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Commercial Websites: A Focus on the Essential

E

Alexandre Ferreira
Beira Interior University, Portugal

Francisco Antunes
Beira Interior University, Portugal

INTRODUCTION

Even "small online business" (with non-transactional websites, consisting of approximately 10 – 20 pages with some basic content management and social media widgets), incur in costs associated with designing, developing and building a website. Just to report some indicative numbers (for some interesting data please see: http://www.executionists.com/blog/cost-to-build-websites-2014/ or http://www.webpagefx.com/How-much-should-web-site-cost.html, for instance), a small business will normally contact a Web developer to discuss the site content and design, with the developer offering a quote to deliver the site. Non-transactional sites can be delivered in a huge range of budgets. A five-page small-business site could cost as little as $500, while a five-page site for a major firm could have a $100,000 budget. The difference in budget relates to the complexity of design, cost of custom photography, motion graphics, animation and interactive tools. A simple but professional non-transactional website can usually be produced starting at $2,500, plus basic Web hosting.

When referring to transactional websites, costs can increase quite drastically with every extra functionality or modules of functionalities. A Custom Content Management System cost – for clients who want to manage their own content – can range from $2,000 to $20,000, while the costs of e-commerce shopping carts, catalogs, payment processing range from $1,500 to $5,000 (or more, depending on requirements) and the creation and management of a social media network profile such as *Twitter*, *Facebook*, *YouTube*, *Google+*, *LinkedIn* etc., range from $500 to $2,000.

In spite of the fact that it is expectable to pay a lot more on a brick and mortar retail shop (which include inventory, interior design, furniture, rent, utilities, staff, equipment, insurance, etc.), the presented numbers (that do not include any maintenance costs) are not irrelevant, especially when it concerns businesses (small or not) baring financial restrictions.

As the success of a commercial internet presence is strongly affected by its functionalities, it is important to find out which of available functionalities for a commercial internet presence (or commercial website) are more relevant to online buyers, thus helping managers to prioritize their website investments (whether reducing software development costs or software acquisition costs) and aiding them to make the decision to spend the money where it counts more, according to their financial restrictions.

The novelty of this research is a science-based prioritization of the functionalities that can be implemented on websites, according to a rationale based on the perceived importance of online consumers (or e-consumers), regarding web shopping (rather than mere "gut-feelings" or even misleading advertising from web design companies). The intents of this research aim at a deeper understanding of online shopping in general and Portuguese online shopping, in particular.

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As online shopping refers to a non-presencial environment, the interaction between costumers and online sellers relies on the available functionalities of the commercial presence solutions, which try to mimic human interaction. Nevertheless, there is no consensus on how to classify or to aggregate any possible functionality to implement within a commercial internet presence (which we will refer, so forth, simply as web presence) and it is recognized that the proper design of the functionalities is directly related to a web presence success (Ramanathan, 2010; Tucker, 2008).

To this matter, rather than describing which functionalities a web presence should provide, literature focus much more on describing large sets of functionalities or abstract attributes that should be implemented, thus lacking a greater level of detail. Within this context, this work sets out to bridge the gap between literature review and the need to aid people (i.e. managers and programmers) in choosing the right functionalities to implement a proper and rational web presence of a company. In addition, it is also intended to help developers in adjusting software packages, according to the possibility for a wider modular offer, adapted to the needs of very small businesses or to the ones of large corporations, trying to reduce risks and promote sustainability of web presences (Alt & Klein, 2011).

To do so, this study (though only focusing on internet acquisition of physical goods) is built on the functionalities identified by Schuh, Kegel, and Bistricky (2009), as their study is likely to include the most extensive set of identified web presence functionalities and also the vast majority of identified functionalities within the literature review (for a comparative analysis please see Ferreira & Antunes, 2015).

METHODOLOGY AND RESULTS

The study used an iterative approach, as described in the following subsections. After an initial online survey, the second phase of the study regarded an exploratory factor analysis, based on the obtained results, by using principal component analysis with *Varimax* rotation and the software *SPSS Statistics* – v.21, IBM SPSS. In the last stage, a confirmatory factor analysis was used, by applying structural equation modeling analysis and using the software *AMOS* v.21, IBM SPSS.

Survey Instrument and Sample

The attributes were summarized into various items and a survey instrument was created (please see Appendix). This instrument, implemented as an online survey using *GoogleDocs (*https://docs.google.com*)*, asked the respondents to identify the extent to which they agreed/disagreed with these items in relation to their experience in shopping from web sites. Respondents rated each item using a Lickert scale from 1 to 7, where 1 represented "strongly disagree" and 7, "strongly agree".

Although websites should cater to experienced and less experienced consumers, this research focuses on the perceptions of experienced users to benefit from their knowledge in repeated experiences. Therefore, the survey was administered to a sample of heterogeneous Portuguese higher education teachers, as they usually have web-shopping experience of physical goods (e.g. books, printing supplies, electronics, etc.) and they are easily targeted using their e-mails, as the vast majority of them are publically available at the websites of their institutions.

In spite of the fact that the selection of Portuguese higher education teachers indeed carried an element of convenience (in terms of time, effort and money in data gathering), the sample selection was not without further thought. In order to achieve the purposes of the research, the target users needed to possess a set of intrinsic characteristics, beyond usual geographic and demographic dispersion (in

terms of gender and age), namely: a repeated web-shopping experience; informatics literacy; computer availability; and even willingness to participate.

Although other professional categories could have been included, as later expressed in the limitations of this study, the authors stand that the selected sample (a key informant sample) was representative and adequate to the objectives of the research. Accordingly, a list of emails was gathered, using the respective higher education institutions websites and an email, containing a link to the online survey, was sent. The e-mail stressed out that only people with repeated web-shopping experience of physical goods should answer. The process returned 129 validated responses over a period of two months (age and gender descriptive analysis of the respondents are shown in Tables 1 and 2).

Sampling Adequacy and Multicollinearity

Sampling was found adequate, as the Kaiser-Meyer-Olkin measure (KMO-test) was 0.876 (and, therefore, greater than 0.5), the Bartlett's Test of Sphericity was significant and all the elements on the diagonal of the anti-image matrix of covariance and correlations were greater than 0.5 (Field, 2000). As the determinant of the correlation matrix was greater than 0.00001, it was assumed that multicollinearity was not present (Field, 2000).

Factor Extraction

Retained factors presented an *eigenvalue* greater than 1, as shown in Table 3, yielding 5 factors that accounted for 72.303% of the variance (a level within usual acceptance in social sciences, according to Hair, Black, Babin, Anderson, & Tatham, 2006). The component correlation matrix, after *Varimax* rotation and the variables associated to each factor are shown in Table 4, while the interpretation of the obtained factors is presented in Table 5.

Internal Consistency of the Scales

To analyze the internal consistency of the scales of the obtained factors, Cronbach's Alpha coefficient was used. The results, presented in Table 6, were much higher than the threshold level of 0.6 considered appropriate for exploratory research.

Table 1. Frequency table (gender)

Gender	Frequency	%
Feminine	55	42.6
Masculine	74	57.4
Total	129	100.0

Table 2. Frequency table (age)

	Frequency	%
<=35 years	10	7.8
36-45 years	45	34.9
46-55 years	54	41.9
56-65 years	14	10.9
+65 years	6	4.7
Total	129	100.0

Table 3. Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	7.711	40.584	40.584	7.711	40.584	40.584	5.769	30.365	30.365
2	2.235	11.761	52.346	2.235	11.761	52.346	2.830	14.896	45.261
3	1.445	7.605	59.950	1.445	7.605	59.950	1.766	9.295	54.555
4	1.339	7.045	66.995	1.339	7.045	66.995	1.723	9.069	63.625
5	1.008	5.307	72.303	1.008	5.307	72.303	1.649	8.678	72.303
6	.696	3.662	75.965						
7	.554	2.917	78.882						
8	.513	2.700	81.582						
9	.485	2.554	84.136						
10	.463	2.436	86.572						
11	.433	2.280	88.852						
12	.375	1.971	90.823						
13	.348	1.834	92.657						
14	.319	1.678	94.334						
15	.262	1.376	95.711						
16	.251	1.323	97.034						
17	.233	1.224	98.258						
18	.176	.927	99.186						
19	.155	.814	100.000						

Extraction Method: Principal Component Analysis.

Confirmatory Factor Analysis

Based on the retained five factors in EFA, a confirmatory factor analysis (CFA) using structural equation modeling (SEM) was then performed.

Data Normality

As the maximum likelihood estimation (MLE) was applied to the model, it was necessary to guarantee that observed variables presented a multivariate normal distribution. To this matter, the skewness (*sk*) and kurtosis (*ku*) of every variable was analyzed (as evidenced in Table 7).

The presented values were within the range that allowed the assumption of normality existence (|sk|<3.0; |ku|<7.0) (Finney & DiStefano, 2006; Kline, 2011; Marôco, 2010). Therefore, MLE produced efficient and consistent results.

The squared Mahalanobis distance was used to test the existence of multivariate outliers (i.e. *p1* and *p2* <0,001), although no evidence of their presence was found.

Table 4. Observed variables and corresponding factors

Factor	Variables
1	*EstimDeliveryDate*
	OrderConfirmation
	OrderStatusTracking
	PreDeliveryInfo
	ComplaintStatus
	MethodOfDelivery
	DeliveryDigitalGoods
	CancelationOfOrders
	PrePaymentInfo
2	*Newsletter*
	ProdAdvertisement
	RssFeed
	CompAdvertisement
3	*ProductCatalog*
	DetProductCatalog
4	*PaypalPayment*
	PaysafecardPaym
5	*MoneyTransfer*
	CashAtPickup

Table 5. Extracted factors

Factor	Description
1	*Order processing:* Encompasses functionalities that support the ordering process as well as all aspects related after sales support (e.g., complaints)
2	*Advertising and featured items:* Integrates functionalities that allow a user to be informed of products conditions, news about product and about the company
3	*Product Analysis:* Combines functionalities that inform users on the characteristics of the products for sale and relevant information about them
4	*Electronic card payment:* Includes functionalities that allow paying orders by electronic means (e.g., *PayPal* and *PaySafecard*)
5	*Traditional payment*: Covers functionalities that allow paying orders by traditional means (e.g., money transfer and cash at pickup payment)

Table 6. Retained factors

Factor	Cronbach's Alpha	Evaluation (Kline, 2011)
1	0.93	Excellent
2	0.83	Good
3	0.76	Good
4	0.78	Good
5	0.70	Acceptable

Table 7. Assessment of normality

Variable	min	max	sk	c.r.	ku	c.r.
CancelationOfOrders	1.000	7.000	-2.165	-10.038	6.915	16.031
DeliveryDigitalGoods	1.000	7.000	-1.434	-6.650	2.787	6.461
MethodOfDelivery	1.000	7.000	-1.227	-5.689	2.749	6.373
ComplaintStatus	1.000	7.000	-1.558	-7.224	3.453	8.005
RssFeed	1.000	7.000	.274	1.271	-1.074	-2.490
CashAtPickup	1.000	7.000	-.780	-3.614	-.285	-.660
MoneyTransfer	1.000	7.000	-.958	-4.444	.216	.501
PreDeliveryInfo	1.000	7.000	-1.831	-8.492	4.778	11.077
OrderStatusTracking	1.000	7.000	-1.882	-8.726	6.107	14.158
OrderConfirmation	1.000	7.000	-1.823	-8.452	4.889	11.335
EstimDeliveryDate	1.000	7.000	-1.897	-8.795	5.959	13.816
CompAdvertisement	1.000	7.000	-.082	-.379	-.428	-.993
ProductCatalog	1.000	7.000	-1.361	-6.313	1.471	3.410
Newsletter	1.000	7.000	-.111	-.513	-.877	-2.034
ProdAdvertisement	1.000	7.000	-.095	-.443	-.764	-1.771
DetProductCatalog	1.000	7.000	-.864	-4.005	.139	.322

Factor Analysis

The initial model, presented adequate standardized factor weights ($\lambda \geq 0.50$) and, consequently, adequate individual reliability values (individual $R^2 \geq 0.25$). Nevertheless, the model presented a set of merely acceptable quality adjustment indexes (χ^2/df=1.498; *CFI (Comparative Fit Index)*=0.945; *GFI (Goodness of Fit Index)*=0.858; *TLI (Tucker-Lewis Index)*=0.934; *RMSEA (Root Mean Square Error of Approximation)*=0.062; *P[rmsea≤0.05]*=0.122). Particularly, a *p-value*<0.05 associated to the Qui-square test indicated that the hypothesis of having an estimated covariance matrix of the model that was equal to the population covariance matrix should be rejected, meaning that trying to generalize the results would not be possible.

For a better understanding of the model, modification indexes were calculated. The analysis of those indexes allowed to perceive that there was a correlation between the error of the variable "*PrePaymentInfo*" (*e1i*) and factors 2, 3 and 5, which suggested that its behavior was not explained by its associated factor (namely *F1_OrderProcessing*). In addition, the variables "*PaypalPayment*" and "*PaysafecardPaym*" loaded both on factor 2 (*F2_AdvertisingFItems*), and on factor 5 (*F5_TraditionalPayment*), which implied dropping those items and the adjustment of the original model (Marôco, 2011). The quality adjustment indexes of the modified model (represented in Figure 1) was very good (χ^2/df=1.098; *CFI*=0.991; *GFI*=0.912; *TLI*=0.989; *RMSEA*=0.028; *P[rmsea≤0.05]*=0.891).

Factor Validity

To evaluate whether the modified model was significantly better than the original one, a χ^2 differences test was performed, as the new model was a nested model (by item elimination) of the original one (Marôco, 2011). The tested hypotheses were:

- $H_0 : x_0^2 \neq x_m^2$ (both original and modified model have the same adjustment quality).
- $H_0 : x_0^2 \neq x_m^2$ (the adjustment quality of the models is different).

The statistic of the test was:

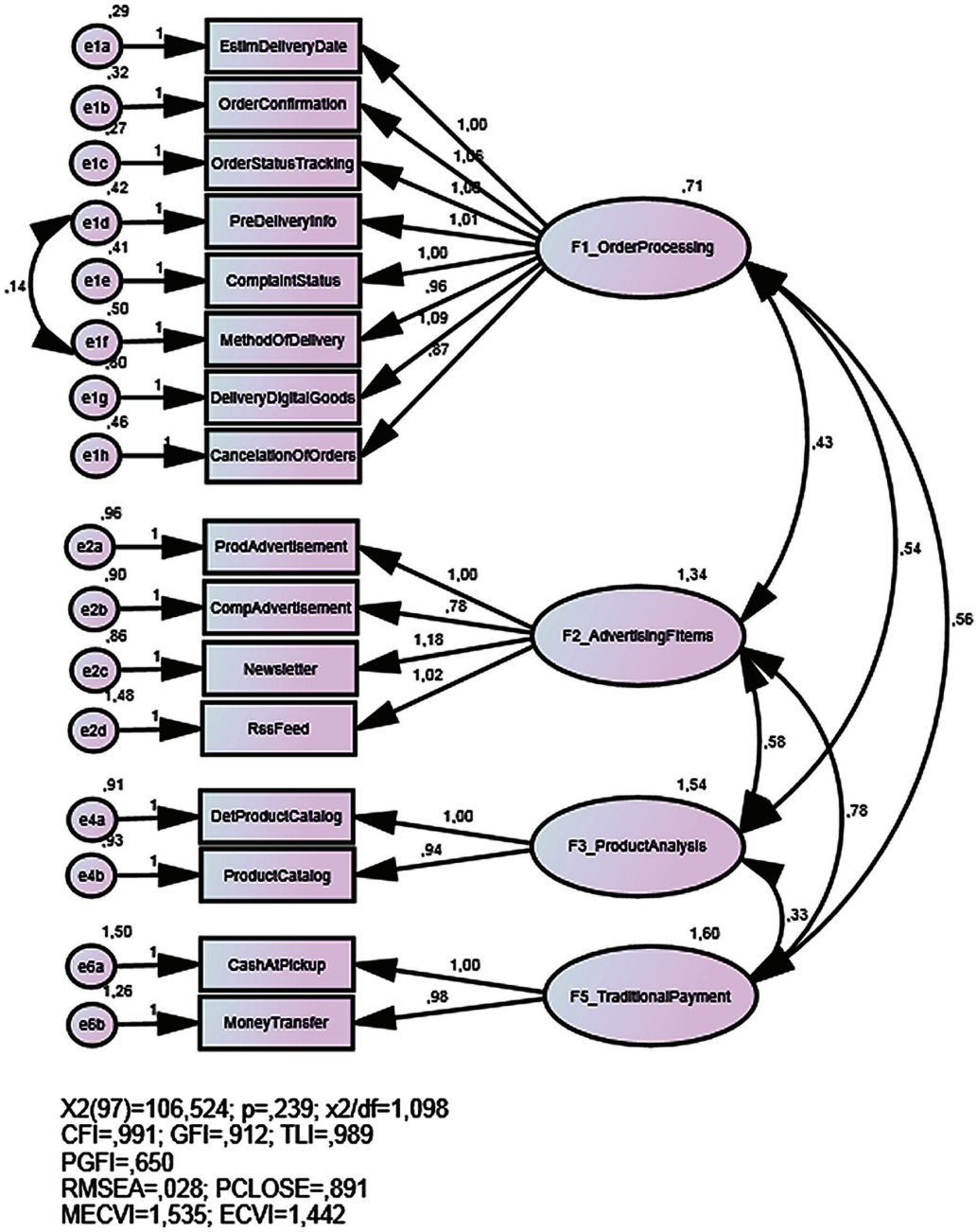
$$x_{dif}^2 = x_0^2 - x_m^2 = 214.212 - 106.524 = 107.688$$

with 143 – 97=46 degrees of freedom. For $\alpha = 0.05$, we observed that $x_{0.95;\,(46)}^2 = 62.830$. As

$$x_{dif}^2 = 107.688 > x_{0.95;\,(46)}^2 = 62.830$$

H_0 was rejected. Therefore, the modified model presented a better adjustment, than the original model, regarding the observed correlation structure between the items of the study sample. It is also interesting to point out that the modified model presented a considerably lower *MECVI (Modified Expected Cross-Validation Index)* (1.535<2.544) and *ECVI (Expected Cross-Validation Index)* (1.442<2.408), which indicated that the modified model also presented a better validity, regarding the population of the study (Marôco, 2011).

Figure 1. Modified model



X2(97)=106,524; p=,239; x2/df=1,098
CFI=,991; GFI=,912; TLI=,989
PGFI=,650
RMSEA=,028; PCLOSE=,891
MECVI=1,535; ECVI=1,442

Convergent Validity

In order to evaluate the convergent validity of the factors, the output of the standardized regression weights (λ) of the modified model was used (Table 8) to calculate the composite reliability of each factor (CRe_j). All values were higher than 0.7, presenting a good reliability (Hair, et al., 2006).

Table 8. Factor composite reliability (CRe)

Factor	Variables	λ	$1-\lambda$	CRe
F1_OrderProcessing	*EstimDeliveryDate*	0.843	0.157	**0.96**
	OrderConfirmation	0.843	0.157	
	OrderStatusTracking	0.848	0.152	
	PreDeliveryInfo	0.794	0.206	
	ComplaintStatus	0.794	0.206	
	MethodOfDelivery	0.753	0.247	
	DeliveryDigitalGoods	0.717	0.283	
	CancelationOfOrders	0.735	0.265	
F2_AdvertisingFItems	*ProdAdvertisement*	0.763	0.237	**0.90**
	CompAdvertisement	0.690	0.310	
	Newsletter	0.826	0.174	
	RssFeed	0.696	0.304	
F3_ProductAnalysis	*ProductCatalog*	0.769	0.231	**0.85**
	DetProductCatalog	0.793	0.207	
F5_TraditionalPayment	*CashAtPickup*	0.718	0.282	**0.80**
	MoneyTransfer	0.743	0.257	

Discriminant Validity

Discriminant validity was then assessed by comparing the Average Variance Extracted (AVE) for each factor, with the squared estimate of the correlation between the factors, whose validity needed to be determined. All AVE (as presented in Table 9) were higher than 0.5 and also higher than the squared correlation coefficient between factors (r^2), as shown in Table 10 and Table 11, demonstrating the discriminant validity of the factors (Fornell & Larcker, 1981; Marôco, 2011).

Although it would be theoretically adequate to consider the existence of a second-order latent factor, the obtained values for the quality adjustment indexes of that situation were worse than the ones obtained regarding the first-order modified factor model, thus concluding that there is no gain in adding a second-order latent factor to the model.

DISCUSSION

This study presents divergences regarding the distinct functionalities identified by (Schuh, Kegel, & Bistricky, 2009), providing evidence that many of them are perceived as similar. This means that even though the listed functionalities can be individualized in terms of software programming, according to the results, many of those functionalities are seen together as single units (corroborating Chaffey & Smith, 2008 and Singh, 2002). Moreover, the referred authors stand that there are nine dimensions (or groups) of consumer-focused functionalities that should support the online selling process, but the obtained results are not consistent with such claim. The results point out that the functionalities regarding product selection, company information and contact (defined as separate groups of functionalities) are overlapped, as well as the ones encompassed within order, order management and delivery, which are actually perceived as a whole process.

Table 9. Average Variance Extracted for each factor

Factor	Variables	λ	$1-\lambda$	AVE
F1_OrderProcessing	*EstimDeliveryDate*	0.843	0.157	**0.75**
	OrderConfirmation	0.843	0.157	
	OrderStatusTracking	0.848	0.152	
	PreDeliveryInfo	0.794	0.206	
	ComplaintStatus	0.794	0.206	
	MethodOfDelivery	0.753	0.247	
	DeliveryDigitalGoods	0.717	0.283	
	CancelationOfOrders	0.735	0.265	
F2_AdvertisingFItems	*ProdAdvertisement*	0.763	0.237	**0.68**
	CompAdvertisement	0.690	0.310	
	Newsletter	0.826	0.174	
	RssFeed	0.696	0.304	
F3_ProductAnalysis	*ProductCatalog*	0.769	0.231	**0.74**
	DetProductCatalog	0.793	0.207	
F5_TraditionalPayment	*CashAtPickup*	0.718	0.282	**0.66**
	MoneyTransfer	0.743	0.257	

Table 10. Correlation coefficients and squared correlation coefficients

	r	r^2
r_{12}	0.447	0.200
r_{13}	0.523	0.274
r_{15}	0.531	0.282
r_{23}	0.402	0.162
r_{25}	0.535	0.286
r_{35}	0.211	0.045

Table 11. AVE of each factor and squared correlation coefficient

Factors	F1	F2	F3	F5
F1	**0.750**			
F2	0.200	**0.685**		
F3	0.274	0.162	**0.736**	
F5	0.282	0.286	0.045	**0.665**

Therefore, result analysis determined the existence of four distinct sets of functionalities (please see their description in the Appendix), whose presentation order does not reflect their relative importance, to be considered as "essential" on online commercial presence.

The first set, *Order processing* encompasses:

- *Estimated delivery date;*
- *Order confirmation;*
- *Pre-delivery information;*
- *Complaint status;*
- *Method of delivery;*
- *Delivery of digital goods;*
- *Cancelation of orders.*

The second set, *Advertising and featured items* includes:

- *Product advertisement;*
- *Company advertisement, which exhibits news about the company;*
- *Newsletter*;
- *RSS (Rich Site Summary) feed*.

The third set, *Product Analysis* integrates:

- *Product catalog;*
- *Detailed product catalog*.

The fourth and last set, *Traditional payment*, combines:

- *Cash at pickup payment;*
- *Money transfer payment.*

According to the results, every other functionality (in Schuh, et al., 2009) should be classified as "accessory".

Although, based on the literature review, it would be expectable to find the credit card payment functionality as an "essential" one, no evidence was found to support it. Instead, traditional payment methods (namely *cash at pickup* and *money transfer*) were the ones classified as such. This might reveal that there is still a feeling of distrust regarding the use of credit cards for online payment in Portugal. It could also mean that many buyers have no knowledge on secure payment options (that do not require the use of a physical card, as in *PayPal (*https://www.paypal.com*), PaySafecard (*https://www.paysafecard.com*)* or *MBNet (*https://www.mbnet.pt*)*, in the Portuguese case, or even that Portuguese consumers try to decrease the risk of online buying, by only paying upon the delivery of ordered items.

The above situation, nonetheless, is not a new finding. Several authors (as Antoniou & Batten, 2011; Bellman, Lohse, & Johnson, 1999; Hsieh, 2001) established that even though online credit card payment is quite common it also poses a barrier to electronic commerce when people mistrust the privacy of the involved information. Consequently, a commercial internet presence should provide or ensure that there are so-called traditional payment functionalities, to decrease the risk of losing a sale.

Accordingly, companies that want to boost online payment (to decrease transaction costs, to lower shipping and delivery fees to their customers, to automate accounting procedures, etc.) should place and promote security indicators on their commercial internet presences (e.g. cryptographic protocols, authentication certificates for secure electronic dealing, etc.). In addition, a joint-promotion action between E-commerce associations, such as EMOTA (European Multi-channel and Online Trade Association) or ACEPI (Association of Electronic Commerce and Interactive Advertising, in the case of Portugal) and the banking system seems advisable.

Associated to the feeling of online shopping distrust, is the appreciation that order tracking functionalities seem to mitigate the situation. This is done, by allowing online buyers to follow every step of the order/buying process, especially when it concerns a first purchase (thus ratifying authors like Chaffey & Smith, 2008; Chen & Teng, 2013; Donthu & Garcia, 1999; Eisenmann, 2002; Kim, 2012; Ramanathan, 2010; Rodrigues, 2002; Schneider, 2007; Schuh, et al., 2009; Singh, 2002; Turban, King, Lee, Liang, & Turban, 2010; Voss, 2000). Therefore, advertising the existence of order tracking functionalities in the

commercial internet presence seems quite important, in order to both enhance costumers' trust in the company and its suitability to satisfy an order.

In spite of the observed discrepancies (regarding Schuh, et al., 2009), the study allowed to ratify as "essential" many functionalities that were thought to strengthen confidence and loyalty (Massad, Heckman, & Crowston, 2006; Reichheld & Scheffer, 2000; Swaminathan, Lepkowska-White, & Rao, 1999; Valvi & Fragkos, 2012; Zeithaml, Parasuraman, & Malhotra, 2002), as the *estimated delivery date; order tracking; state of complaints; cancellation of orders; product announcements; or product category*.

This study also reveals that online buyers enjoy being informed about the companies and products. Therefore, updating the information about the company and its products is critical, as it seems to instill an image of a dynamic company. It is not hard to imagine an increase in customers' distrust if the information about the company or its products have a long time since their last update, leading customers to ponder the suitability of the company to satisfy a possible order.

Discounts and special offers is a functionality (usually an independent section of a website) where specific products are announced at a lower price or as a novelty. When the website infrastructure (whether modular or not) is well integrated, such products and their acquisition conditions can appear alongside the visited webpages (like "internal ads"), thus enhancing their visibility to the visitors. In spite of the fact that this functionality seems to serve well the purposes of increasing product visibility within a website, the obtained results evidence that it is not recognized as an "essential" feature (that somewhat reflects Reichhart, Pescher, & Spann, 2013), as it was perceived that a well-designed and detailed product catalog was a rather more important functionality. One of the reasons for such situation might be that this sort of item-promotion campaign is usually limited in time and promotion conditions are only valid during short periods. This situation imposes technical restrictions to this sort of item-promotion strategy, as websites like *PriceGrabber.com*, *Shopping.Yahoo.com* or *Shopzilla.com* (among many others) that keep an eye on product prices at dozens of stores, build their price indexes using web crawlers (an internet software that systematically browses the Web, typically for indexing purposes). Depending on the update time and frequency of the web crawlers, these indexing websites can miss an existing offer (for instance a weekend promotion sale vs. an update time of 48h for the indexes). Therefore, it seems advisable that managers consider that an item-promotion strategy may not be suitable within the online environment, especially regarding limited time offers and that the money spent with this functionality might not give a proper return in terms of sales enhancement.

Although literature presents *stock availability* (as the functionality feature that let customers know if there are products in stock, in transit or sold out) as being important for customers (Chaffey & Smith, 2008; Schuh, et al., 2009; Voss, 2000), results present no evidence to support their claim. This point seems to attest the idea that if a company discloses information about the unavailability of one or more items beforehand, it can directly redirect customers elsewhere (meaning a different seller or competitor). If a product is out of stock and the company gets an order, sales service can: contact the customer and inform him that the product might take longer to be delivered than expected; present product alternatives to the customer; propose a refund (if payment was performed); or to have the website engage the costumer by providing product alternatives, which the potential costumer would never have seen if the stock out information was given beforehand. The usual approach for doing this is presenting a list of their own products, based on a similarity approach. Nonetheless, the functionality that allows a comparison with other retailers could be rightly used here, allowing a website to serve as a web indexing service itself (which can enhance the number of visitors, as well the length of the visit), but also to get other alternatives such as buying second hand products.

Although the *product comparison* functionality could enhance a collaboration network that would benefit both companies (as they can get higher revenues while helping managers to reduce storage costs and or losses in unsold products – impairment losses on inventories, for instance) and customers (as it can enhance their buying experience and loyalty to a specific website), making it expectable to be an "essential" one (as stated in Rodrigues, 2002), this situation was not confirmed. The explanation for this, perhaps, is the possibility of substituting such functionality by simply displaying multiple web pages (from one or from multiple online sellers after consulting a web shopping indexing service), using several windows or tabs of a common browser.

Despite obtained results, since modular products purchase (such as buying a computer by component assembly) was not specifically tested in the questionnaire, it might be premature to classify the *product configuration* functionality as "accessory". Although it makes sense when companies sell non-configurable products, the situation requires further research.

For many websites online publicity is another way to maximize their revenues. In order to make it interesting for any company to advertise in a website, the number of visitors and the time spent in their visits are important factors. So, visitors and time spent are key information elements that need to be demonstrated (to do so, there are many different tools/software that automatically gather such data, e.g., *Goggle Analytics*, *StatCounter*, *HubSpot*, *Chartbeat*, *KISSmetrics*, etc.). The *entertainment* functionalities are usually associated to online discounts. For instance, if someone achieves a certain score or the high score of their online game (only possible by prolonging their visit) he gets online credit or online discounts. In addition, the scores can easily be shared using common social networks (e.g. *Facebook, Twitter*, etc.). In spite of the fact that these functionalities, which are thought to appeal to new and returning visitors, while prolonging their visit, are valued, along with customizable web pages (Flavian, Guinaliu, & Gurrea, 2006; Massad, et al., 2006; Schuh, et al., 2009; Singh, 2002), the obtained results provide evidence that online buyers assume that they are merely "accessory", bearing little influence on supporting the buying process.

In spite of all of the above mentioned, "accessory" functionalities should not be viewed as irrelevant. Rather, if it is possible to make additional investments, "accessory" functionalities are desirable as a means of attracting visitors to the website, retaining them longer when visiting the website, reinforcing visual appearance, promoting cross-selling, positively influencing impulse buying (Jeffrey & Hodge, 2007), or even implementing an advertising-supported web presence (Chen & Teng, 2013).

All these results are not, however, free of limitations and its generalization should not be carried out lightly, regardless of the performed sampling adequacy tests. In spite of the fact that a website that uses the all available functionalities is suitable to support online sales of any kind of physical good (e.g. books, printer, cars, diamonds, etc.), having the sample solely encompassed by higher education teachers in Portugal, as representatives of experienced online buyers, could have determined that the list of "essential" functionalities only applies to the generality of "common" online buyers (do higher education teachers in Portugal usually buy diamonds online?).

FUTURE RESEARCH

Future research is needed/planned to verify if the obtained list of functionalities would still apply to specific markets (such as luxury goods, for instance). As the results reflect the Portuguese case, the next step is to determine whether they still stand in specific markets, regarding European Union countries, using a similar approach.

CONCLUSION

This study identified "essential" functionalities (grouped in four distinct sets) that should be implemented in commercial internet presences. This finding seems extremely relevant, as it can serve as a benchmark for companies that want to go into the online business or for those who already have a commercial internet presence.

Although many online companies try to provide all available functionalities on their websites to attract customers, the obtained results provide evidence that such situation would mean to invest money in features that are not primarily valued by the users. The determination of valued functionalities within a buying process allows managers to be more cost-effective when managing financial resources to acquire or develop solutions for their commercial websites, helping companies to understand better how to build and keep online businesses. In this way, this research demonstrated that existing literature does offer the basis to actually support decision-making in practice settings.

As a corollary, results show that if there are budget constraints, especially regarding website maintenance and development, companies should focus on the implementation of the "essential" functionalities first. On other words, if the "essential" functionalities are not present, customers' distrust gets higher, thus affecting their shopping intentions. Later on, if it is possible to make additional investments, "accessory" functionalities are desirable to enhance the web presence.

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KEY TERMS AND DEFINITIONS

Accessory: Quality of something nonessential but desirable that contributes to an effect or result.

Commercial: An activity embracing all forms of the purchase and sale of goods and services.

Essential: Quality of being absolutely necessary or indispensable.

Functionality: A piece of software, which provides the ability to interact with a computer mediated environment.

Online: Anything which is accessible via a computer or computer network.

Perception: The act or faculty of apprehending by means of the senses or the mind.

Transactional: A personal interaction involving people or a software mediated communication.

APPENDIX: QUESTIONNAIRE

Table 12.

Gender *Male* ☐ *Female* ☐	**Age (years)** *<= 35* ☐ *36-45* ☐ *46-55* ☐ *56-65* ☐ *+65* ☐	**Scale of importance:** *Irrelevant*: **1** *Very small importance*: **2** *Small importance*: **3** *Neutral*: **4** *Important*: **5** *Very important*: **6** *Crucial (its inexistence inhibits the purchase)*: **7**						
PRODUCT AND PRICE		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Product catalog: *Presents information regarding the name, brand, category, description, price, product illustration, duration of offers, duration of a contract, special discounts/offers, scope of delivery, and an introduction to new products*								
Detailed product catalog: *It is an extension of the previous functionality, encompassing the information about weight, size, audio examples, special delivery requirements, spare parts, accessories, place of manufacture, warranty information, assembly and usage information, installation instructions, product-related insurances, product-related support, information on maintenance, information and direction for use, certificate or seal of quality and types of packaging (e.g. gift wrap)*								
Product configuration: *Configures a modular product*								
Product comparison: *Makes a "side-by-side" comparison of a particular product over selected others*								
Product recommendation: *A counseling feature based on promotions, news, viewing history, etc.*								
Navigation: *Allow selecting by: price, brand, weight, size, category, novelties, best ratings, bestsellers, etc.*								
Availability check: *Check for stock availability when browsing the products*								
Display of alternative products: *Shows alternative products when selecting a product*								
Download of test products: *Downloads test items (in case of books, software, etc.)*								
Product advertisement: *Displays new products, novelties or featured products*								
Product Newsletters: *Periodically informs subscribed customers*								
Third-parties recommendation: *Sends emails with web page URLs or selected product descriptions*								
Product RSS Feed: *Publishes frequently updated information, such as news, audio, video*								
Product Frequently Asked Questions (FAQs): *Exhibits FAQs and their answers*								
COMPANY		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Information about the company: *Shows address, phone number, and location.*								
General terms and conditions: *Exhibits legal conditions of sale between the company and the customer*								
Company advertisement: *Displays novelties about the company*								
Company Newsletter: *Periodically informs subscribed customers*								
RSS-Feed: *Publishes frequently updated information, such as news, audio, video*								
Company Frequently Asked Questions (FAQs): *Exhibits FAQs and their answers*								
ENTERTAINMENT		**1**	**2**	**3**	**4**	**5**	**6**	**7**
Sweepstakes: *Implements sweepstakes for registered users*								
Competitions: *Implements competitions for registered users*								
E-cards: *Sends e-cards*								

continued on following page

Table 12. Continued

Online games: *Implements online games*							
ORDER	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Pre-sales information: *Exhibits order methods, order steps, required user data, supported languages, contract of purchase, technical features to correct typing errors, security mechanisms and policy of returns*							
Electronic shopping cart: *Registers selected products to include in an order*							
Submission and adaption of consumer data: *Allows to enter and change an user's data*							
Order availability check: *Check for stock availability when placing an order*							
Billing: *Provides electronic billing*							
Cancelation of orders: *Cancels a previously completed order process*							
Second purchase delivery method: *Registers previous addresses and suggests them in posterior orders*							
Reservations: *Makes product reservations*							
Service appointments: *Registers service appointments*							
ORDER PROCESSING	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Order confirmation: *Confirms the order of selected products*							
Delivery confirmation: *Informs costumers of order delivery*							
Order status (tracking): *Allows to check on the status of any order (from ordered to delivered)*							
Estimated delivery date: *Provides a costumer the information on the expected date of delivery*							
Complaints status: A*llows customers to consult, at any time, the status of registered complaints*							
Initiation of returns: *Informs that a return process was initiated*							
DELIVERY	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Pre-delivery information: S*ets or provides information on delivery time, delivery insurance, delivery cost, method of delivery, countries delivery to, available transport packaging, and secure delivery*							
Delivery of digital goods: *This item refers to the feature that allow the company to deliver digital goods;*							
Method of delivery: A*llows downloading digital goods*							
Estimated delivery time: *Provides the expected amount of time for a delivery*							
Place of delivery: *Register the delivery place, if other than the billing address*							
PAYMENT	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Pre-payment information: *Refers to the existence of information about payment, accepted payment methods and the existence of secure payments*							
Credit card payment: *Allows to use a credit card as a means of payment*							
PayPal payment: *Allows to set PayPal as a means of payment*							
PaySafecard payment: *Allows to set PaySafecard as a means of payment*							
Bank Collection Payment: *Allows to set a bank collection as a means of payment*							
Money transfer payment: *Allows to set a bank transfer as a means of payment*							
Mobile payment: *Implements specific solutions for mobile payments (e.g. smartphones and tablets)*							
Cash at pick-up payment: *Allows to set the payment upon delivery*							
Vouchers, discounts, returns, and coupons consideration: *Implements the possibility for processing online discounts at payment time*							

continued on following page

Table 12. Continued

CONTACT	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Contact information: *Includes information about fax, e-mail, phone, VoIP, instant messenger and postal address of the company*							
Forum: *Implements discussion forums between registered users in the website*							
Contact form (feedback, support): *Includes online forms for returns, maintenance and requests*							
Complaint form: *Includes online forms for complaints*							
INTERACTION/CONSUMER SUPPORT	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Interaction and support: *contains service related functionalities (like remote diagnosis and remote maintenance as well as warranty status and repair status requests), chatbots and wishlists*							