is available to the customer.

with fast loading times and can handle heavy traffic during peak periods.

Scalable term loss less and increasing strength.

Point of sale system POS system

It is computer

When a commerce site intent to sell their product through various physical retail stores. or at home.

A pos system becomes essential. It typically includes hardware such as a barcode scanner, cash register, receipt printer, and card payment terminal to process in-store transactions. This structure is the backbone of the e-commerce business.

POS Business

Servlets:

It's a small Java program that runs within a web server and serves the clients request based on the name given to servlets.

Can execute and respond to requests from multiple browsers working on a client server protocol but HTTP is fundamentally used.

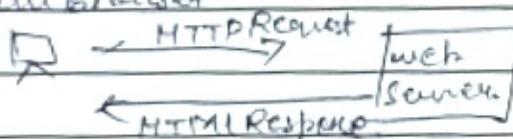
The servlet is a server side script technology which can

process client requests and give back the response.

A web application will be made up of one or more servlets.

Servlets run inside the webserver and process the request and send the response.

Client Browser:

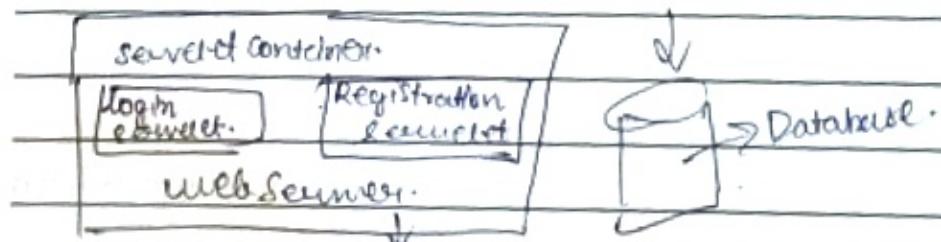


Assume a user is trying to login to cognizant portal. The web application has two servlets.

Login servlet - for processing user login requests.

Registration servlet for user to register in the web application.

Login Request goes to the web server and forwarded to the server.



HTTP Client and HTTP Response request fig.

begin session queries the database, validates the user credential.

A servlet container is a container for servlets which is responsible for managing servlets.

The container finds, initialize and execute servlets to serve client requests.

When a request is received, the container decides what servlet to call based on a configuration file.

Servlet container comes with installed with web servers.
e.g - Tomcat, Glassfish, JBoss A configuration file is XML.

Servlet mapping: is done by XML
Older Method is server side Scripting.

Common Gateway Interface (CGI) was the most commonly used for server side scripting before the evolution of java servlet technology. With Traditional CGI a process is started for each HTTP request eating up more of the CPU cycles thus degrading the performance of the system.

Advantages of servlet over CGI

A servlet does not run in a separate process.

(i) This removes the overhead of creating a new process like CGI for each request.

(ii) A servlet stays in memory between requests. A CGI program needs to be loaded and started for each CGI request. This may servlet executes faster than CGI.

(iii) There is only a single instance of servlet to all the HTTP requests concurrently. This saves memory and allows a servlet to easily manage shared data or the concurrent shared memory.

is allocated for each CGT/MTP process request.

Point CGT based Y1 banner replaced ~~stop~~ perh.

→

2 Feb 2024

E-commerce

Mobile Devices: At the present time, mobile devices (Smartphones, Tablets, Smartwatches) play a very important role in the ecommerce business. for managing several tasks. such as managing inventory, advertising online products, accessing real-time sales data, tracking shipments, communicating with helpline workers etc.

Thus it enables flexibility and convenience in running online businesses.

Packaging and shipping equipments: These equipments, help in packaging the sales products. for easily shipping. certain packaging materials such as: boxes, envelopes, packing tapes, labels, weighing machines,

Security Devices: To protect ecommerce business from theft and unauthorised access. is crucial for and compulsory these days. Monitoring tools like security cameras, alarms and access control systems can help to enhance the security of physical premises, enhances the storage structuring of ecommerce architecture.

Backup system: It is important to have a backup strategy to safeguard e-commerce data and prevent potential losses. In the event of hardware failures or data breaches. For a proper backup external hard drives, cloud storage services or network attached storage (NAS) devices can be used to regularly backup the critical business information.

Barcode scanners and label printers: Barcode scanners are used to quickly and accurately scan product barcodes during inventory management and order processing. They automate data entry and reduce manual errors, improving efficiency and accuracy.

Label printers are used to create and print shipping labels, product labels and other types of related labels required for e-commerce operations.

They streamline the packaging and shipping process.

Camera and photography equipment
High resolution cameras are necessary for any e-commerce business for taking high quality product images used in e-commerce businesses.

They mainly includes cameras, tripods, lighting equipment, specialised software to capture product and product photos that attract customers and provides an accurate representation.

of the product items for sale.

S/w Tools for e-commerce :

There are several S/w tools and platforms that are essential for running a successful E-commerce business. These S/w tools help to manage various aspects of Online operations, streamline processes and enhance customer experience.

The specific S/w requirements may vary depending upon the size, nature and goals of the e-commerce business.

(iii) Some important S/w Tools for a typical E-commerce business is as follows :-

- ① E-commerce Platforms: (sites) contd.