

Quantitative Assessment of Football Web Sites: An Empirical Study of the Best European Football Club

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Received October 1st, 2009; revised November 12th, 2009; accepted December 20th, 2009.

ABSTRACT

Football and the Internet have shown early signs of a prosperous marriage. Web sites with football content are among the most popular, with football followers and web users sharing remarkably similar demographics. Despite these compelling observations, limited empirical research has been undertaken exploring how to maximise the opportunities for competitive advantage that the Internet can provide to football clubs. This research was a response to this void, and was undertaken by manually accessing and evaluating the web sites of European Football Clubs. Quality of web sites was determined using an original Web Assessment Index, which focuses on four categories: accessibility, speed, navigability and content. A detailed report of the results arising from this investigation is presented and systematically analyzed. These findings will be useful for both researchers and practitioners who seek to understand the issues relevant to football club management.

Keywords: World Wide Web, Football, Content Analysis, Web Design, Internet, Research Paper

1. Introduction

The number of Internet users has grown significantly over the last few years, from virtually nothing to an estimated 1.04 billion users that are 16% of the world's population. This rapid growth in the number of Internet users has promoted a belief in many business circles that the Web represents a huge marketing opportunity.

1) With increasing interest in the Internet's role for business marketing, sport marketers throughout the world and at all levels of the sport industry are rapidly working to incorporate emerging technologies into their marketing strategies. Not surprisingly, the Internet has become a significant marketing tool for many sport organisations, including professional sports teams.

2) The same market forces do not drive European Football Clubs websites as most other sectors. They have a loyal fan base that they can rely upon. They are able to provide a lot of exclusive content that can't be found elsewhere. And they have brand names easily recognisable, in many cases, worldwide. Despite these apparent advantages, each club website should not be seen as operating in a vacuum. Whilst the temptation must be to consider that official club websites operate in an uncompetitive marketplace, there are authorita-

tive and comprehensive websites from newspapers and TV channel and others, including "unofficial" fan websites, that provide alternatives for users to turn to. So, loyalty to one team should not be confused with loyalty to the team's official website.

The results of our survey should be considered within this broader context. Whilst the clubs doubtless enjoy large volumes of traffic, and many successful transactions, there is clear scope for improvement. European Clubs benefit from their high profile brands with regards to the large numbers of incoming links that boost their website's visibility. Clubs will doubtless be able to boast of large numbers of visits originating from search engines. This appears to owe more to their brand name or unique offerings than to any clear evidence of optimisation on their sites. Yet, clubs should not feel that they should rely only on their successful brands. As good as this sector's visibility is, there are still steps that could be taken by the majority of the clubs to improve that. And any improvement in visibility should ultimately result in increased revenue streams.

This research evaluated the current practice of European Football Clubs, assessing the effectiveness of their web sites. For this, we develop a web site assessment

index that can be employed to compare the current usage of the Internet by football clubs. We begin by identifying the main factors considered as determinants of web site quality, as mentioned in previous studies. Secondly we discuss the design of the web assessment index. Then, web sites of most popular European Football Leagues are subsequently analyzed using this index. Finally, the main results of this analysis are discussed and future research directions are outlined.

2. Web Sites Assessment Tool

The quality of a user's visit to a website is not simply determined by the strength of content on that website. The way a website is constructed and maintained can have a positive or negative impact on that experience. Most website visitors have a specific task in mind when they arrive at a website. Placing obstacles in their way from completing those tasks can lead to frustration, and consequently to website abandonment and undermine brand reputation.

Evaluating the performance of web sites has been a constant concern of researchers in different fields. A review of the recent literature on web site assessment reveals some attempts to measure web site quality [1–9].

Some researchers have tried to provide ways of evaluating web sites specifically [10,11]. Most of the previous approaches have focused either on basic management content or a specific set of web site outcomes, using subjective factors, such as easy-access, text clearness, presentation quality, attractiveness of colours, sounds, etc. To minimize this subjectivity site evaluators should be given precise guidelines to rate each factor and a large group of evaluators is needed [4].

Trying to avoid the main weaknesses of previous models [12] developed a new web site assessment index that can be employed to compare the current use of the Internet by different organizations. This model has been previously employed to compare the Internet usage from the 200 largest Spanish companies [13] and more recently applied to Spanish banks [14].

According to Evans and King [4], a web assessment tool must have five main components: categories, factors, weights, ratings and total score. The first step is to choose the categories and factors that are critical to web site effectiveness. Our instrument for evaluating Football Club web sites (Web Assessment Index or WAI) selects four broad categories as the basis for a quality web site: accessibility, speed, navigability and site content (**Figure 1**).

The key factors within each category are chosen based on the literature and the researchers' experience, and must reflect what users are generally considered to be important components and features of web sites.

The first category in the WAI is accessibility. It is clear that the quality of a web site is increased if the site

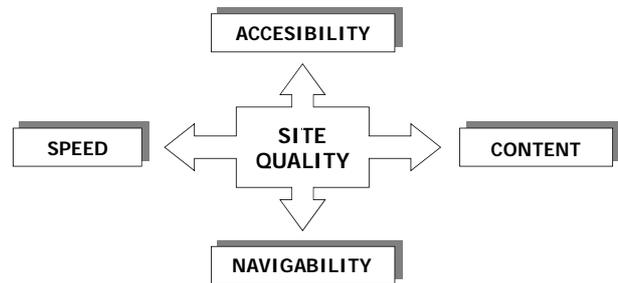


Figure 1. Web site quality assessment model

is easily identifiable and accessible to the users. However, merely counting “hits” on a page is not an accurate measurement of quality or success of a web site [15]. In order to actually evaluate the accessibility of a web site, we need to define objective measurable quantities. Therefore, the authors have employed two indicators to measure this category: search engines presence and link popularity.

1) Higher search engines rankings translate into greater traffic to the site and therefore, increase its degree of accessibility. Search engines are responsible for generating approximately 80% of new visitors to the majority of websites. Appearing in the top results for the most appropriate phrases is key to maximizing the benefit derived from the search engines. In the present work, to evaluate this factor we have chosen Google, because this search engine is the most frequently used by internet users.

2) The second indicator used to measure accessibility is the sitepopularity. The most common measure of web performance is the number of “hits” a site generates. However, there is accuracy problems associated with this type of measurement, because there are some methods to artificially increase the number of hits. Therefore, the total number of hits does not necessarily correspond to the actual number of visits to the site.

Taking this into account, we decided to employ a different kind of measurement: we defined link popularity as the number of external links on the web that point to the web site being analyzed. The advantages of a large number of links to a site are evident: firstly, the more sites that link to you, the more traffic you can expect to receive, and secondly, major search engines will improve your page ranking when you have more links to your web site [13]. For example, Google uses link popularity as the most important factor when ranking sites, so if you want to have a successful web site, you must have high link popularity. In this study we have used the Link Popularity Check, a freeware program that checks the link popularity status of a web site on several search engines and compares it to other web sites on the Internet.

Access speed and response time are obviously very significant, because time is always a critical factor. Some studies have revealed that there is a significant correla-

tion between web site download speed and web user satisfaction [16,17]. The time it takes for a page to download is important for making it easily accessible to every user interested in accessing online services.

The access speed has been measured with a chronometer, but this recording is influenced by a great number of factors such as hardware employed, connection time, web traffic etc. In order to minimize these sources of error, the tests were carried out at the same time with the same computer. Web browsing was undertaken by using the most popular browser, Internet Explorer 6.0. The sites were repeatedly accessed on consecutive days to obtain more representative average speed measurements.

The third category in our index is what we call navigability. Poor web design will result in a loss of potential sales due to users being unable to find what they want, and a loss of potential repeated visits due to an initial negative experience. Given that users should never feel lost, each page should be self-sufficient and provide links to the main contents. In terms of navigation, our analysis focused on the consistency of the navigation style. Navigation bars should be present on every website, in order to allow quick access through the entire site, particularly for those web sites with large amounts of content. So, the hallmark of a good site is that the site index should always be on display, thereby making it very easy for anybody to reach the desired location fast enough. So, following the research of Miranda *et al.* [14], the factors used to assess this category are the following:

1) Permanent site menu allowing a rapid access to the different sections from every page.

2) Web site map, for users to locate available interesting items within the company home page.

3) Keyword search option.

Content is a critical component of any website. No matter how technologically advanced a website's features, if its content is not current or if the information provided is not correct, then it is not fulfilling its purpose. The content quality of the web site will be measured assessing the presence of information relevant to the users. A site must have contents that satisfy users' needs and it should be frequently updated. Football Clubs web sites can contain various features, including tickets information, history, events, online shop, etc.

Important information should be immediately accessible. If 80% of your users are seeking 20% of your information, then that information should be the most visible and the easiest accessible. Basic contact information of the organization should be on the main menu page and related information should be grouped together rather than scattered in different sections of the site.

The factors selected to quantify content quality were based on site contents identified in previous studies [6,7, 12–14] practitioner journals and the researchers' experi-

ence. Our methodology for evaluating football clubs web sites includes such components; however, we have added some additional factors. We have considered three sets of factors to assess the content of a web site using a binary no/yes scale:

1) *Informational factors*.-Providing online information to potential users is the most important part of an effective football club website. So, football club sites are largely informational. We have considered the following informational factors:

- Club History
- Corporate Identity
- Seasonal tickets information
- Shop Information
- Restaurant information
- Events information
- Travel information
- News
- External links
- Corporate Information
- Prices information
- Languages
- Organizational structure

2) *Transactional factors*.-A critical component of football club site is the provision of services online. These options operate under a secure server, which means that information therein is protected once you have logged in.

So, the Football clubs content features that are found in each of the searched web sites can be included in the following categories:

- Tickets online
- Online shop (merchandising)

3) *Communicational factors*.-Given that web sites are often entry points to the football club, visitors typically want to obtain access to information about the football club, contact information for the club should be on the main menu page and therefore easily accessible. More broadened contact information is a benefit for users. In order to evaluate the communicational capacity of each web site we identified whether the site contains the following items:

- Complaints and comments e-mail
- Telephone
- Users feedback tools (e-mail bulletin)
- Reserved area

To ensure reliability, each Football Club Web site was assessed by two evaluators, and in those cases where significant variations (over or under 10%) were shown on the raw score between evaluators, websites were analyzed a third time.

After defining them, all the categories and factors were weighted (based on a total of 100 points). These weightings have been assigned from the analysis of previous studies [4,8,12–14] and have taken into account the views of different Internet expert users. Moreover, to

ensure the reliability of this assignment, 10 web sites users were recruited as evaluators. Each web site user provided the relative importance of the different categories in the instrument. First, users distributed 100 points among the 4 major categories. A Delphi analysis allowed us to establish the final list of items and their weights.

The use of these subjective weightings may be considered as the main limitation of our study; however, some recent studies [14] have employed similar weightings. Mean values of the weights obtained for the different categories and subcategories of Football club sites are shown in **Table 1**.

3. Football Club Web Sites Assessment

We have assessed the 76 best Football Club in the 4 more important leagues in Europe: Premier (England), LFP (Spain), Calcio (Italy) and Portuguese League (Portugal). These leagues are not only ranked within the top five European football leagues from a point of view of performance on the field, but are also widely considered to be the most businesslike football leagues in the world. This research evaluated the official Web sites of each Football club selected in their native languages in September of 2008. **Table 2** is a list of the Football clubs selected.

According to the WAI, the best web sites correspond

Table 1. Web assessment index

CATEGORIES	Weights	CATEGORIES	Weights
ACCESSIBILITY	15%	NAVIGABILITY	15%
Presence in search engines		Site map	
Popularity		Permanent site menu	
SPEED	15%	Keyword search option	
Access speed (in seconds)			
CONTENTS QUALITY	55%		
Informational content	18,33%	Transactional content	18,33%
Club History		Online Shop	
Corporate Identity		Tickets online	
Corporate Information			
Events information			
External links			
Languages			
News		Communic. content	18,33%
Organizational structure		Complaints and comments e-mail	
Prices information		Reserved area	
Restaurant information		Telephone	
Seasonal tickets information		Users feedback tools	
Shop Information			
Travel information			
Club History			
Corporate Identity			
Corporate Information			
Events information			
External links			
TOTAL		100	

to Lazio (Italy) and Chelsea (England), followed by two Spanish clubs Ath. Bilbao and Barcelona. However, the most valuable output from our study is not the ability to identify the best sites, but to see how each Football club site is compared to related sites and to spot ideas and practices that can improve these sites.

Table 3 shows an outline of the results derived from the study for European Football clubs (according to WAI). The main overall results, grouped by categories (accessibility, speed, navigability and site content), are summarized and discussed in the following sections.

Figure 2 shows the average score by country. England Football club have higher WAI values compared to the rest, although the difference is not highly significative.

Table 2. List of football club analyzed

Spain	Italy	Portugal	England
Almeria F.C.	Atalanta	Académica Coimbra	Arsenal
Athletic de Bilbao	Cagliari	Beleneses	Aston Villa
Atlético de Madrid	Catania	Benfica	Black Bum Rover
Barcelona	Empoli	Boa Vista	Bolton Wanderers
Betis	Fiorentina	CD Nacional Madeira	Chelsea
C.D. Osasuna	Genoa	Estrela Amadora	Everton
Depor. de la Coruña	Inter de Milán	Leixoes	Fulham
Espanyol	Juventus	Marítimo	Hull City
Getafe	Lazio	Naval F.C.	Liverpool
Numancia	Livorno	O Porto	Manchester City
Racing de Santander	Milán	Pacos Ferreira	Manchester United
Real Madrid	Napoli	Setúbal	Middlesbrough
Recreat. de Huelva	Palermo	Sporting de Braga	NewCastle United
Sevilla F.C.	Parma	Sporting de Lisboa	Portsmouth
Sporting de Gijón	Reggina	Uniao Lira	Stoke City
U.D. Mallorca	Roma	Victoria Guimares	Sunderland
U. D. Levante	Sampdoria		Tottenham H.
Valencia	Siena		West Bromwich
Valladolid	Torino		West Ham
Villarreal	Udinese		Wigan Athletic

a. Sample of a Table footnote. (Table footnote)

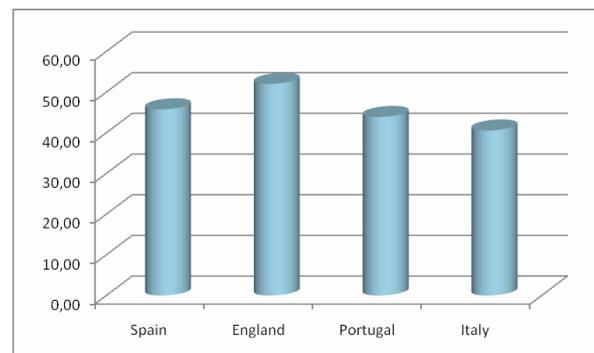


Figure 2. WAI values by country

Table 3. WAI values for European football clubs

Club	WAI	Accessability	Speed	Navegability	Content
Lazio	73,16	53,21	66,667	66,67	82,14
Chelsea	70,48	63,51	20,000	100,00	78,10
Athletic de Bilbao	66,87	51,45	70,000	100,00	61,19
Barcelona	65,09	46,08	35,897	33,33	86,90
Sunderland	64,36	28,73	41,176	66,67	79,76
Getafe	64,19	25,91	41,176	66,67	80,24
Bolton Wanderers	64,18	51,47	17,284	66,67	79,76
Atlético de Madrid	63,48	52,25	37,838	100,00	63,57
Liverpool	62,47	49,30	36,842	66,67	71,90
Cagliari	60,79	26,66	50,000	66,67	71,43
Manchester United	58,94	75,55	33,333	66,67	59,29
West Bromwich Albion	57,39	51,27	24,561	66,67	65,48
Hull City	56,99	25,97	34,146	66,67	69,05
Real Madrid	56,21	57,27	43,750	100,00	47,38
Aston Villa	56,00	52,32	8,284	33,33	76,19
Arsenal	55,33	66,39	43,750	66,67	52,38
Inter de Milán	55,11	66,99	45,161	66,67	51,43
Beleneses	53,10	50,53	73,684	33,33	53,57
Sporting de Lisboa	53,04	52,77	73,684	33,33	52,86
Atalanta	52,39	51,37	30,435	66,67	54,76
Sporting de Braga	52,30	50,70	24,561	33,33	65,48
Benfica	52,22	53,39	51,852	33,33	57,14
Victoria Guimares	51,64	0,59	32,558	66,67	66,67
O Porto	51,47	54,09	63,636	33,33	52,38
Wigan Athletic	50,05	26,57	20,588	33,33	69,05
Sevilla F.C.	49,90	54,26	45,161	33,33	54,52
Manchester City	49,59	57,12	63,636	66,67	39,05
Boa Vista	49,02	50,58	20,290	33,33	60,71
Black Burn Rover	47,77	51,80	29,787	66,67	46,43
Valencia	47,51	54,77	63,636	33,33	45,00
Sampdoria	47,22	52,10	28,571	33,33	54,76
Unión Deportiva Levante	45,79	50,25	23,333	66,67	45,00
West Ham	45,05	55,31	21,212	66,67	42,86
Juventus	44,57	57,04	58,333	33,33	40,48
Almeria F.C.	44,53	25,57	73,684	66,67	35,71
Villarreal	44,45	51,68	35,000	33,33	48,10
Stoke City	44,19	13,65	22,222	66,67	52,38
Fulham	44,13	53,67	25,455	66,67	40,48
Portsmouth	44,04	26,95	13,333	33,33	60,00
Milán	43,89	26,56	37,838	66,67	44,05
Middlesbrough	43,83	26,83	19,718	66,67	48,81
Everton	43,27	60,00	17,722	66,67	39,29
Tottenham H.	41,76	30,28	40,000	66,67	38,57
Sporting de Gijón	41,37	50,19	28,000	66,67	35,71
Deportivo de la Coruña	40,90	27,14	53,846	100,00	25,00
NewCastle United	40,84	52,87	18,421	33,33	45,71
Racing de Santander	40,75	25,11	50,000	33,33	44,52
Torino	40,60	52,47	20,588	66,67	35,71
Numancia	40,56	50,55	22,222	66,67	35,71
Florentina	39,94	51,18	33,333	33,33	40,48
Valladolid	39,57	25,95	9,655	66,67	44,05
C.D. Osasuna	39,43	51,89	46,667	33,33	35,71
Reggina	39,35	51,42	29,167	33,33	40,48
Siena	38,80	51,14	100,000	33,33	20,24
Uniao Lira	38,52	50,24	46,667	33,33	34,52
Udinese	38,49	51,77	35,000	100,00	19,05
Roma	38,02	100,00	15,385	33,33	28,57
Marítimo	37,48	0,66	29,787	66,67	41,67
Leixoes	37,47	50,20	42,424	0,00	42,86
Betis	36,66	51,95	50,000	33,33	29,76
Empoli	35,71	50,90	14,141	33,33	38,10
Estrela Amadora	34,32	50,13	31,818	33,33	30,95
Palermo	33,33	27,89	51,852	33,33	29,76
Recreativo de Huelva	32,00	50,89	63,636	33,33	17,86
Livorno	31,91	1,79	46,667	33,33	35,71
Académica Coimbra	30,91	0,62	41,176	33,33	35,71
U.D. Mallorca	29,33	51,08	26,415	33,33	23,10
C.D. Nacional Madeira	29,17	0,03	38,889	33,33	33,33
Genoa	27,12	51,16	4,651	33,33	25,00
Espanyol	26,90	51,85	40,000	33,33	14,76
Napoli	25,86	13,71	20,588	33,33	28,57
Parma	24,36	25,78	37,838	33,33	17,86
Catania	21,11	13,16	20,000	33,33	20,24

a. Each factor was measured on a 1-100 scale.

3.1 Accessibility

Overall website visibility for this sector is good. The biggest factor in this success is the number of incoming links to the websites. For the majority of websites these are high and this sector's average number of incoming links exceeds the average across the internet as a whole. These links will help to drive traffic to the website, act as

an endorsement and boost brand reputation, and help to improve search engine performance. There are pros and cons to having multiple domain names, as a majority of the clubs does, however one of the drawbacks is that by not having all the incoming links pointing at a single domain name, it dilutes the positive effect that they have on search engine performance.

Given that clubs achieve better profit margins selling their merchandise directly, it is surprising not to see more evidence of optimization despite the relatively strong showing by some of the clubs in the search engines. Roma and Manchester United show the greater values in this category.

3.2 Speed

Typically, those sites whose pages fully loaded quickly were also easily navigable. The term speed is often used synonymously as data rate in networking. Technically speaking, speed refers to the user-perceived performance of the network application.

Siena, Sporting de Lisboa, Almeria and Beleneses were the sites that received the highest possible rating in this area. The range of values measured varied from 4 to 100 seconds.

Football websites are as likely to be browsed at home as at work. This is a difficult issue to resolve, as website visitors doubtless want to see images of the team, players and matches, whilst the clubs want to harness the popularity of their websites to place advertising. A large number of websites employ pop-up windows for advertising. Use of popup windows are generally considered to be poor practice from a usability point of view, as they tend to irritate users reducing the download speed and with pop-up blockers becoming more common, the effectiveness of this approach is also open to question. So, more consideration of connection speed may provide a better user experience for website visitors.

3.3 Navigability

We assessed how easy it was to navigate around the site, to return to the home page or to find relevant information. Links to components within the site should be available from every page and the security must be appropriate for the interactions conducted at the site [4].

Given the size of the websites, and the amount of content available on them, it is disappointing to report a shortage of alternative navigation options. Almost 96% of the sites provided a permanent menu but only 42% of the web websites have an internal search engine. Additionally, only 15% have a site map.

Four Spanish clubs, Athletic de Bilbao, Deportivo de la Coruña, Real Madrid, Atlético de Madrid, with Udinese (Italy) and Chelsea (England) achieved the higher rates in this category.

3.4 Site Content

Site content has been assessed by considering the relevant information that must appear in a Football club site according to the needs of potential users. Barcelona, Lazio and Getafe achieved the higher rates in this category.

External links, Club History and News are included in almost all web sites analyzed (see **Figure 3**). Only 53,42 % offer seasonal tickets information.

Gaining the ability to communicate with new international audiences in their own language will boost sales and create awareness of a brand, service or product. With every language added to a Web site, there is the potential for an increase of more than 100% in sales.

Much has been made of football clubs attempting to promote themselves worldwide, and with players coming from all over the world to play for their clubs, interest in the European Football Leagues has never been greater. Therefore, it can be seen as a missed opportunity that relatively few websites (30%) currently offer content limited or otherwise in another language.

However Clubs like Barcelona, Milán, Chelsea, Inter, Manchester United, Sevilla F. C., Real Madrid, Valencia and Manchester City deserve a special mention, for providing content in several languages, including Chinese and Japanese.

With respect to the transactional content features that are found in each of the searched web sites, the most interesting area involves using the Internet to facilitate users online tickets. Only 13,7% Football Clubs offer this option. And only 46% include an online shop to buy merchandising articles.

Finally, with respect to communicational factors, most sites provide an e-mail for complaints and comments (75,3%) and a contact telephone number (80,82%), with only about 17,8% of them providing an e-mail bulletin.

One change we have noticed is the increased use of password protected online areas that provide information to register users (47,9%). Making users register might

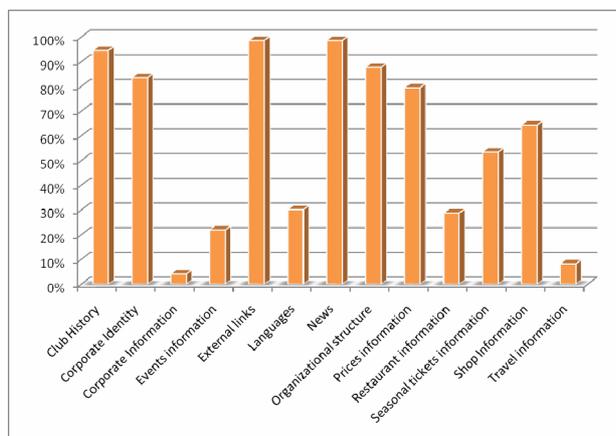


Figure 2. Informational content

not be a huge issue to those clubs concentrating on their traditional fan base, but for those clubs looking to attract new audiences – for instance from abroad – this approach could also have a negative impact on their brand, affect customer acquisition and ultimately merchandise sales. It is also worth noting that the registration forms for most of these websites are also quite long and detailed.

4. Discussion and Conclusions

The web environment offers Football Clubs the opportunity to deliver information and services, to enhance communication to and among its stakeholder groups.

This paper proposes and tests a model, the Web Assessment Index (WAI), for evaluating the potential of Football Club web sites, allowing researchers and managers to compare attributes and components of Internet sites, in order to determine the drawbacks and opportunities.

Although the quality of content generally cannot be faulted, the quality of user experience could be improved. Fans having to wait for pages to load, not so much because of pictures of the team, but because of adverts, are entitled to feel frustrated. Website abandonment must still be a factor on these websites, as well as perhaps generating negative feelings towards the brand. Some home pages, for example could take as long as a minute or more to fully load on a standard connection.

For some websites, advertising can take up as much as a third of the screen. And with space for navigation, content sometimes seems squeezed into the middle, almost as an afterthought.

The main challenge in the elaboration of the index was to avoid subjective factors, which have been predominant in previous assessment tools. Our index is based on four broad categories: site content, speed, accessibility and navigability which are quantified in an objective and logical way. The results of the application of this index to the analysis of Football Club web sites have demonstrated the high flexibility of the WAI and have detected the main weaknesses of the web pages assessed.

It is worth noting that there are several limitations for this analysis. Firstly, all the data in the survey was collected from a limited number of visits to each site at a certain time, despite the fact that the web is a highly dynamic and changeable medium. Similar studies at different times are likely to show different results. Such an evaluation over time will also shed some light on whether there is a divergence or convergence of web activities.

In addition, it is prudent to note that differences in club structures, culture, financial circumstances and indeed sporting codes, mean that the results are not necessarily generalisable to every club, or indeed to the wider European Football industry. Nevertheless, every effort has been made to include league-based comparisons in order to identify any differences.

A second concern was the subjective nature of factors weightings, which although are based on the results of previous studies and personal interviews with Internet experts.

Nevertheless, the strength of this study lies in its foundation for future research: Having identified the critical categories and factors in the WAI, the next stage is to test this tool in different contexts and measure the relationship between the index value and organizational success. Further research in this important area is currently under way.

Evaluators can use this instrument easily without specific training or knowledge and, besides, the evaluation time is lower than in other assessment models [11].

As further information on web design and usability methods becomes available, the assessment index presented here can be refined into an empirically validated toolkit for the design of functional corporate sites. The proposed index constitutes a suitable method for evaluating web sites and making a comprehensive analysis of the usage of the new medium.

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