

# The Design and Implementation of B2C Web site- Online Mobile Phone Shop

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## **Abstract**

*With the development of internet technology, network plays a vital role in people's daily life. In near future, People's life and work will be highly dependent on information technology. E-commerce is now getting closer to people's life on day-to-day basis as the growth of information technology. Going through internet history and its present growth trends, we can definitely believe information technology dramatically changed our life and the way of working. This essay based on e-commerce definition, technique framework, process flow and structure, will explore a website sample ranging from database design and problems encountered in implementation. This sample website implemented with ASP technology, is a dynamic web application based on a well-designed database. Its main feature, shopping cart, enables every customer can easily shopping online at home.*

**Keywords:** *B2C website Internet Database Mobile*

## **1. Introduction**

Any new things are representing a trend, and those trends that comply with the human progress will be acknowledged, among which Electronic Commerce(EC) have presented people a brand-new world by introducing a new way of communication and changing human society in term of business competition, government administration, public institution, education and entertainment. Because of the emergence of EC, the traditional business model and management concept will change greatly. By creating enormous benefits and opportunities, it will combine the space time, and virtual dimension of market together to make logistics, cash flow, information flow into a loop which is open and a virtuous cycle, thus enabling businessmen leverage the market as a link to play the best role in it and gain the greatest benefits from it. The development of EC will not only promote the development of Internet effectively, but also make far-reaching influence on the progress of the society and economy. And moreover, EC will bring us more opportunities with it own development.

Nowadays, mobile phone is the most convenient tool in our lives. Because of the functions of mobile are becoming more and more powerful and the new phones are also being constantly updated, phone holders grow rapidly every year. Apparently, mobile phones have become one of the necessities of our lives.

## 2. Electronic Commerce Concept and Architecture

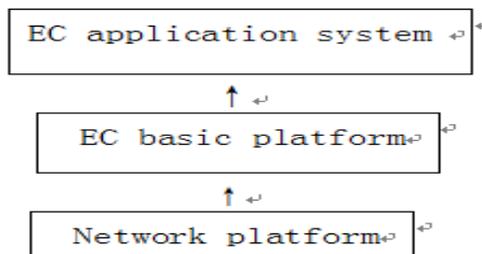
### 2.1. The Definition of Electronic Commerce

The complete concept of Electronic Commerce first appeared in 1996. By the end of 1980s, the implementation of EDI (Electronic Data Interchange) had been popular in the developed countries, and triggered global boom of “paperless trade”. 95% of the 1000 biggest enterprises around the world had been utilizing EDI. At the same time, the utilization of EDI promotes the application of all kinds of information technology which is related to the process of business to lots of areas of economy, such as: trading, manufacturing, infrastructure building and service provision. EDI developed itself from the application of a single technique to the combination and integration of related technologies, electronizing the whole process of business operation, and electronic commerce give birth eventually.

Although Electronic Commerce can be defined from different dimensions, the basic of it remains the same, that is, electronic commerce is a kind of business behavior, and it has the vital factors which meet the needs of business activities Business will be the main theme of electronic commerce forever. The only change of the process of business activities is the way of transaction, from traditional one to the web enabled.

### 2.2. The Framework of Electronic Commerce

Practically, because of the concept of electronic commerce is very broad, the framework of it has to be defined by specific application.



**Figure 1. EC Framework**

Figure 1. The bottom layer is network platform, which is the carrier of information transportation to network. The middle layer is the basic platform of the EC. The top layer provides various application systems. Additionally, the middle layer supports the top layer.

### 2.3. The Definition of EC Process

The process of EC covers all procedures of a business, ranging from users searching products, pre sales and order placement to post-sale service.



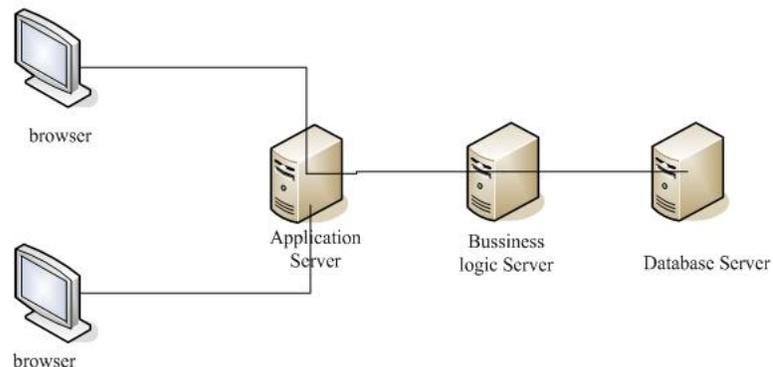
**Figure 2. EC process**

Figure 2. The application of EC is a combination of information flow, business flow, cash flow and logistics, among which Information flow is the key, hence it support the whole EC process, logistics and cash flow to guarantee the EC process integration, and business flow shows the transitions of ownership of commodities.

### 3. B/S model

#### 3.1. Introduction to B/S Model

B/S model is browser and server model, which comes from the reform and improvement of C/S model. Implemented by this model , Web browser, or WWW browser normally represent user interface(UI) , minimal business logic coding implemented on client and core logic will be on the server side. And thus form three layer architecture including front-end Web Browser and middle ware application and back-end database. So the three layers B/S model minimizes the load of the clients' ends, reducing the cost and workload of the system maintenance and upgrading, and the total cost of users'. The B/S model ensures that different people approach the same database from world wide to network. And it protects the database and manages the access to the database effectively. And the database server is safe.



**Figure 3. B/S Model**

#### 3.2. The Reasons to Chose B/S model

First of all, B/S model reduces the workload of maintenance. B/S model just needs the browser; it does not install any client applications at all. Updating is the work done just on the server side. Users can get the latest version of the service by refreshing their browsers.

Second of all, B/S model reduces overall cost. In C/S model, clients sent the requests which are received by the database server, it sends back the data that clients ask for, and the client application will conduct the calculation needed after it receives the data from the server.

In B/S model, the browser send the requests which are received by the application server, and it will send requests for some specific data to the data server, and the application server will do the calculation after it received the data from data server, and the browser will receive the results according to the users' requests after the application server finishes its work.

The mainly difference of these two models is that calculation is conducted differently. Clients' ends do the calculation in C/S model in the contrast with the browser does not in B/S model, which just sends requests to the application server and receives the result from the application server. So, clients' ends do not need high configuration computer working with the /S model.

Because of these advantages, the B/S model is an appropriate alternative.

#### 4. Website Map

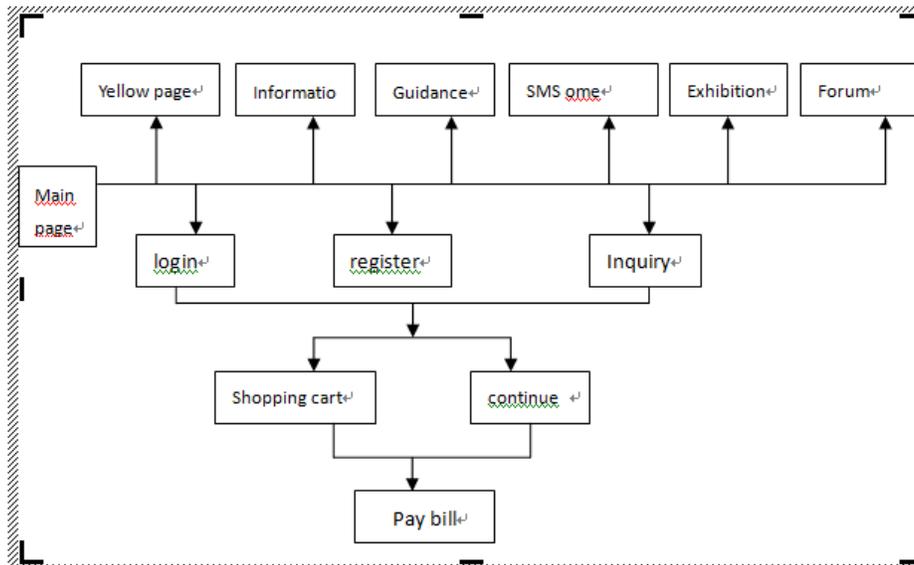


Figure 4. Website Map

#### 4.1. Main Page



Figure 5. Main Page

## 4.2. Register Page

Your information:

name	jack
cellphone number	8613901234567
address	chaoyang
E_mail	jack@126.com
password	*****
password confirm	*****

Figure 6. Register Page

## 4.3. Shopping Cart Page

Products you have choosen:

number	type	company	prize	summary
1	IPhone4	Apple	\$340	\$340
summary			\$340	\$340

Figure 7. Shopping Cart Page

## 4.4. Order Page

Products you have ordered:

number	type	company	prize	summary
1	IPhone4	Apple	\$340	\$340
summary			\$340	\$340

Figure 8. Order Page

## 5. Database Design

### 5.1. Introduction to the 3 norm forms

These 3 norm forms are the rules to design database. The database is concise and well-designed, if it satisfies the requirements of each norm form. Moreover, the anomalies of insert, delete and update would be eliminated. On the contrary, the design of database would be messed up, it would make programmers encounter troubles, and bring a lot of redundant information.

**5.1.1. First NF (first norm form):** Remove repeating or multi-valued fields to a second table. Repeating or multi-valued fields are fields that store the same types of information.

**5.1.2. Second NF (second norm form):** Remove fields that are not dependent on the whole primary key. In some tables, the primary key is composed of multiple fields. This rule requires that any fields that are not dependent on the entire primary key should be moved to a table where they are.

**5.1.3. Third NF(third norm form):** Remove fields that depend on other, non-key fields. If a field doesn't depend on the primary key in the table, but instead can be tied to another field in the table that isn't the primary key, move it out of the table. For example, A transitive dependency exists when a nonprime attribute determines another nonprime attribute. That means that if a relation exists like "A->B->C", then we say C has a transitive dependency on A. So, if a relation satisfied the requirements of the 3NF, the dependency of

Prime-> nonprime X -> nonprime Y

Would surely not exist. The relation eliminates the redundant data and the anomalies of insert, delete and update.

## 5.2. Normalization

The following table is based on the attributes of mobile.

shouji1 table :

nichen g	user_na me	password	di zhi	tel	e_m ail	shuoji_na me
xingh ao	price	jiangxiaosh ang	ph oto	shuli ang	o_id	date

Because of the table which is representing a relation does not satisfy the requirements of first NF, a lot of problems arise with the above table, such as redundant data which lead to the different length of records, and anomalies of insert, delete and update, and errors of pages as well.

The problems can be solved by splitting one table into four tables, and these four tables satisfy the requirements of the 3NF. These four tables are:

- user (nicheng、username、password、dizhi、tel、e\_mail)
- shouji1 (shouji\_name、xinghao、price、jianxiaoshang、photo、shuliang)
- order (id、user\_name、date)
- oder\_detail (o\_id、shouji\_name、shuliang)

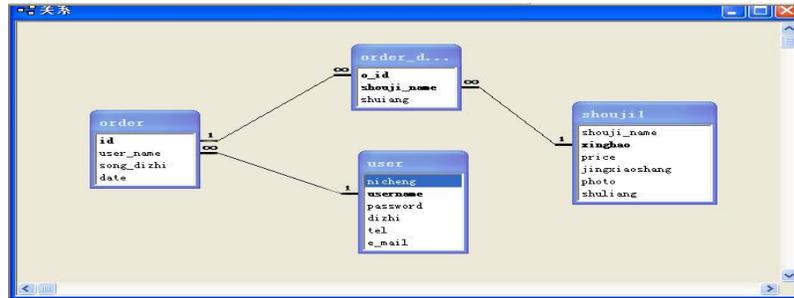


Figure 9. database structure

After the normalization is done, the database has been well designed. And this paves the way for ASP programming and other parts of web designing.

## 6. Conclusion

Electronic commerce is a new area. B2C electronic commerce is one of advanced business models and its development will go through a long process. People working in this area need the knowledge of both business management and technical supports, which is supposed to be updated constantly. Based on the lessons and experiences from the electronic business practice activity of the website building, this paper attempts to study the integration of business activities and computer network techniques.

## References

- [1] N. Aldin and F. Stahre, "Electronic, Electronic commerce, marketing channels and logistics platforms-a wholesaler perspective", *European Journal of Operational Research*, (2003).
- [2] J. Cooper, R. Poyar and B. Lenahan, "Policy-Based Fine Grained Access Control in Large Databases", (2013), pp. 1-16.
- [3] S. Al-Fedaghi, "Developing Web Applications", (2011), pp. 57-68.
- [4] S. Chaware, "Banking Security using Honeypot", (2013), pp. 31-38.
- [5] E-shopping and Off-line Delivery Systems in Korea: Real Space still Matters, *Networks and Communication Studies NETCOM*, (2006).
- [6] S. Hawk, "A Comparison of B2C E-Commerce in Developing Countries", (2004).
- [7] J. Von Neumann and O. Morgenstern, "Theory of games and Economics Behavior", Oxford University Press, (1947).
- [8] A. B. Whinston, D. O. Stahl and S. -Y. Choi, "The economics of electronic commerce", *SmartEcon.*, (2000).
- [9] D. Gupta, "Database Management System Oracle Sql and Pl/Sql", PHI Learning Pvt. Ltd., (2009).
- [10] C. J. Date, "Database Design and Relational Theory: Normal Forms and All That Jazz", O'Reilly Media, Inc., (2012).

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