Revisiting the Impact of Integrated Internet Marketing on Firms’ Online Performance: European Evidences

Maria Teresa Tiago\textsuperscript{a,}\textsuperscript{*}, Flávio Tiago\textsuperscript{a}

\textsuperscript{a}CEEApL - University of the Azores, Rua da Mae de Deus, Ponta Delgada 9501-801

Abstract

This research attempts to unveil some of the impacts on internet marketing and firms’ online performance driven from the adoption and integration of Enterprise Information subsystems. To accomplish this goal a framework is set and test in a sample of 9,192 European firms using Structural Equation Model estimation. This project contributes to the research on this topic with new evidence in a broad sample, and advances knowledge on the nature of the relative importance of different technological subsystems on Internet Marketing as drivers of e-business performance, applied to the European reality.

© 2012 Published by Elsevier Ltd. Selection and/or peer review under responsibility of CENTERIS/SCIKA - Association for Promotion and Dissemination of Scientific Knowledge

Keywords: enterprise information systems; subsystems; internet marketing; e-business performance; european firms.

1. Introduction

Back in 2000, Avlonitis & Karaynni [1] said that “The Internet has been the favorable theme for numerous studies and reports during the last decade. Yet, there is a lack of systematic empirical evidence regarding the marketing activities that are affected by the use of the Internet, and their consequent performance outcomes.”

\textsuperscript{*} Corresponding author.

\textit{E-mail address:} mariaborges@uac.pt
Nowadays, their statement is still an unquestionable true. Internet adoption and use is still growing and impacting business activities, but the assessment of Internet marketing activities needs to be updated.

Deighton [2] suggested that the web launched a set of tools that could revolutionize and optimize marketing activities, driven from the high degree of innovation that goes with it. The passageway from passive to interactive marketing is the reason cited by many as the major driving force for a paradigm change [3-6]. However, despite the growth of the Internet in most developed or developing countries, the systematic research still has some gaps and few empirical outcomes have been produced in the last five years [7-11].

Therefore, this work aims to contribute to the reduction of this gap and update the fundamental understanding of Internet Marketing integrating different EIS subsystems. In this line of research, the present paper discusses the results of an exploratory survey conducted among a large sample of European companies. Using a structural equation analysis, this work explores the relationship between e-business performance and Internet Marketing initiatives, when enclosing a set of well known and adopted EIS subsystems.

This paper has four sections, organized as follows. Section 1 contains a brief background of this research. Section 2 presents some evidences related to Internet Marketing, its advantages and its differences from traditional marketing, and also presents some benefits of employing the EIS subsystems. An evaluation framework is developed in section 3. In the last two sections, the results and conclusions of this study are presented; the major points are reiterated and for further investigation paths are suggested.

2. Literature Background

To attain a more in-depth analysis of the Internet Marketing concept evolution and integration with other technology-based components, it’s necessary to research outside the marketing field. At a first glance, we can find different references to this concept in the literature, such as interactive marketing [2, 12, 13], digital marketing [14], Internet Marketing [7-11, 15, 16], e-marketing and online marketing [17]. All these terms have at least one common characteristic: the use of information technology tools to interact with consumers, enabling strategies oriented to the client and simultaneously minimizing transaction costs.

The digital era allow firms to develop new action approaches at the marketing level [18]. In this light, Biswas and Krishnan [19] reported that, in the earlier years of the new millennium, substantive changes occurred in the way companies and individuals exploit the Internet. But among the various researchers, who focus on this issue, there is no consensus in relation to the existence of an evolving paradigm [20, 21].

Some believe that the Internet led to a rupture process based on a proactive stance and there is a strong link between traditional marketing and marketing applied to the Internet. Others suggest the existence of an evolutionary process and the current paradigm result of the evolution of marketing in order to adapt to the changing environment.

It appears that the impact of Internet Marketing can be perceived as the use of new technologies to improve traditional processes and new forms to replace the traditional methods, and are creating new tools at the marketing level [22-24].

Existing research around IM still has some limitations and is not as developed as in other areas of marketing (e.g., consumer behavior and international marketing), in part because the vast majority of studies in this area are conceptual in nature, such that some authors still question the real impact of the Internet Marketing bases [25].

However, there seems to be common agreement that concrete action needs to be taken into account by organizations in order to exploit the full marketing potential [26-28]. Therefore, understanding technology-driven change in marketing is of critical importance to marketers, as it bears new customers, new brands, new markets, and new market leaders.
Table 1. Traditional Marketing versus Internet Marketing

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Traditional Marketing</th>
<th>Internet Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time perspective</td>
<td>Short-term Focus</td>
<td>Long term focus</td>
</tr>
<tr>
<td>Predominant marketing function</td>
<td>Marketing mix</td>
<td>Marketing mix supported on:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Customer Relationship Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Enterprise Resource Planning</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Relationship Marketing</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Knowledge Management</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Supply Chain Management</td>
</tr>
<tr>
<td>Distribution model</td>
<td>Traditional distribution</td>
<td>Disintermediation and cyber intermediation</td>
</tr>
<tr>
<td>Value Creation</td>
<td>Information was an element of support</td>
<td>Information has value, is an asset</td>
</tr>
</tbody>
</table>

When compared to traditional marketing, Internet marketing offers a host of additional benefits: lower costs [29-31], closer firm and client relationships [32], redesigning distribution [33], among others.

Regardless of the concept definition, Internet Marketing has emerged as a driving force for change in firms and customer relationships [34], leading to the development of appropriate technological solutions to the organization and effective exploitation of existing solutions [35]. As Internet and social network impact grows, marketing mix as a marketing support tool seems to be diminishing and technological nature tools are taking its place: customer relationship management [24, 35-37], knowledge management [38-40], enterprise resource planning [41], and supply chain management[29, 31, 42].

Table 2. Internet Impact on Strategic Dimensions and EIS employed

<table>
<thead>
<tr>
<th>Strategy dimension</th>
<th>Internet Impact</th>
<th>Tools to employ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Global market</td>
<td>Instantaneous global coverage</td>
<td>Website; e-CRM</td>
</tr>
<tr>
<td>Global products and services</td>
<td>“Glocal” posture</td>
<td>Website (e-marketing-mix); e-CRM; KM; ERP; SCM</td>
</tr>
<tr>
<td>Location of activity</td>
<td>Elimination of the location dimension</td>
<td>ERP; SCM; email; Intranet and extranets;</td>
</tr>
<tr>
<td>Global marketing</td>
<td>Multilingual Site</td>
<td>Website; e-marketing-mix; CRM; KM</td>
</tr>
<tr>
<td>Drives competitive global</td>
<td>Ease of monitoring competition</td>
<td>KM; e-marketing-mix; CRM; SCM; ERP</td>
</tr>
<tr>
<td>Social Network</td>
<td>Global communities</td>
<td>Social CRM; web semantic;</td>
</tr>
</tbody>
</table>

Source: Adapted from Yip (2000) and Kotabe and Helsen (2004) and Berthon et al (2012)

It appears that the correct use of EIS and integration into the Web platform will enable the achievement of competitive advantages [43, 44]. However, despite the growing importance of Internet Marketing and EIS subsystems that can be used and enhanced, there is still a gap in the literature, and consequently in practice, related to the measurement of EIS in Internet Marketing and its impact on e-business. When considering that the implementation of these systems exceeds the scope and tactical control, in relation to the organization’s strategic intent, revisiting a framework of internet marketing impact measurement seems advisable.
3. Evaluation Framework and Hypotheses

It was largely a result of the review of the literature that led organizations to change the focus of their customer orientation in order to meet global markets’ increasing competitiveness and keep up to new consumers trends [32, 34, 37, 44]. In this sense, companies tend to engage a marketing mix adapted to the new reality [24, 32, 39, 45], using all EIS subsystems available in order to achieve sustainable competitive advantage [5, 7, 29, 31, 36, 37, 46].

From a wide set of EIS available, three were chosen by their marketing impact reported in the literature: Customer Relationship Management (CRM), Knowledge Management (KM) and Supply Chain Management (SCM).

Considering a theoretical base for the development of these postulates and the existing literature around the Internet Marketing and Information Systems, three hypotheses were set reflecting the impact of each IES subsystem in Internet Marketing and the impact on Internet marketing in firms’ online performance. Since the use and adoption of the different IES subsystems varies from firm to firm, the impact of contextual factors also was measured, following the TOE model dimensions.

Therefore, the hypotheses were defined as presented below:

H1: Internet-driven business strategy approach depends on contextual factors.
H2: The different EIS subsystems have a positive impact on Internet Marketing.
H3: Integrated Internet Marketing has a positive impact on e-business performance.

Appearing in the literature with great frequency were references to contextual factors as determinants of organizational performance and the adoption of technological tools associated with Internet marketing [29, 34, 47]. Following an adaptation of the model presented by Tornatzky and Fleischer [48], later improved by Khatibi et al. (2003) and Moini and Tesar [49], making the assessment of technological and organizational environment through three key dimensions – the organizational context, technological context and the surrounding context – were set on two assumptions. However, the work of these authors did not allow the gap found by Xu et al. [50] on the influence of contextual variables in the way employers act in terms of Internet Marketing, and an additional construct was considered.

Measuring the performance of online businesses has been the subject of several studies and, as mentioned Grembergen and Amelinckx [51], should not apply solely to traditional accounting and financial tools as a standard of performance, due to the indirect, intangible and even strategic benefits associated with e-business. For example, the work of Gunasekaran and Ngai [52] listed some of the benefits associated with one of the tools (SCM): minimizing duplication of efforts and processes, ensuring higher levels of standardization of processes and products and increasing the overall quality. From the literature review, it is found that online performance has been linked positively to non-financial performance measures such as quality [40], innovation [53], productivity, and sales [29]. So we will follow in the last authors’ steps, using as performance measures elements of both infrastructure and processing dimensions.

The validation of the measurement model was done by using Confirmatory Factor Analysis (CFA). We will see later that the observable variables (indicators) we selected are measures of four latent variables (factors). We assume that these three EIS subsystems have a direct effect on IM and upon online corporation performance. Therefore, we assume that the online corporation performance is explained not only by the Internet Marketing strategy, but also by integrated IM factor that is concerned with the CRM, KM, and SCM components.
4. Methodology and Results

To validate the assumptions set out, we made an empirical analysis of the data collected from a sample of 9,192 European companies covering five dimensions of analysis: (1) infrastructure and information technology and e-communication skills, (2) using e-business and e-commerce, (3) barriers to e-commerce, (4) impact of the sale and demand on-line, and (5) derived expectations and impact of e-business. The choice of Europe as a field of study was due to the reduced number of jobs in the digital context produced at the European level [50, 54]. The data employed in the empirical research comes from the e-Business W@tch annual survey (2003). The data cover 25 European countries (Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, UK and Norway).

Initially, we used a set of descriptive statistics that allowed greater sensitivity to the data. Such statistics used following the investigation acted as guide for the multivariate statistics [55]. Of the various methods of analysis available, three techniques were considered appropriate to the objectives of this work: factor analysis, cluster analysis and structural model. Distribution of firm size, measured by the number of employees, shows that most are micro and small size (around 59% of the firms). The industry distribution of the responding sample is similar to the original sample. The two most heavily represented sectors in the sample are business services and tourism, with 11.6% and 11.5%, respectively, closely followed by all the others, with the exception of the craft and trade sector that represents only about 6% of the sample.

A factor analysis follow-up by a cluster analysis was performed to verify companies’ profiles in terms of Internet marketing sophistication adoption. First, a factor analysis was applied to 19 variables, to reduce the number of variables on internet marketing features adopted. The results permitted the extraction of four factors, representing 62% of the total variance explained. The suitability of the technique is supported by the statistical significance of Bartlett’s test, as well as the high value of the Kaiser-Meyer-Olkin (0.858). Considering the variables associated with each component, the first factor was designated by “Online sales” and reflects the use of components associated with online sales behavior; the second factor was designated by “E-business” and reflects a wider range electronic features adopted; the third factor was denominated of “Online purchases” since it emphasized activities related with purchases; the fourth factor found is mainly associated with operations and organizations changes induce by online activity and therefore was designated of “procedures modification”.

With the factors found, a cluster analysis was performed, using the K-means method. The ANOVA test performed show that all classification dimensions used in the analysis were significant. Therefore, the final solution had three groups of firms: one in which online activity is confine to general sales and e-business (n=7,851); a second in which the emphasis is on the procedures’ modifications (n=451), and a third in which the focus is place on online purchasing (n=890). To interpret the relationship between the explanatory variables and the dependent variable use of Internet Marketing, groups’ mean differences was assess regarding the contextual variables considered.

Table 3. Groups’ mean differences regarding to contextual variables

<table>
<thead>
<tr>
<th></th>
<th>Cluster 1 (n=7,851)</th>
<th>Cluster 2 (n=451)</th>
<th>Cluster 3 (n=890)</th>
<th>Sig.</th>
<th>Means difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firm size</td>
<td>2.38</td>
<td>2.47</td>
<td>2.50</td>
<td>0.000</td>
<td>1&lt;3.2</td>
</tr>
<tr>
<td>Number of employees in IT</td>
<td>4.77</td>
<td>2.19</td>
<td>1.38</td>
<td>0.010</td>
<td>2&lt;1.3</td>
</tr>
<tr>
<td>Technological readiness</td>
<td>28.13</td>
<td>18.66</td>
<td>59.08</td>
<td>0.000</td>
<td>2&lt;1.3</td>
</tr>
<tr>
<td>EIS subsystems</td>
<td>8.57</td>
<td>3.90</td>
<td>15.68</td>
<td>0.000</td>
<td>2&lt;1.3</td>
</tr>
<tr>
<td>ICT adoption level in origin country</td>
<td>51.75</td>
<td>50.86</td>
<td>51.88</td>
<td>0.308</td>
<td>-</td>
</tr>
</tbody>
</table>
The results partially support hypothesis one. They confirm the influence of organizational characteristics in the online strategy pursued; but no support was found regarding the influence of the technological level of the country in IM practices.

To assess the overall model which considers the influence of EIS subsystems in Internet marketing and its impact on online performance a structural equation model was used. The model was estimated by the maximum likelihood method in the AMOS package. The model goodness of fit may be considered acceptable according to the values of some goodness-of-fit indexes, although the chi-square test statistic ($\chi^2 = 75.750; \text{df} = 13; \text{p-value} = 0.000$) is significant, implying a bad fit. However, this test is known to have serious limitations – namely its dependence on the sample size and on the number of indicators. In general, for large sample sizes the chi-square statistic is significant, and in the present case the sample size is very large ($n = 9,192$). Several goodness-of-fit tests were conducted to determine whether the empirical model could explain the observed data. The measures for global model fit included suggesting that the model fits the underlying data quite well and that the hypothesis paths were all statistically significant.

![Estimation model](image)

**Key for significance measures:**

* : $\alpha > 0.10$

** : $\alpha > 0.05$

***: $\alpha > 0.01$

# : for model identifiability, this path coefficient was set to 1 in the unstandardized case.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Value obtained</th>
<th>Suggested (Hair et al. 1998)</th>
</tr>
</thead>
<tbody>
<tr>
<td>RMSEA</td>
<td>0.023</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>NFI</td>
<td>0.994</td>
<td>&gt; 0.9</td>
</tr>
<tr>
<td>TLI</td>
<td>0.989</td>
<td>&gt; 0.9</td>
</tr>
<tr>
<td>CFI</td>
<td>0.995</td>
<td>&gt; 0.9</td>
</tr>
<tr>
<td>GFI</td>
<td>0.996</td>
<td>&gt; 0.9</td>
</tr>
<tr>
<td>AGFI</td>
<td>0.989</td>
<td>&gt; 0.9</td>
</tr>
</tbody>
</table>

Fig. 1. Estimation model

After global model fit has been assessed, the numerical results were evaluated in order to test their support of the research question. The numerical results can be obtained directly from the path coefficients of the structural model (Figure 1).
Our findings support the conceptual framework regarding hypotheses two and three. Thus, this finding lends empirical support to the concept that e-business performance can be improved by integrated Internet Marketing. Similarly, KM, SCM, and CRM contribute 87%, 92%, and 94%, respectively, to integrated Internet marketing constructs. The significant values achieved in the e-business success construct provide empirical support to the theoretical views that e-business performance needs to be measured with economic and market-based criteria.

5. Conclusion

This research was designed to answer the research question: how do organizations take advantage of EIS subsystems integrated in Internet Marketing strategy, and what is its impact on online performance? The literature review showed that only a few works assuming a corporate perspective have examined the contributions of Internet Marketing to e-business performance. However, the majority of these works were confined to specific industries. The goals of the current study were therefore: (1) to determine whether the implementation of CRM, SCM, and KM is positively linked to integrated Internet Marketing; (2) to identify the relationship between integrated Internet Marketing implementation and e-business performance; and (3) to determine which contextual variables affect the adoption of Internet Marketing activities.

The results generated some interesting findings. First, data support in general the conceptual framework presented. However, some mentions need to be made. According to the work of several authors there a considerable number of contextual factors affecting the investment decision and the adoption of EIS subsystems, as well as the online strategy of the firm [19, 23, 26, 30, 46, 48, 54, 56-58]. The results obtained reinforce these conclusions and justify the different approaches found. However, the analysis reveals that no relationship can be established between a firm’s practices and its country of origin.

It also was possible to draw some conclusions about the way European companies are using Internet Marketing. The great majority seems to be exploring their online presence through e-business or sale strategy. However, a significant number of firms presented a focus on purchasing activities, unveiling the increasing importance of e-procurement.

The main results suggest a strong positive relationship between the three EIS subsystems consider and internet marketing as well as a positive impact of IM on e-business performance. The analysis also reveals that in digital environments the customer relationship management and supply chain management has a greater impact on internet marketing than knowledge management activities do.

Thus, this work contributes to the theory of Internet Marketing by extending the dimensions of EIS subsystems integrated. Simultaneously, it adds to the knowledge of assessment of organizational performance, since it expands the research to the field of e-business, testing the applicability of different metrics from traditional accounting. The results also lead to a deeper understanding of Internet Marketing.

Some useful preliminary insights are produced, however, leaving a considerable number of issues for future research, providing scholars with an opportunity to conduct further research in this field and practitioners with an opportunity to enhance internet marketing strategy based on the adoption of EIS subsystems with the knowledge that these combination has proven to impact positively e-business performance.

However, these findings should be viewed in light of some limitations. Further work is clearly needed to examine the inclusion of news elements such as management support to internet marketing initiatives and multi-level analysis of e-business process. Aside from these considerations, it would be interesting to compare the results of online to those of brick-and-mortar firms. Certainly, there is ample scope for further research in this area.
Acknowledgements

This paper is based on data provided by the European Commission and the e-Business W@tch and institutional support for this work is granted by FCT – CEEApla, Research Center for Applied Economics.

References

[38] H. Gupta, I. Mumick, Selection of views to materialize in a data warehouse, in: IEEE (Ed.) Proceedings IEEE Transactions on Knowledge and Data Engineering Int, 2005, pp. 24-43.