



24th DAAAM International Symposium on Intelligent Manufacturing and Automation, 2013

## Using Internet as a Commercial Tool: a Case Study of E-Commerce in Resita

Gabriel Dinu\*, Loredana Dinu

*"Eftimie Murgu" University of Resita, Traian Vuia, No. 1-4, 320085, Romania*

---

### Abstract

Selling products and services online not only adds another revenue stream to your business online, it can help to build a series of relationships with your target audience by making the passive visitors into active consumers. To effectively manage the sale, we must consider carefully at the shopping cart system that we use, but we must take into consideration other aspects related to trade, such as safety.

The purpose of this research is to highlight the extent to which the people who live in Resita are familiar with online shopping services and how they relate to online shopping. The theoretical aspects were completed by a research project aimed to highlight the extent to which people from Resita are familiar with online shopping services.

© 2014 The Authors. Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Selection and peer-review under responsibility of DAAAM International Vienna

*Keywords:* Internet; web; email; e-commerce; site security

---

### 1. Introduction

The access to information and the development of new technologies have now reached an unprecedented level in history, where the ability of business models to reach easily at the potential buyers like never before. But, grudgingly, the Internet is not often taken into account and it is not used to its true value. If not long before advertising was seen as a factor that influences negatively the individual privacy, bombarding him with different messages, online advertising can be much more subtle and practiced as permission marketing, having a higher degree of penetration than traditional advertising media.[1,2]

The expansion of the Internet, and also its increase among users, whether individuals or companies, led to the appearance of applications that were written specifically for handling information provided by this large computer network.

---

\*Corresponding author. Tel.: +40-723-142-024.

E-mail address: [gabi\\_dinuus@yahoo.com](mailto:gabi_dinuus@yahoo.com)

People think that in our lives have already been many changes. Traditionally, the Internet had four services, namely:

- World wide web - the most used Internet service, through which users have access to an extensive array of information in all fields, with a navigation program called browser. The information is stored in connected documents.
- electronic mail (e-mail) – is the possibility that allows to send and receive messages from any user of the Internet
- e-commerce (GMP News) - is a service through which you can buy or sell online
- FTP (chat) - allows real-time communication via online communication channels, it offers the possibility to transfer files to/from a computer in the network.

## 2. Theoretical considerations

Marketing activity through the Internet becomes a routine process, contrary to implement the traditional methods of marketing.

The Internet allows a range of facilities dedicated for the user of the network in searching for information, sending mails or transferring files.

Searching for information via Internet allows the communication between producer and consumer, controlling how information is received.

The web

The Web (World Wide Web or WWW - world spider) is the most popular service offered by the Internet, being the instrument that revolutionized the Internet access. The web is more than just a computer network based on Internet technology; it allows a computer user to access information located on another computer in the network, based on client/service technology.

Appeared in 1989 at CERN, from the need to allow scientist to collaborate using collections of drawings, reports, plans, photographs and other documents in a continuously changing, the web has made the Internet an accessibility for all those who are connected.

The advantages of web presence, as a site more or less complex, appear especially for those organizations that have a well defined purpose, and the extent to which this is achieved is easily measured by recording the number of users.[3]

The E-mail

The E-mail is the most popular application in the context of the Internet; the e-mail marketing is recognized as the most productive mean of advertising on the web. The confidentiality character of the communication with the consumer allows the organization to send messages to consumers whose content is only known to the consumer and the organization. The ability to send very specific the messages to the organization, the identification existing in the database of the company offers the organization the opportunity to guide direct e-mails, both geographic and psychographic. The increased creative capacity of the direct communication with the consumer, allows combining elements of text, audio and video in an electronic format more attractive than the paper format. Quasi-total control over direct mail campaign allows the organization to achieve these campaigns, under the condition of exercising control over all the elements.

The FTP (chat)

This Internet application is known as FTP (File Transfer Protocol). The FTP service was one of the first services developed for the Internet. Through it, we can transfer files from one computer to another computer, which is at distance from each other. The condition is that the two computers must be connected to the Internet.

This service allows the user to connect to a computer on the Internet using an FTP client on his local machine, to lampoon directories and programs that are in a public area in the remote computer and get a transfer in one direction or another, of one or more files using an FTP server located on a remote machine.

The E-commerce

Traditionally e-commerce means the use in network with an added-value of some applications such as electronic transfer of documents, of fax communication, bar codes, file transfer and electronic mail. The extraordinary

development of the interconnectivity of the computer on Internet, in all segments of society, has led to a growing trend of the companies to use these networks in the area of a new type of commerce, e-commerce on the Internet that should call-in addition to the old turn-mentioned services-new ones. It is, for example, about the ability to perform network shopping by referring to the electronic catalogs and pay via credit card or some electronic purses.

### 2.1. E-commerce

In the last decade, the Internet has evolved into a formidable tool, having a major impact regarding all the aspects of life. Every half year occur changes so important that it is impossible to predict where it will be in the next 10 years. Currently, we are all involved in a revolution that takes place in trade and telecommunications. The large companies of the century will have the origins in this decade.[4]

It should be taken into consideration the ways to help the consumers before, during and after a purchase. This would ensure that the products and services of the company are sold. This topic is discussed in detail in the next chapter.

The e-commerce sites that work well on the Internet fall into two distinct and opposite categories. One category includes companies like Amazon, who succeed through diversification and expansion into other product categories with a big market. The other category includes companies which achieves their goals by narrowing the online niche marketing.[5]

#### Order Processing

Your own site allows adding HTML forms. They are used for visual layout and assembly issues of an order form, but it do not determine the form to work. In other words, HTML allows you to design a box for entering credit card details, but it can not actually process those details. For this you need to install what is commonly called the “shopping cart system”. Through this system, control information is calculated and passed between the server and the client web browser.

There are three main ways to add shopping cart system on your site. Buy the program, use a specific service or install it via an ISP. Many companies decide that the last option is the easiest. In most cases, shopping cart software is already installed on the ISP server. They also tend to offer the most competitive prices. The other two options (purchasing the program an using a shopping cart service) are analyzed in detail below.

#### Becoming an online dealer

The status of an online dealer must be acquired. Credit card companies such as Visa MasterCard, Maestro, Discover or American Express requires the condition to perform certain operations. These operations include the acceptance and processing of orders paid by credit cards. Most online purchasers products expect to purchase using a credit card transaction. Therefore, trader status is absolutely vital ro e-commerce websites. To achieve the status of trader you have several options:

- Your company credit card. Contact the company that issued your credit cards (either your personal cards, or the business cards)
- Your bank. The trader status can normally be obtained through your bank. Supposing you set up an online business from scratch. Obtaining merchant status will probably involve your business plan approved by a specialist in finance.
- Your Internet service provider. Internet service provider often has partnered with commercial account holders. For this reason, it can sometimes give you a better price.
- Your current account holder. If your company already operates in the real world, it is generally reasonable to call the same owners of commercial accounts.

When you choose your account, you should know that prices vary considerable. If you are still unsure, contact other e-commerce sites and you should know how to obtain merchant status.

#### Issues of trust and confidence

If you take details about the customer on your site or you process online orders you will need to use a system of “secure server”. Among other things, it allows encoding of credit cards placed in an order form. Encoding is performed before transmitting data from the client browser to the server. You do not have to own a secure server to take orders online. However, many users will refuse to buy products through sites if they don’t have information

about e-commerce applications.[6]

The main form is secure server SSL (Secure Socket Layer), first introduced by Netspace in 1995. SSL is now recognized as the international standard for secure e-commerce activity. The encoding processes used by SSL are considered virtually impenetrable. Moreover, online active shoppers have come to recognize the closed lock symbol or the key without cracks (whole). This symbol is the page of “verification” and means that a site uses SSL. A secure server by reduces the methods of precautions necessary for the user to those used in providing credit card details over the phone. The fact that no one has access to the customer’s credit card information is a powerful argument. It thus suggests that credit card transactions based on SSL are basically safer than the real world.

To implement on our site secure server technology we need a web server certificate from Verisign ([www.verisign.com](http://www.verisign.com)). It proves that you are a legally company established and credible. If you are a legitimate company, the certificate is not very difficult to obtain. However, instead of requiring a personal certificate from Verisign, you could probably use your ISP certificate, or the one that hosts your website. Hosting services could solve the problem for you, often charge.

However, the mere existence of an SSL server is not enough. Also, you have to make sure that users feel safe. Here are still some steps that you can take to remove the fear of security of e-commerce customers:

- Provides information about SSL

Many users know the symbol of the closed lock or the whole key and they know their significance. Many are those that do not know. Therefore, you must specify not only to use a secure server, but also what it means. It shows how to secure credit card transaction. Also, you can use the links to detailed information about SSL and about the significance of this concept for them.

- It offers tips about the security on Internet

The Internet users prefer websites that address the security issues direct to those which ignore their problems in this regard. Offering security tips you can take these concerns into context. Tell the users that they can place an order on a site that uses SSL technology in very safe conditions, safer than if they would pay a meal at the restaurant.

- Includes a product return policy

Customers will be more confident in your site if they see that you have a product return policy.

- Play virtual the real experience

Internet is still a relatively new medium. Here is one of the reasons of skepticism regarding the security of e-commerce. There are e-commerce sites that introduce a touch of familiarity and contain similarities to real-world shopping experience. They can often remove security fears.

”On the Internet, familiarity does not give rise to contempt”, says Sophie Burke from Shoeworld.co.uk. “It builds brand loyalty. By using identifiable graphic symbols, browsers are easily transported to the traditional shopping experience online”. This explains why most sites have adopted e-commerce shopping cart analogy. Thus, visitors wander among the shelves online; they choose what they want and then go to the counter to pay.

- Display a privacy policy

Display on your site a privacy policy and state that the personal details will remain safe. You will help your clients to trust your site. A common privacy policy is: “MySite.com will not sell, rent or trade personal information to a third party without your express consent. This is part of the security you provide”.

- Provides insurance

Of course it is easy to tell people how safe your site is. But all your assurances should be credible. The best way to proceeds is to enroll in one of reinsurance schemes. They are in a growing number in order to calm security fears. A good example is which? Web Trader ([www.which.net/WebTrader](http://www.which.net/WebTrader)). To become a member, an e-commerce site should confirm that its facilities to purchase are sure.

Other brand that strengthens customer’s trust include those of the project Trust Scheme ([www.truste.com](http://www.truste.com)) and Clicksure Certified Merchant ([www.clicksure.com](http://www.clicksure.com)). Contact these sites and participate in their project. Thus, you can once again assure your clients that you comply with the security standards recognized on Internet.

### 3. The research methodology

The research highlights issues regarding to use e-commerce service by the population of Resita, starting from the frequency of using it and addressing issues related to payment or security and the trust of e-commerce sites. Thus, it

is possible to break the barriers of space and could make orders worldwide.

By the type of information resulted from the research, is a quantitative research, and after the venue is a field research.[7]

In order to achieve an efficient study is needed firstly a research program, establishing the stages and the required resources in order to achieve the optimal research and obtaining the most important information necessary for the decision.

The study was conducted in two parts, a qualitative study and the stage that provides representation in the results and formulating conclusions, the quantitative study. But, as the information obtained from an unrepresentative sample can not be extrapolated to the entire population, the results are merely hypotheses to be validated, we considered appropriate to present only the quantitative survey, the results of the qualitative study will be statistically analyzed in terms of correlation and regression analysis, the normal distributions and univariate analysis.

The quantitative study covers the following stages: the constitution of the sample, the determination of the size, writing the questionnaire, the administration of the sample, processing and analyzing the obtained data, writing the synthesis report.

As a form of research we used the survey: individual structured, based on a questionnaire consisting of 13 questions, all closed. The questionnaire contains 10 questions of content and 3 of identifications the interviewed person.

The purpose of research is to study the extent to which the people, who are living in Resita, are using online trade in procurement and how they see the online shopping.

The research objectives were to highlight the types of Romanian sites for shopping, the frequency with which the people who are living in Resita runs Internet shopping, highlighting the factors which prompted the people to buy online, presenting the method of payment, of the type of products chosen from e-commerce sites, highlighting the ways in which online stores attract shoppers, suggestions for improving the visibility and establishing limits that would remove the consumer from the online environment.

The community consists of people who are living in Resita.

To fulfill the research objectives as accurately, we chose to retrieve information by an interview using a questionnaire with predetermined questions administered by the interviewer.

The sample was composed of 366 people, taking into account a probability of 97% results guarantee, given a margin of error of 3%.

The information was collected during December 2012-January 2013, being processed, analyzed and interpreted in the following period.

Corresponding to the method of harvesting information was developed a questionnaire as a tool for gathering information, consisting of 10 content questions and 3 of identification.

Taking into account that the objective of our research is to measure the familiarity degree of the people who are living in Resita with online shopping, I consider appropriate as embodiment of the research, the survey done on a representative sample of the population of Resita. The representativeness of the sample is given by the sampling method used and the sample size determines the accuracy of the results obtained from the survey.[8]

Generally, the assumptions made during the qualitative studies are validated through the quantitative studies. For this can be used the survey, that means a survey in order to know the characteristics, the opinions of a given population, interrogating a limited number of its members, that means a sample.[9]

To reduce the risk determined by the relative freedom of the investigators, in the case of respondents, sampling by quotas to poll associated with the areolas survey (geographic) that ensure the representativeness of Resita. The questionnaire was composed only from the population of Resita.

#### **4. The research results**

As previously stated, the embodiment of the qualitative research, was used the survey, conducted for the population of the county Caras-Severin. The questionnaire was applied during December 2012 - January 2013 and includes questions about occupation, age, sex, buying from Romanian websites, the frequency of purchasing online, the reason for that they chose the online environment, the type of goods chosen from online stores, payment method, the element that influenced the decision to purchase, instruments for attracting the consumer in the online environment, forms of promotion, barriers to online consumer, other services of the Internet that are used.

The responses to the questionnaire were entered into SPSS and formed a database for various tests.[10]

In this type of analysis we wanted to analyze some questions from the questionnaire, and more specifically, questions about age and doing shopping on the Internet.

By using SPSS we tried to obtain information about occupation, age, sex, buying from Romanian websites, the frequency of purchasing online, the reason for that they chose the online environment, the type of goods chosen from online stores, payment method, the element that influenced the decision to purchase, instruments for attracting the consumer in the online environment, forms of promotion, barriers to online consumer, other services of the Internet that are used.

To achieve a more complex analysis, I considered useful the analysis of regression and correlation, which allowed me to study the action of buying online and the frequency of this type of acquisition.

I applied the regression analysis to assess whether the dependent variable “frequency of online shopping” can be explained by the independent variable “making shopping in online environment” and also, in what manner, the dependent variable “the frequency of online shopping” can be explained by the independent variable “occupation”.

The SPSS program estimates the parameters of the chosen regression model (I chose the simple linear regression model).

For the analysis of the regression model I went through the following steps:

- Estimating the parameters of the regression equation (based on the method of least squares) and the interpretation of the regression depending on the sign and parameters value of the regression model
- Testing the significance of regression parameters

The parameters of the regression equation in a simple linear model,  $Y = \alpha + \beta X + \varepsilon$ , are:

$\alpha$  – The intercept ( the value of the variable Y when  $X = 0$  )

$\beta$  – Slope, called the regression coefficient

The independent variable ( X ) and the dependent variable ( Y ) are shown in the table Variables Entered.

Table 1. Variables Entered/Removed<sup>b</sup>

Model	Variables entered	Variables removed	Method
1	varsta responden tului <sup>a</sup>	.	Enter

a. All requested variables entered.

b. Dependent Variable: realizarea de cumparaturi pe net

In the equation of regression, the parameters are unknown. In practice, the parameters of a regression model are estimated based on data and at the level of a observed sample  $Y = a + bX$ , where:

a and b are estimates of the parameters  $\alpha$  and  $\beta$ .

Table 2. Coefficients<sup>a</sup>

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant) varsta respondentului	2.652	.367	.308	7.221	.000
	1.205	.445		2.706	.009

a. Dependent Variable: realizarea de cumparaturi pe net

I obtained in the table Coefficients the values of the regression parameters and the values of a and b (Unstandardized Coefficients)

a (constant) = 2,629

b (age of respondent) = 1,205

The model of regression estimated is:

$$Y = 2,629 + 1,205X$$

Because I obtained a position value of the regression coefficient B, there is a direct connection between respondent's age and making online shopping.

The R value ( the value of the correlation coefficient ) indicates whether or not there is correlation between the dependent variable (Y) and the independent variable (X).The R value is equal to 0.308,so we can say that there is a close connection (but not too close) between the two variables.

Table 3. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.308 <sup>a</sup>	.095	.082	.4499

a. Predictors: (Constant), varsta respondentului

We can calculate the correlation coefficient also using the option Bivariate of the order Correlate from the menu Analyze.

Correlation table shows the values of correlation coefficients between the variables „age of respondent” and „making online shopping”. Pearson correlation coefficient (Pearson Correlation) is equal to 0.308.The coefficient is positive so, the correlation between variables is direct and close.

Table 4. Correlations

	Model	varsta respondentului	Std. Error of the Estimate
varsta respondentului	Pearson Correlation Sig. (2-tailed) N	1.000 . 72	.308** .009 72
realizarea de cumpărături pe net	Pearson Correlation Sig. (2-tailed) N	.308** .009 72	1.000 . 72

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The T test is applied to check whether there is a significant correlation between the two variables. The Sig Value corresponding of T test is equal with 0.009 so, we conclude that we have achieved significant correlation.

## 5. Conclusion

This paper presents the service with the greatest commercial potential, namely the e-commerce, also recalling the other services of the Internet.

To conceptualize the consumer competence and establish its antecedents and performance implications, we draw upon the literature on inter-organizational relationships and innovation. [11]

The main drawback is the security of e-commerce transactions. To avoid the uncertainty of transaction on the Internet provides customers with various security systems. One of them in SSL - Secure Sockets Layer, a system of trading figures and data encryption that ensure a safe and secure connection to transfer money from the buyer at the

seller.

Therefore, card payment is a matter of trust, which depends on developing and maturing online market, and the fact that there are stores that do not offer any possibility of online credit card payment points the start of a way of online payment. Moreover, neither merchants nor banks promote this mode of payment, and the perception of the buyers is that the payment by cash (on delivery) is safer. At the moment, we can say that almost 10% of the websites that are operating in Romania are intended for e-commerce activities. This report is not just about numbers and credibility, turnover and other indicators.

Furthermore, in the research, was started from the premise that in Romania commerce has grown exponentially during the crisis, from 1000 online shops to over 2000 virtual spaces on the Internet.

Information technology and the Internet have had a dramatic effect on business operations. Companies are making large investments in e-commerce applications but are hard pressed to evaluate the success of their e-commerce systems. The Internet has dramatically affected the conduct of business. Markets, industries, and businesses are being transformed. The new economy demands the exploitation of new models and paradigms. Information technology (IT) now drives businesses and markets. In the new economy, the Internet has become a powerful and ubiquitous communication mechanism to facilitate the consummation and processing of business transactions. This has led to substantial changes in traditional industries and companies. Firms are attempting to understand and measure the impact of IT so that they can make intelligent decisions regarding crucial IT investments. [12]

## References

- [1] Y. Li, A Multi-Level Model of Individual Information Privacy Beliefs, *Electronic Commerce Research and Applications*, In Press, Uncorrected Proof, Available online 22 August, 2013.
- [2] R. Trifan, *Metode tehnici si canale de marketing pe Internet*, teza de licenta, ASE, Bucuresti, 2005.
- [3] B. Onete, *Designul, estetica si promovarea paginilor web*, Bucuresti Editura ASE, 2005.
- [4] V. S. Mirescu, The premises and the evolution of electronic commerce, *Journal of Knowledge Management, Economics and Information Technology*, vol. I, Issue no.1, 2011.
- [5] A. Scupola, The premises and the evolution of electronic commerce. The impact of electronic commerce on industry structure - the case of scientific, technical and medical publishing, *Journal of Information Science*, vol. 28, no.4, 275-284, 2002.
- [6] M. C. Lee, Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit, *Electronic Commerce Research and Applications*, Volume 8, Issue 3, May-June 2009, 132-144, 2009.
- [7] I. Plaias, *Cercetari de marketing*, Cluj-Napoca, Editura Risoprint, 2008.
- [8] F. Newport, *Cât de mult contează sondajele de opinie*, București, Editura ALL, 2007.
- [9] F. Foltean, *Cercetari de marketing*, Timisoara, Editura Mirton, 2009.
- [10] E. Jaba, *Analiza statistica cu SPSS sub Windows*, Iasi, Editura Polirom, 2004.
- [11] M. A. Stanko, J. M. Bonner, Projective customer competence: Projecting future customer needs that drive innovation performance, *Industrial Marketing Management*, Volume 42, Issue 8, 1255-1265, 2013.
- [12] W.H. DeLone, E.R. McLean, *Measuring e-Commerce Success: Applying the DeLone & McLean Information Systems Success Model*, *International Journal of Electronic Commerce*, 2004.