



REVOLUTION IN E-COMMERCE BY THE USAGE OF SOFTWARE AGENTS

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Abstract

E-Commerce is a process wherein consumers directly buy products and services from a seller in real-time, without a mediator service, using Internet. It is usually called electronic commerce (E commerce). An online shop, eshop, e-store, Internet shop, webshop, webstore, online store, or virtual store evokes the physical analogy of buying products or services at a bricks-and-mortar retailer or in a shopping center. The process is called business-to-consumer (B2C) online shopping. When a business buys from another business, it is called business-to-business (B2B) online shopping. Modern electronic commerce typically uses the World Wide Web for at least one part of the transaction's life cycle even though it may also use other technologies such as e-mail. Software agents increase the productivity and efficiency in several levels of promotional processes. The agent technology provides an interface between the previously existing brick and mortar market and consequences of virtual markets. Software agents will have dramatic development effects by quick transfer of information through new technology. As the name indicates software agents acts as interface for the processes of choosing products and merchants. Overall software agents act as a vehicle between E-Commerce and traditional business.

Keywords: Multi agent, E-Commerce, ecommerce analysis, Mobile agent, reactive agent, Software Agents.

I. INTRODCTION

In 1994, pizza hut released its first online store wherein it provided users to browse the food products and order them online. In 1996 Amazon released its first online site.[1] A good online store is easy to steer and browse for probable purchases. It has a product catalog that users can utilize to browse the search criterion (usually a type, price, material, age, etc.), details about the products, the sellers, and the service center. Online stores may also discuss selling serve as an online portal wherein users can share their comments if they have purchased the same product. If a user finds a product to purchase, clicking "buy" will add the article to the shopping cart. The shopping cart collects all articles to be purchased. Therefore, implementing usability testing is highly essential for an online store for the complete performance of the online store.[2] The shopping site should be adaptable to the user because it has to satisfy variety of customers. People of different states, different traditions, different age, etc have to be taken into consideration before designing an e-commerce shopping portal.

In the twenty first century, online shopping is trending the business community, especially with the lifestyles of business people who are always busy and are looking for a handy way to shop. To considering all these parameters the

latest technology has to be utilized and implemented in e-commerce applications.

Software Agents are now considered as the backbone of software society in building complex applications in both online and offline working environments. Agent Oriented Software Engineering is serving as a basis for analyzing and eliminating many software concerns. It becomes the successor of procedural engineering, object-oriented engineering and component-driven engineering. Agents are more capable than objects in many aspects. They possess the unique characteristics such as autonomous, adaptation and cooperation. These parameters used in online shopping applications can automate and increase the overall performance of shopping applications.

II. GROWTH IN E-COMMERCE IN CURRENT DECADE

In the past ten years, online marketplaces have become a very popular place for product vendors to sell, marketers to advertise, and consumers to shop. While many popular retail stores and brands have online shopping available, the growth of online marketplaces such as Amazon have changed how people consume with added layers of convenience and confidence.

India with a population of 1.3 Billion has an addressable market size of 800 Million. The E-Commerce segment has experienced hyper growth rates for the last 5 years.

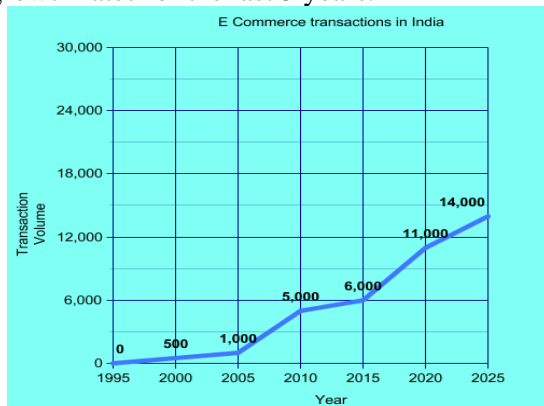


Figure 1 Hyper growth of E-Commerce in India

III. MOBILE-FRIENDLY PURCHASING

As the app marketplaces developed on Android and iOS, app-based mobile commerce had the opportunity to create much more interactivity and engagement through these platforms. Push notifications are an advantage that mobile shopping apps have in re-engaging their customers and promoting sales. Desktop

eCommerce platforms don't have this luxury outside of email newsletters.

1) Analytics

App Analytics helps to continuously improve the application and its features by studying usage patterns of users. It's an efficient tool to determine the weightage of the features and the pain points of the users. The following are app analytics metrics that could help device customer engagement strategies.

- i) User Behaviour Pattern
- ii) Pain Points Analysis
- iii) Most Used Features
- iv) App Navigation Pattern

2) Call Centre Feedback

Customers usually contact the call centres to troubleshoot, report a bug and also to provide their valuable feedbacks. At times, resolving a customer's issue can result in bug fixes, feature improvements and feature additions. The only thing that should be taken care is that those feedback are properly categorized and channelized. Customers feel more engaged when their feedback is valued and their issues resolved.

3) Social Media Monitoring

Social media is a vast and versatile medium to connect with the customers. It's possible to learn their preference and feedback by closely monitoring Hash Tags and Mentions in social media. Integrating the application with social networking also brings more traction to the application among the millennials and maximizes customer engagement.

4) App Store Reviews Monitoring

App stores are the bridge that connects the app publisher and the customers who download them. Maintaining a better app store ratings is highly critical as it influences the user's decision in downloading the app. Users either report bugs or request for a feature addition through their reviews. Closely following the app reviews helps you provide them with a better mobile banking experience.

5) Crash Logs Monitoring

Though maximum QA is done before the release of the app, it's almost impossible to cover all the test cases. There are chances that an app could crash in certain scenarios which are not tested. Now we have App Store crash logs to the rescue. Crash logs are generated when an app crashes. They contain technical information on the cause of the crash and are sent to app stores automatically. By closely monitoring the crash

logs, the app can be continuously improved by providing updates to it.

IV TRUST AND E-COMMERCE

E-commerce is the utilisation of electronic means in making business transactions, the Internet is what has given e-commerce a greater outreach by providing a faster transmission media. The cyber world of e-commerce, there are always concerns. The solution for meeting the goal status less concerns includes two essential components:

- Digital certificates for Web servers, to provide authentication, privacy and data integrity through encryption
- A secure online payment management system, to allow e-commerce Web sites to securely and automatically accept, process, and manage payments online.

V ROLE OF SOFTWARE AGENTS IN E-COMMERCE

Software agent technology plays a key role in e-commerce domain. Agents are nowadays used to support a pervasive technology for different partners in e-business domain in which several virtual business modules will be included and facilitated. Agent technology is utilized to automate these modules, as well as to enhance e-market spaces where sellers, vendors, and retailers provide a virtual shop for clients and buyers to acquire items online through delegating requirements to software agents. This paper proposes a new framework for the use of software agent technology. The framework allows multiple sellers to be registered, whereas buyers satisfy their requirements by using a mobile purchasing agent, which translates their requirements to the e-market place. In addition, the framework customized to satisfy e-business transactions for buyers and sellers.

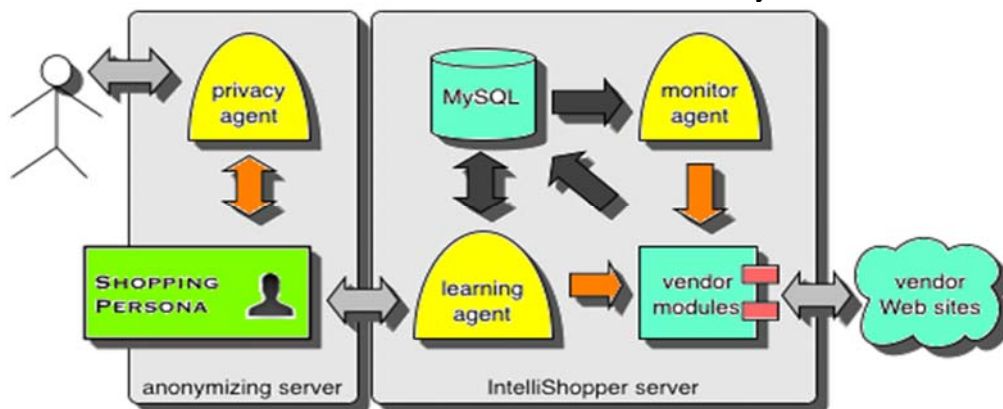


Figure 2 Intelligent Software agents used in E-Commerce

VI. CONCLUSION

Associating users with software agents aims at shifting the role of users from carrying out operations by themselves to supervising and coordinating agents that will perform these operations on their behalf. The development in the field of multi agent systems have been applied to E-Commerce as well. Agent properties like coordination, planning, learning and autonomy are very suited to online shopping applications. The applications of these properties of agents increase the quality and throughput of online shopping applications. In future software agent would be responsible for the complete automation of these shopping applications.

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