Courses on Basics of E-Commerce (January 2003)

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Abstract--**I am planning organize new courses on E-Commerce and DBMS basics in our Internet Training Center as a fist courses on this topic in our Ganja Region of Azerbaijan**.

***Index Terms*--Azerbaijan, E-Commerce, E-Learning, E-Medicine, DBMS, Internet, Information Systems, Macromedia Flash MX, Server, SQL, PHP.**

I. INTRODUCTION

I am working in Ganja Education Information Center as a System Administrator of Internet Training Center. What does it mean? It means that I am managing Local Area Computer Network. I have five assistants working in our Internet Center.

We have one Web server, one office server, one dial-in server, six computers for staff and nineteen computers for our users. We configured our site and support our own web pages.

Our site is available on the URL address: http://www.gitc.aznet.org/. Of course he isn't completed yet. Here I install software and solve problems with computers, servers, routers and other network devices. And we widely work with users. Now more than 1600 users attend our Internet Training Center. We are admitting users with some computer skills and conduct training with them during a week on Internet Basics. After that they become our constant users. Since last year we began new courses for our experienced users on Adobe Photoshop, Dream Viewer, Basics of HTML. All these courses help beginners to create their own Web pages. There is not necessity to explain how Internet is important in our days. Looking on the Web pages we can see that they are very pleasant, interesting and very visual and simple for using. But all these are the result of introducing of new complicate network technologies and Web programming. Day by day Internet develops and expands. And new network technologies appear and are being improved. And these new technologies allow Internet to spread into new and new spheres of human's activities. And now in Internet we can get not only some kinds of information (text, audio, video), but also enter in conversations, conferences, forums, different kinds of Distant Learning, IP telephony, Web-TV, Internet manufacturing, Internet shopping, that called Electronic Commerce (E-Commerce) and even travel permanently working with laptops not changing and looking for new ISP.

Of course most of these facilities allowed by big Web sites called Portals, with some kinds of net robots, managing Net Data Bases. All these abilities and facilities of Internet are seen and understood by our users. And I feel that in nearest future there will appear lot of users desired to create or to learn how to create portals that allow some kind of business via Internet: shopping (E-Commerce), manufacturing, Distant Learning and other interesting facilities.

II. WHY E-COMMERCE AND HOW TO BEGIN?

E-Commerce covers the wide number of society activities: trade, banking relationships, economic legislation and developing Internet and Internet Service Providing. Of course, all these will promote developing industry, economy, legislation, computer sciences and networking, advertisement processes in the region. So the E-Commerce is very important in modern countries. But how must the E-Commerce wherever begin?

First of all in this country must be economical conditions, wide area of computer networks, Institutes with teaching of computer sciences or at least the scholars of Universities must intensively develop some Internet technologies (for instance E-Commerce, Distant Learning or other kind of Internet Information Systems are one of these technologies).

Azerbaijan is an independent country oriented to developing of democracy, free market economy. Now in all offices of Azerbaijan computers are widely used and computer networks are connected to Internet. And there is lot of Internet Service Providers, computer schools for beginners, Internet cafes. In some Baku Universities there is teaching of the programming languages and computer sciences. But there is not in Ganja (the center of west region of Azerbaijan)

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There are several technical Universities in Ganja where are teaching of mathematics, physics, mechanics and other technical subjects, but not computer sciences. Now it is time to begin these activities in this Region of Azerbaijan.

III. Infrastructure of E-Commerce

I want to organize this kind of process in Ganja. But which courses should I begin for this purpose. For answering to this question let's look in Internet processes during the E-Commerce.

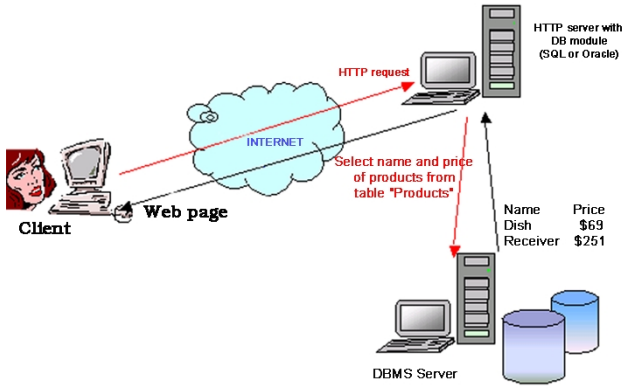
The scenario must be approximately by this way: the Internet Service Provider makes consent with firms-vendors which wish to offer their products and services via Internet. For the beginning ISP must introduce these vendors and their products on special web pages. In these web pages should not be a tremendous list of products that are very inconvenient for surfing consumers. The list of products must be completed as tables with names of vendors, address, prices and etc. All these tables of data will compile the Data Base, those will be stored in special servers. On one of these servers must be installed the software for managing those Data Bases. Both the Data Bases with managing software called Data Base Managing Systems - DBMS.[1].

Now mainly two kinds of DBMS are used: Oracle and MySQL. So we can say that ISP must install and run DBMS on his servers after making consent with vendors. But after that the user made decision to buy something from vendor in Internet and now he wants to made payment for his purchase. How can users pay via Internet? Of course by using a credit card, bills, e-mail that are supported via Internet. Consequently, ISP must make consent and with some districts of World Banks that supply account control via Internet.

The user surfing Internet with his browser and making shopping through this one, can't refer straightly neither to vendors Data Bases nor to Banks. So ISP must create Web site that will supply users with all these tools for searching in vendors Data Bases and making some Bank operations in user's bank account. That kind of Web sites are called Portals. ISP must create and support this Portal in another server-HTTP Server. Thus we can make conclusion that the ISP must organize E-Commerce with three tier architecture. This tree-tiers architecture can be shown in this figure (Figure 1).

We can see that HTTP server generates Web page for all requests of clients. These web pages are formed in accordance to information derived from DBMS. HTTP server can form his request to DBMS due to DB module of HTTP server. DB module can be either Oracle, or MySQL in dependence of which DBMS are used. In HTTP servers widely used PhP, Visual Basic, C^{++} modules that call the DB modules (MySQL, Oracle) for executing. HTTP server refer to PhP, CGI, C^{++}...module with the code written in these programming languages.[1]. [2]

Figure 1. Three tiers DBMS schema



IV. Main subjects for E-Commerce

So I am able to begin a organizing of teaching of main subjects necessary for E-Commerce in our Center:

1. ***Programming languages PhP, SQL***
2. ***Organizing Data Bases Managing Systems MySQL or Oracle***
3. ***Installing HTTP servers with Data Bases modules***
4. ***Creating Portal for E-Commerce on HTTP server***

Those are technical components necessary for E-Commerce. But for E-Commerce we must organize the ***payment solutions, dispute resolution and shipping*** processes in Internet.

In Azerbaijan E-Commerce is not developed. So it is very difficult to understand at once all juridical, economical and technical aspects and research these issues in Azerbaijan.

V. Other concepts of E-Commerce

The payment solution concerns banking systems. I must learn which of payments are possible in Internet and which credit cards and under which terms they are used in Internet, learn the mechanism of secure linking between e-commerce and Bank's sites and which agreement must be between vendors and clients, vendors and Internet Service Providers (ISP), Banks and ISP.

It is clear that if in E-Commerce participate so much sides, so the conflicts between them are inevitable. The conflicts will be accompanied by disputes between vendors, clients, Banks and Internet Service Providers. And these disputes must be solved.

The dispute resolution concerns the legislation of the country. During a research I must learn a dispute resolution processes too (which court decides, which law applies?).

In Azerbaijan of course this issue has its own specifics, because our legislation is different than European.

For me it is very interesting how in the Europe countries are solved ***product shipping and delivery*** problems too?

But these are very important parts of E-Commerce. On the basis of these concepts HTTP server generates pages in fly in response to client's queries.

These questions I am planning research in the frame of ***International Conferences on Advances in infrastructure for electronic business, education, science, medicine, and mobile technologies on the Internet.***

All these researches I think will contribute fist of all my understanding and outlining the most important concepts of E-Commerce in terms of interaction between ISP-s, Bank systems and Post offices (that provides shipping services).

VI. Distant Learning in our Region

But E-Commerce courses are not only things that we are planning to implement in our Center. From my side I want to add that our Center is involved in another Internet program. This program was voluntarily initiated by our Internet Center employees. The idea is that our Center should activate the scholar in our city by involving them into creating their own Distant Learning applications in different topics via Internet.

In this year four our employees participated in Network Workshop in Russia, initiated by Central East Europe Network Association, Tver State University (Russia) and Soros Foundation - Tver.

The main topic of this workshop was creating "Distant Learning" applications. Upon a finishing these courses our employees were awarded with software "E-Learning Studio", "E-Learning Server". But for E-Learning Server must be installed in our site and we have to supply courses for these scholars in Distant Learning in our Center.

What I want to say talking about Distant Learning? If we will look in details of E-Learning Server so we can see that it uses almost the same mechanism of SQL DBMS, queries, ASP files. And in these Distant Learning sites should be solved the same problems with banks (for paying tuition fees via Internet) and with post offices (for sipping of certificate of subscribers upon completion some distant course).

VII. Conclusion

And some words about Keynote speech of Lisa Nelson "Advances in e-Medicine". I think that this is very important field of Internet Information Systems. It would be very interesting for me to listen lecture about e-Medicine, to find out which new technologies are used now, for example technologies like Macromedia Flash Communication Server MX, that allow to quickly build multi user communication applications (chat and video support for users with a Webcams) between doctor and patient.[3]

From this perspective I think that researches on advances in infrastructure of E-Commerce, Distant Learning, Library, e-Medicine Information System would be very useful for future activities in our Internet Training Center.

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