

KEY FACTORS LEADING ROI OF E-COMMERCE WEBSITES – AN USER’S PERSPECTIVE

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ABSTRACT

Marketing ROI has been major concern of the researchers and academicians since decades. The paper explores key parameters leading ROI of online business in Indian perspective. Increasing internet penetration in India and growth of internet savvy user’s enabled e-commerce companies for substantial investment in online marketing. Some of them could succeeded to generate profit while for other it could not generate cash flow large enough also. It is difficult for the companies to justify ROI against marketing investment and to decide where to invest and where not? The study adopted user’s perspective to develop and empirically test model for factors leading marketing ROI of online business.

KEYWORDS: Design of Websites, E-commerce, Online Advertising, Marketing ROI, Search Engine

INTRODUCTION

Marketing ROI has been a major concern for academician as well as for managers as increasing cost and competition has made them thinking towards marketing performance measurement. 20 to 25% of the expenditures of many organizations are related to marketing, making it alluring factor of focus for senior marketing and board members. This makes it target interest of senior management and of board members. Earlier marketing investment was being considered as marketing spends not an investment, the reason is being there was no focus towards marketing measurement either financially or none financially. Business organizations are now trying to justify marketing spend as it “*could not deliver outcome so it should be there and we should be more accountable towards it*” quoted by a Marketing Manager of the leading telecom company operating in Asia. Business organization is made for profit and thus it should be financially accountable (Srivastav *et al.*1998; Lamberti & Noci 2010; Ambler & Roberts 2005; Ringham 2005; Berger *et al.*2006). In marketing there has been a lot of investment over years but it’s still difficult to justify it in the balance sheet of the company. ROI can be calculated in the form of percentage, ratio or as a breakeven/pay back method which are the methods for financial calculation of MROI. It is noted in the past that marketing activities has both long term as well short term gains while business organization could only calculate short term gains and not the long term gain (Seggie *et al.*2007).

The marketing function over a period of time has evolved as a critical business function to achieve organizational objective. It has been viewed as an effective tool for optimizing business and social goal. Where in an organization is able to achieve substantial gains from its operations even under challenging scenarios of competition and dynamic environmental pressures. The marketing function has often been challenged and criticized for wasteful engagement of the resources, with no effective mechanism of assessment and evaluation of efficiency in appropriate acceptable parameters through quantifiable attribution (Marek Solcansky, Iveta Simberova, 2010). The fraternity of marketers often been questioned and rightfully so about effectiveness of their decision made in context to the returns generated from them.

Today’s traditional business operating through retail chains have also started focusing on the internet marketing and are developing their own websites with the essential information provided on the websites to promote online . Internet

has become one of the most popular ways of reaching the target market and gives more freedom to interact with the brands. There are 2 billion users of the internet around the world which is 1/3 of the world population. Traditional marketing is connected with the sellers need and with the distribution system of the product or goods manufactured .While modern marketing is associated with customers/ consumers need and ensure distribution of the product and services to increase profit through satisfying and retaining the customers. E-marketing is one of the most popular terms used in modern marketing. It is defined as use of electronic media, equipment and technology to achieve marketing objective of the business. E-marketing is broader than internet marketing, technologist, researchers and academician used it interchangeably. E-marketing encompasses internet, mobile, digital media to achieve marketing objective of the business (Wilson,1999 and Chaffey,2001).The marketing definition mentioned above focuses on customers at the same time Chaffey, 2001 also identify that how internet technology supports customers to achieve the marketing objective of the business. Generally any purchasing process begins with the awareness of product and services, followed by evaluation and exploring the competitive brand before finally selecting for purchase or re-purchase decision. Consumers get influenced by the marketers in specific stages of the purchase funnel. The online purchase funnel starts with number of hits/visits or clicks through rates. It measures total number of visitor, who generated these clicks and then actual visitors who actually prefer to purchase the product. The conversion takes place and ROI goes up shortly.

LITERATURE REVIEW

This section reviews a range of past studies and explores the issues about e-Commerce websites. It could be identified that the study conducted by various researchers highlights on website performance evaluation, alignment of business goals with website, website usability and process optimization as these aspects are considered to be important element for optimizing the website by most of them. While few highlighted on ROI on online business and about other marketing component e.g. search engine, online advertising, paid search etc.

Further authors have discussed about e-commerce performance measurement .Majority (Lian Wei 2012; Tripathi et. al 2010; Tripathi et. al; 2011, Lee et. al 2005; Kahrama et al. 2012; Graja et. al 2001; Ana Carolina Rossi 2012; Datla et. al 2005; .Aleem et. al. 2007; Grewal et. al 2008) of them discussed about the technology and content of the web site, which is 23.6%. From figure.1 we can see that only 1.8% discusses about online advertising (Ana Carolina Rossi, 2012), 9.1% about search engine (Ana Carolina Rossi, 2012, Kahrama et al., 2012, Grewal et. al, 2008), 3.6 % for online marketing, 3.6% for financial calculation (Ghandour et. al, 2011, Lee et. al, 2005) and 16.4% discusses about traffic generation on website (Daniel Cunliff, 2000, Geyskens et. al, , 2002, Ron Hohavi et. al, 2003).

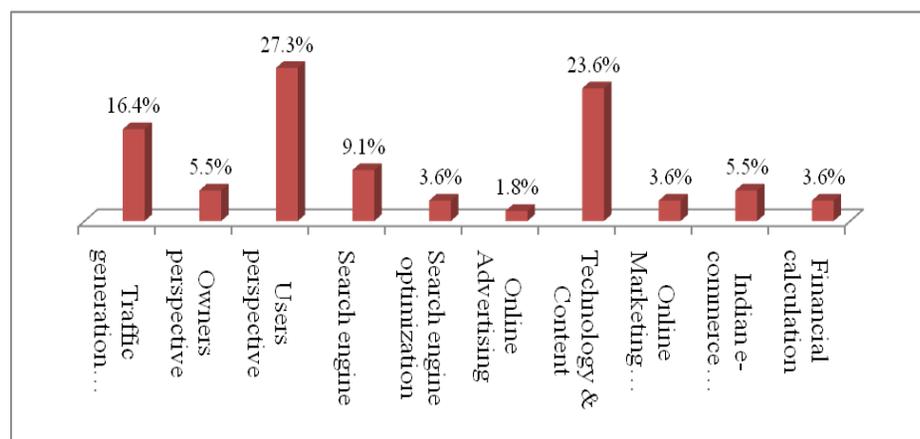


Figure 1: Highlights of Scope Area

In Figure-2 it is exhibited that 62% of the researcher discuss about website performance, 32% discuss about e-commerce performance and only 6% about online marketing ROI. It was also observed that those who discusses about website performance only considered parameters important for the website in general or for e-commerce websites. Lastly it was observed that most of the parameters from the study in subject discusses on Navigation, Content, Color, Layout of the website, Speed and Technology.

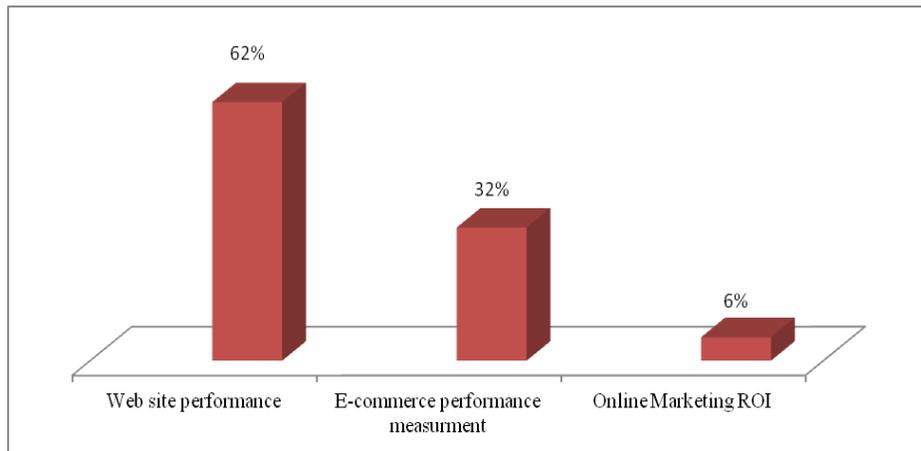


Figure 2: Business Model Discussed

In figure 4 it is represented that 43% of the web site in discussion for the performance measurement is B2C web sites, followed by B2B (29%) and C2C which is 16%.

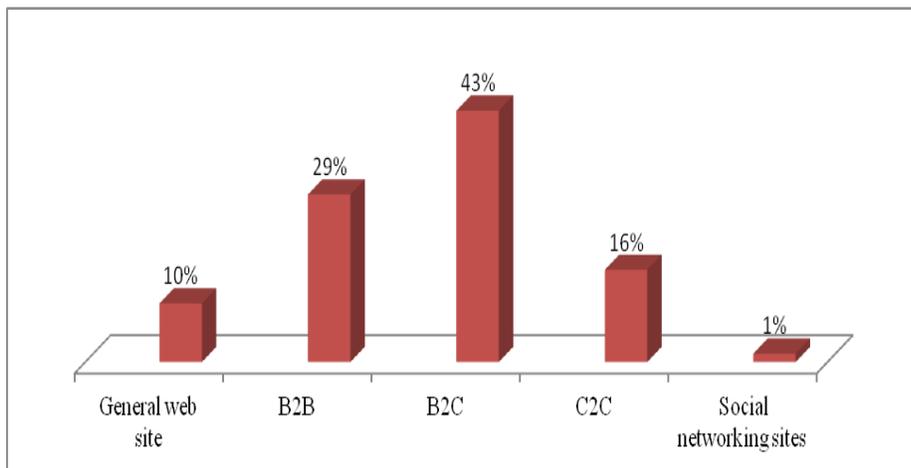


Figure 3: Business Model Discussed

The main topics discussed by researchers focused on the need for alignment of website goals with business goal, website usability/performance measurement evaluation. Theses above elements are important for optimizing a website and changing the organization to stimulate performance measurement.

Researchers only discussed about the key features of the website and did not focus on how to generate the traffic on website and what are the key marketing drivers from user’s perspective leading the ROI of online business.

The Researchers assumed that optimize website automatically means an optimal financial return. In other words researchers discussed the relationship between the performance of website and impact on financial return.

RESEARCH METHODOLOGY

The research study aims to find out key factor leading to marketing ROI of online/ e-commerce business, therefore this section discuss about the most appropriate approach to complete the proposed research and to achieve the objectives of the research. The literature review and secondary data has helped to develop the hypothesis where as the primary data was used for analysis purpose. Further the section elaborates on the method for data collection and its analysis for determining whether the critical factor are real success factor for calculating the ROI of online business or e-commerce websites.

With the objective of the research to identify the parameters leading the marketing ROI of the online business or of e-commerce websites. The main research questions for the study:

“Identifying the key parameters for increasing the ROI within online Marketing “

To answer the above mentioned question and sub research questions following factors were considered after detailed review of the literature, these factors were:

- Search engine optimization
- Product range
- Content of the website
- Navigation
- Cultural aspect
- Online advertisement
- Paid search
- Social networking sites

Both qualitative and quantitative method is used in the research process. Data has been collected through online questionnaire and personal Interview. Interview has been taken from the professionals who were experts in the field of e-commerce business. The purpose was to collect the basic information regarding the marketing activity of the e-commerce websites as well as to get an idea how does e-commerce websites work and generate profit. The collected data from the professionals helped to develop the questionnaire for the quantitative research. For the quantitative research questionnaire were prepared and online survey was made through targeted group of those users who are having experience of online transaction and of online shopping. The data was collected for content, navigation, security, awareness, price and product

Data Gathering

In order to achieve research objective both primary and secondary data has been collected to meet the research objective. Secondary data has been collected through reports, magazines, financial statements, annual report and through the e-commerce websites. Annual report of the Amazon and e-bay has been collected from the website of Securities and Exchange Commission USA (NASDAQ) and from annualreports.com. Primary data has been collected through interview and by conducting the survey. To make the questionnaire for the survey and for interview literature review was done, in which past studies relating to e-commerce performance measurement and Online marketing ROI has been reviewed to provide fundamental background for the research and for the questionnaire preparation.

Selection of the Participants

A participant has been chosen for both interview and survey. For the survey participants sample includes students from the Indian Institute of Information Technology, Allahabad, Sri Ram Murti Smarak College, Lucknow, Indian Institute of Technology, Mandi, Indian Institute of Technology, Roorkee and from SHIATS.

The assumption behind choosing the sample is the internet savvy users as younger consumer is driving more growth in online with the highest penetration of 10.5% (For age group of 17 to 35) Comscore-State of the internet with focus on India June 2011). Primary data has been collected from the flipkart courier service, Allahabad for number of delivery made by them on monthly basis at Indian institute of information Technology, Allahabad, Motilal Nehru National Institute of Technology, Allahabad and Sam Higginbottom Institute of Agriculture, Technology & Sciences.

Data Scaling

Data Reliability and Validity

For further analysis following reliability and validity test has been conducted on data.

Cronbach’s Alpha

Data has been evaluated using SPSS version 11.5 through reliability test by calculating Cronbach’s Alpha. The calculated value of Cronbach’s Alpha is 0.5663, and it comes out to be greater than 0.5 and near to 0.6 it implies that the reliability of the data collected is acceptable (Cronbach, 1951). Cronbach Alpha can take any value less than or equal to 1, including negative value, although only positive value make sense. Higher values of Alpha are more desirable

Detection of Multicollinearity

The term multicollinearity is a situation where there is an exact linear relation among two or more of the input variables. The exact relation arises by mistake or in other words we can say that variables are correlated but are not independent, Hawking 1983. Consequences of high multicollinearity are:

- Confusing and Misleading results.
- Increased standard error of estimations of the β 's (Decreased reliability).

To detect multicollinearity VIF (Variance inflation factors) for each of the variable X_i is to be calculated:

$$VIF_i = \frac{1}{1 - R_i^2}$$

Where R_i^2 is the coefficient of determination of the model that includes all predictors except the i^{th} predictor. If

$VIF_i \geq (\text{Range 5 to 10})$ then there is multicollinearity problem.

For the data into consideration the value of VIF is less than the 5, which shows that data did not have multicollinearity problem.

Durbin Watson Test

The Durbin Watson value range lies from 0-4. If the value of DW is low (less than 2) indicate the presence of positive correlation and which is very common. If the value of DW is more than 2.50 indicates negative autocorrelation and which is particularly not common.

Table: Value of Durbin Watson

Model	R	R Square	Adjusted R Square	Durbin Watson
1	.727(a)	.528	.456	1.909

For the data in consideration the value of Durbin Watson is less than 2 and the value of R is less than the value of DW which shows that data is not having auto correlation.

ANALYSIS AND FINDINGS

Analysis is done by taking correlation and regression values of the data. From the analysis it is found that, there is positive correlation between those who make purchases and those who uses search engine for product search (Table-1). There is positive correlation between search engine users and PSER. There is possibility that, the user who prefers search engine likely to prefer click on PSER (Table-2). Product comparison is also very critical and important factor which is preferred by the most of users. Users prefer to make the comparison of the product on the basis of prices, discount and features. User visits on other website frequently to make comparison of the same product. Product comparison is the component of the content and e-commerce companies should focus on content of the website (Table-3). It is assumed that by offering large number of product to their consumer will increase the ROI of their business but it is not applicable for the sample taken into consideration. The variety of product is not that much of important for the Indian consumers (Table-4). Search engine plays key role in creating awareness of product and services. Indian consumers highly prefer to search through search engine (Table-5).

Content and navigation is also important factors for the e-commerce websites. Good content and efficient navigation system motivates consumer to make purchases (Table-6). Indian consumers prefer to visit till page two on search engine page results-commerce companies should focus on search engine optimization to appear themselves till page two (Table-7).

Apart from search engine majority of Indian consumers come to know through their friends and relatives about product and services. Their purchase decision likely to influenced by them, this is how cultural and social aspects effects ROI of online business (Table-8).

One of the recent trends noticed in Indian E-tailing market is the shift of several niche merchants to mass merchants. This assumed that moving from niche to mass will increase revenue and consumer acceptance, but this seems to be myopic because players moving to mass merchant actually diminishing their chances of success. It is easy to focus and create brand pull and more differentiated positioning in the consumers mind through niche marketing.

It is recommended that e-commerce companies should focus on category-specific products such as Books, Electronic items, Apparel, Fitness and Footwear etc. Multiple product categories helps to improve customer life time value but on other hands companies dilutes the focus on each of the categories. Electronic items, Fitness, Footwear and Gifts can be clubbed in one category. Gift and Travel in second category and Books and related items in category third (Table-9).

E-commerce companies should be region specific. They should allowing them to customize their appearances in different regions, while maintaining a single tally of likes. They should design their website in such way that users automatically be directed to the page designated for their region, but they can access the versions for other regions. These features needs to be incorporated strongly because India is multicultural society and their need and preferences may differ region wise. Region specific content will engage more to the user's and will increase ROI of the online business.

Table 1: Correlations between Purchase & Search Engine Usage

		MP	SEUSAGE
MP	Pearson Correlation	1	0.213(**)
	Sig. (2-tailed)	–	.000
SEUSAGE	Pearson Correlation	.213(**)	1
	Sig. (2-tailed)	.000	–

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

Table 2: Correlations between Search Engine Usage and Paid Search Click

		S.EUSAG	P.CLICK
SEUSAGE	Pearson Correlation	1	.147(*)
	Sig. (2-tailed)	–	.014
	N	281	281
PSER	Pearson Correlation	.147(*)	1
	Sig. (2-tailed)	.014	–
	N	281	281

*** Correlation is significant at the 0.05 level (2-tailed)**

Table 3: Correlations between Make Purchases and Other Parameters

		MP	PSER	ADV	SOCIAL.N	P.COMPAR
MP	Pearson Correlation	1	.042	–.026	–.070	.601(**)
	Sig. (2-tailed)	–	.487	.662	.239	.000
ADV	Pearson Correlation	–.026	.344(**)	1	.112	.019
	Sig. (2-tailed)	.662	.000	–	.061	.753
SOCIAL.N	Pearson Correlation	–.070	.127(*)	.112	1	–.015
	Sig. (2-tailed)	.239	.033	.061	–	.801
P.COMPAR	Pearson Correlation	.601(**)	.024	.019	–.015	1
	Sig. (2-tailed)	.000	.683	.753	.801	–

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

Table 4: Correlations between Purchase and Reason for Purchase

		MP	CONVENTIT	PRICE	DISCOUNT	VP
MP	Pearson Correlation	1	.191(**)	.104	.109	–.161(**)
	Sig. (2-tailed)	.	.001	.081	.069	.007
CONVENTIT	Pearson Correlation	.191(**)	1	–.009	.024	.028
	Sig. (2-tailed)	.001	.	.882	.685	.644
PRICE	Pearson Correlation	.104***	–.009	1	.172(**)	.265(**)
	Sig. (2-tailed)	.081	.882	.	.004	.000
DISCOUNT	Pearson Correlation	.109	.024	.172(**)	1	.239(**)
	Sig. (2-tailed)	.069***	.685	.004	.	.000
VP	Pearson Correlation	–.161(**)	.028	.265(**)	.239(**)	1
	Sig. (2-tailed)	.007	.644	.000	.000	.

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

Table 5: Correlations between Search Engine Usage and Awareness through Engine

		SEUSAGE	SEAWARE
SEUSAGE	Pearson Correlation	1	.346(**)
	Sig. (2-tailed)	–	.000
SEAWARE	Pearson Correlation	.346(**)	1
	Sig. (2-tailed)	.000	–

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

Table 6: Correlations between Make Purchases, Content and Navigation

		MP	CONTENT	NAVIGAT
MP	Pearson Correlation	1	.133(*)	.112
	Sig. (2-tailed)	–	.026	.062
CONTENT	Pearson Correlation	.133(*)	1	-.413(**)
	Sig. (2-tailed)	.026	–	.000
NAVIGAT	Pearson Correlation	.112***	-.413(**)	1
	Sig. (2-tailed)	.062	.000	–

* Correlation is significant at the 0.05 level (2-tailed)

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

Table 7: Correlations between Search Engine Users and Number of Pages Visit

		SEUSAGE	SEAWARE	FIRST	SECOND	THIRD
SEUSAGE	Pearson Correlation	1	.346(**)	.375(**)	.296(**)	.021
	Sig. (2-tailed)	–	.000	.000	.000	.729
SEAWARE	Pearson Correlation	.346(**)	1	.066	.191(**)	.059
	Sig. (2-tailed)	.000	–	.273	.001	.325
FIRST	Pearson Correlation	.375(**)	.066	1	-.213(**)	-.294(**)
	Sig. (2-tailed)	.000	.273	–	.000	.000
SECOND	Pearson Correlation	.296(**)	.191(**)	-.213(**)	1	-.268(**)
	Sig. (2-tailed)	.000	.001	.000	–	.000
THIRD	Pearson Correlation	.021	.059	-.294(**)	-.268(**)	1
	Sig. (2-tailed)	.729	.325	.000	.000	–

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

Table 8: Correlations between MP, Product Description & Friends

		MP	PD	FRIENDS
MP	Pearson Correlation	1	.453(**)	.119(*)
	Sig. (2-tailed)	–	.000	.046
	N	281	281	281
PD	Pearson Correlation	.453(**)	1	.016
	Sig. (2-tailed)	.000	–	.784
	N	281	281	281
FRIENDS	Pearson Correlation	.119(*)	.016	1
	Sig. (2-tailed)	.046	.784	–

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

SCOPE FOR FUTURE IMPROVEMENT

Internet and E-commerce are still recent phenomena and therefore a large pool for research.

Obviously, the following suggestions for future research are identified:

- More investigation is required to understand cultural aspects and its impact on e-commerce business.
- Extensive model is to be proposed from owner's perspective.
- Existing model is to be investigated in Medium and Small scale industries at different interval.

REFERENCES

1. Dorian Selz, Petra Schubert. Web Assessment - A Model for the Evaluation and Assessment of successful Electronic Commerce Applications, in: Proceedings of the 31st HICSS Conference, Hawaii, ‘Internet and the Digital Economy Track’, Vol. IV, 1998, pp. 222-231.
2. Chang Liua and Kirk P. Arnett (1999) .Exploring the factors associated with Web site success in the context of electronic commerce. *Information & Management*, 38, 23–33.
3. Christian Gronroos (1990).Relationship approach to marketing in service contexts: The marketing and organizational behavior interface. *Journal of Business Research*,20, 3–11.
4. Daniel Cunliffe, Efmorphia Kritou and Douglas Tudhope (2001).Usability Evaluation for Museum Web Sites.*Museum Management and Curatorship*, 19, 229–252.
5. Daniel Cunliffe (2000).Developing usable Web sites – a review and model. *Internet Research*, 10,295 – 308.
6. F.J Miranda González and T.M Bañegil Palacios (2004).Quantitative evaluation of commercial web sites: an empirical study of Spanish firms. *International Management*, 313–328.
7. Fisher and Tia (2009).ROI in social media: A look at the arguments.*The Journal of Database Marketing & Customer Strategy Management*, 16,189–195.
8. James R. Coyle and Esther Thorson (2001).The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites. *Journal of Advertising*, 30, 65–77.
9. Luis Olsina, Daniela Godoy, Guillermo Lafuente & Gustavo Rossi (1999).Assessing the JIBC April 2012, Vol. 17, No. 1 – 17 –quality of academic websites: a case study. *Open Hypermedia Systems*, 5, 81–103.
10. Levenberg, N. (2005).Does Size matter? Small Firms’ Use of E–Business Tools in the Supply Chain.*Electronic markets*, 15, 94–105.
11. Selz. D. and Petra Schubert (1999).Web Assessment – Measuring the Effectiveness of Electronic Commerce sites going Beyond Traditional Marketing paradigms, in: Proceedings of 32 HICSS conference, Hawaii, 1998.
12. Coyle, J.R., Thorson, E. (2001). The Effects of Progressive Levels of Interactivity and Vividness in Web Marketing Sites. *Journal of Advertising*, 30 (3), 65-77.
13. Shing Lee (2001). An analytical framework for evaluating e–commerce business models and strategies. *Internet Research*, 11,349 – 359.
14. Wim Van Grembergen and Isabelle Amelinckx, (2002). Measuring and Managing Ebusiness Projects through the Balanced Scorecard, in: Proceedings of 31st HICSS conference, Hawaii, 1998.
15. Geyskens Inge, Katrijn Gielens, and Marnik G. Dekimpe (2002), “The Market Valuation of Internet Channel Additions,” *Journal of Marketing*, 66 (April), 102–119.
16. Olsina, L and Rossi G. (2002).Measuring Web application quality with WebQEM.*IEEE*, 9,20–29.
17. Merwe, R. v. d. and Bekker, J. (2003) “A framework and methodology for evaluating e-commerce Web sites” *Internet Research: Electronic Networking Applications and Policy*, Vol 13 No 5 pp 330-341.

18. Ron Kohavi and Rajesh Parekh (2003). Ten Supplementary Analyses to Improve Ecommerce Web Sites. In: Proceedings of the Fifth WEBKDD workshop, 2003.
19. Coral Calero, Julián Ruiz and Mario Piattini (2005). Classifying web metrics using the web quality model. *Online Information Review*, 29, 227 – 248.
20. Wayne G. Bremser and Q.B. Chung (2005). A framework for performance measurement in the e-business environment. *Electronic Commerce Research and Applications*, 4, 395–412.
21. The Internet Scorecard (2007): vebeter your online results, G.J. Smits, J. Steins Bisschop, 221.
22. Ghandour, A., Benwell, G., Deans, K. (2011). Measuring the Performance of e-commerce Websites—An Owner’s Perspective. *Pacific Asia Journal of the Association for Information Systems*, vol.3.
23. Simon Donkor. Performance Measurement in the e-Commerce Industry. May 2003.
24. McDonald, M. and Wilson, H. (1999) e-Marketing: Improving Marketing Effectiveness in a Digital.
25. Chaffey (2001) Optimising e-marketing performance – a review of approaches and tools. In Proceedings of IBM Workshoop on Business Intelligence and E-marketing. Warwick, 6th December 2001.
26. Mark Solcansky and Iveta Simberova (2010). Measurement of marketing effectiveness. *Economics and management*, 755–759.
27. Amazon.com Inc. 2011 Annual Report.
28. www.nasdaq.com
29. Cronbach, L. J. Coefficient alpha and the internal structure of tests. *Psychometrika* 22:3, 1951, pp. 297–334.
30. Hawking, R. R. and Pendleton, O. J. (1983). the regression dilemma, *Commun. Stat.- Theo. Meth*, 12, 497-527.
31. Priyanka Tripathi, Manju Pandey & Divya Bharti (2011) ” Cognitive Approach Towards the Maintenance of Websites Through Quality Evaluation in Operative Phase”. *International Journal of Human Computer Interaction (IJHCI)*, Vol 2, No 2, pp-31-37.
32. Steven H. Seggie, E Cavusgil and S Phelanetl (2007). Measurement of return on marketing investment: A conceptual framework and the future of marketing metrics. *Industrial Marketing Management*, 36, 834–841.
33. Paul D. Berger, Naras Eechambadi, Morris George, Donald R. Lehmann, Ross Rizley and Rajkumar Venkatesan (2006). From Customer Lifetime Value to Shareholder Value: Theory, Empirical Evidence, and Issues for Future Research. *Journal of Service Research*, 2, 156–167.