

WEB SITE EFFECTIVENESS OF
THE 2016 SUMMER OLYMPIC AND PARALYMPIC GAMES'
CANDIDATE CITIES

A Thesis

by

SANG UK JOO

Submitted to the Office of Graduate Studies of
State University of New York College at Cortland
in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

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ABSTRACT

Web site effectiveness of
the 2016 Summer Olympic and Paralympic Games' candidate cities

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This study focuses on the Web site effectiveness of the 2016 Olympic and Paralympic Games' four candidate cities: Chicago, Madrid, Rio de Janeiro, and Tokyo. The balanced scorecard approach is used to assess the effectiveness of the Web sites and the effective Web site is explained by two aspects: whether the Web site is mechanically structured and whether it is sufficiently informative. The research results reveal that there is considerable room for enhancing Web site effectiveness and the candidate cities need to have more concerns for well-structured and informative Web sites.

To make the Web sites more effective, practical recommendations are made. Chicago needs to examine its Web site for mechanical problems and balanced information weight among the different languages. With regard to Madrid's Web site, more sufficient and well-organized contents about the games are recommended. Additional links for relevant sources are suggested for Rio de Janeiro's Web site. Finally, with respect to the Tokyo's Web site, practical regional information and simplicity of Web site design are suggested.

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CHAPTER I: INTRODUCTION

The Internet is the specific name of the communication network that is comprised of millions of interconnected computers that freely exchange information with each other worldwide (Burnett & Marshall, 2003). There is little doubt on this fact that the Internet is one of the most profound inventions in human history. The Internet is quickly becoming the world's information superhighway, connecting people and business all over the world, and enabling them to share ideas and information (Senn, 2003). It has changed the way we live in society and the way we communicate with each other. For these reasons, one would say that we live in a society where information and knowledge are essential and valuable resources. In addition, this society has been referred to as the 'Information Age' since 1957, in which the majority of people are involved in the creation, distribution, and application of information (Senn, 2003). In this society called the 'Information Age', the Internet is strongly linked not only in many businesses, but also in many parts of our everyday lives.

We can communicate with people anywhere in the world, retrieve a broad range of data and information, and even trade anything we want on the Internet. Since the 1990s, in which Internet providers began their service for public Internet users, the world Internet users have dramatically increased and are continuing to do so. According to Nielsen (2005), approximately more than one billion people access the Internet all over the world. Moreover, another billion people will probably be added to the total amount of Internet users by 2015. In addition, the Internet extends and incredibly changes our

media connections with the rest of the world because it gives us vertical access to potentially unlimited and individually created and chosen information, interpretation, and entertainment (Coakley, 2006). In other words, there is no other communication channel like the Internet with the potential of reaching such an enormous number of people (So & Morrison, 2004).

Generally, we use the terms television audience, radio audience, and even newspaper audience in order to indicate the people ‘using’ each medium. However, ‘Internet user’ is generally a term being used to indicate the people who interact with the Internet to view, retrieve, or submit content. Unlike any other media predecessors, such as the television, the radio, and the newspaper, the Internet has very unique features. First and foremost, the Internet is unique in that it allows us to access variously created media content on our own time at our own pace (Coakley, 2006). Moreover, two-way interactivity, on-demand availability, and customization are also unique features the Internet has (So & Morrison, 2004).

The importance of the Internet and World Wide Web (WWW) in the business field has continuously increased recently. In the information age, the Internet is more than just a communications medium and new distribution channel (So & Morrison, 2004). The Internet is a global phenomenon. To understand the Internet as a global phenomenon we need to take a look at how the World Wide Web works. The World Wide Web, known as simply the Web, is a set of interconnected electronic documents called Web pages, which are linked together over the Internet, and a Web site is a collection of Web pages (Senn, 2003). The Web enables the spread of information over

the Internet through an easy-to-use and flexible format. As mentioned above, the Web has changed the way we live in society and the way we communicate with each other. In addition to having a great influence on people in diverse fields, the Web has provided organizations with additional opportunities to complete their own missions and to gain profit.

As we know, Web sites allow organizations to complete their own missions and to make profit without spending millions of dollars for traditional media platforms such as television, radio, and newspaper. Since Web sites have been utilized and applied to diverse fields, tons of money has been spent to develop and maintain Web sites, but it is not as much as they need for traditional media platforms. For this reason, it is a great opportunity for organizations that do not have enough resources to support themselves and for non-profit organizations that do not aim to make a profit to allow them to connect to people.

To harness the performance and effectiveness of the Web site, people and organizations need to know if their Web site is going well. Since the mid 1990s, diverse efforts to evaluate the performing effectiveness of Web sites have been performed by practitioners and academics. However, compared to other measurement reports relating to any traditional media platforms, such as television, radio, and newspaper, Web site ones are not sufficient enough. In this study, the Balanced Scorecard (BSC) approach is applied to evaluate Web sites' performance effectiveness relating to the Olympic and Paralympic Games. To evaluate Web sites by applying the BSC approach, we need to

think about what we are going to evaluate and how we can evaluate the effectiveness of the Web sites' performance and effectiveness.

Some people would not agree with the idea that the International Olympic Committee (IOC), International Paralympic Committee (IPC), National Olympic Committee (NOC), and National Paralympic Committees (NPC) are non-profit organizations. However, nobody would say clearly that they are profit-making organizations only aiming to make a profit. To determine whether an organization does aim to make a profit or not, we need to look at the interest and mission of an organization. The IOC is an international non-governmental non-profit organization and the creator of the Olympic Movement. The IOC exists to serve as an umbrella organization of the Olympic Movement (IOC, 2009a). The IPC is also an international non-profit organization formed and run by 162 NPCs and four disability-specific international sports federations (IOSDs) (IPC, 2009).

Effectively organized Web sites play a key role in running and managing non-profit organizations, such as the IOC, IPC, NOCs, and NPCs. When considering Olympic and Paralympic Games' common features - (a) quadrennial games, (b) limited media coverage, (c) extravagant television right fees, and (d) international organization - the effectiveness of the Web sites' performance is a critical factor deeply influencing the Olympic and Paralympic movement. For these reasons, the IOC, the IPC, and most NOCs and NPCs are running Web sites as well as four 2016 Summer Olympic and Paralympic candidate cities running their state-of-the-art Web sites.

For the 2008 Summer Olympic and Paralympic Games, China has spent a tremendous amount of money, with total spending expected to exceed \$40 billion (Bristow, 2008). Hosting the games is incredibly expensive, but why do cities want to host the Olympic and Paralympic Games? Why do many cities enter into competition for bidding on both games? The benefits from both games would be divided into tangible benefits; such as new facility construction and enhanced infrastructure, and intangible benefits; such as urban revival, business opportunities, increased employment, improved public welfare, greater tourist numbers and the golden prize, and becoming viewed internationally as a 'world class' city (Alexander, 2005).

The four candidate cities (Chicago, Madrid, Rio de Janeiro, Tokyo) competing to host the 2016 Summer Olympic and Paralympic Games were chosen for the shortlist on June 4, 2008. Since then, to host both games, the four candidate cities are putting all of their efforts into their publicity works. As one of the most important places in which publicity works is going on, each dedicated Web site for each candidate city is filled with innumerable information for not only Internet users consuming that information, but also Internet users creating and distributing other information. Moreover, because the IOC and IPC provide limited information about the bidding process as well as official documents not familiar to the general public, each dedicated Web site run by each candidate city plays a significant role in planning public relations.

Based on these ideas and perspectives mentioned above, each research question and the overall research framework are developed. As the research purpose, the performance effectiveness of each Web site on promoting each candidate city was

evaluated and compared by the BSC approach. The principal idea on this research was that each Web site of the four candidate cities should effectively promote cities for the bidding process.

Purpose of the Study

In an effort to shed light on the performance effectiveness of the Olympic and Paralympic Games candidate cities' Web sites, this study examined the four perspectives - technical, user friendliness, event, and regional - of the Web sites. More specifically, the purpose of this concurrent study was the following: (a) to evaluate performance effectiveness of the existing candidate cities' Web sites by applying the BSC approach, and (b) to compare the candidate cities' Web site effectiveness by applying the BSC approach.

Research Questions

The following two research questions were addressed by this study:

- 1) How do the candidate cities' Web sites effectively promote the cities for the 2016 Summer Olympic and Paralympic bid process?
- 2) Which city has a more effective Web site for the bid process among Chicago, Madrid, Rio de Janeiro, and Tokyo?

Strengths and Weaknesses of the Study

There are several strengths in this study. First and foremost, this study applied the BSC approach in order to eschew the traditional unidimensional approach. By applying this approach, this research could not only overcome the dominant use of one-dimensional performance indicators, such as profit, but also examine a new balanced nexus of perspectives.

While there are several strengths of this study, several weaknesses also exist.

First of all, based on the BSC approach flexibly applying diverse perspectives, the criticisms against objectivity relating to reliability and validity are inevitable. Primarily among them is that how the four perspectives were selected. In addition to the selected four perspectives in the research, other viable perspectives that were overlooked would cause other criticisms. Therefore, because of the limited perspectives, it would be impossible to entirely evaluate how effectively each Web site is performing.

Secondly, based on its use in prior research (Ismail, Labropoulos, Mills, & Morrison, 2002; Kline, Morrison, & John, 2004; So & Morrison, 2004), the Net Mechanic (www.netmechanic.com) was utilized to evaluate the technical perspective. In other words, the results of the technical perspective relied on the results provided by the Net Mechanic. However, without intimate knowledge in the process of measuring each factor, there is partial limitation on relying on the numeric data measured by the Net Mechanic.

Finally, with regard to questionnaire scale, the dichotomous scale (Yes or No question) was used in this research. This dichotomous scale was used to moderate subjectivity caused by the BSC approach. While objectivity in this research was increased by using the dichotomous scale instead of the Likert scale, several weaknesses connected to the dichotomous scale could arise.

Definition of Terms

Candidate City

The IOC running the summer and winter Olympic Games not only chooses the host cities, but also decides which sport will be included. Particularly, primary roles of the IOC are electing the host city, establishing the candidature, and running the election process (see Table 1). To confirm their intention to bid on the Olympic and Paralympic Games, cities hoping to host the games submit an initial application to the IOC. Among the applicant cities that submitted initial applications to the IOC, four cities - Chicago, Madrid, Rio de Janeiro, and Tokyo - were selected for the shortlist. In this study, the four cities were referred to as the candidate cities.

Table 1

Candidature Acceptance Procedure for the 2016 Olympic and Paralympic Games

Object	Deadline
NOC to inform the IOC of the name of an applicant city	13 September 2007
Signature of the candidature acceptance procedure	1 October 2007
Payment of the candidature acceptance fee (USD 150,000)	1 October 2007
Creation of a logo to represent the application	N/A
IOC information seminar for 2016 applicant cities	Week commencing 15 October 2007, Lausanne
Submission of the application file and guarantee letters to the IOC	14 January 2008
Examination of replies by the IOC and experts	January – June 2008
IOC Executive Board meeting to accept candidate cities for the Games of the XXXI Olympiad in 2016	June 2008
Creation of an emblem to represent the candidature	N/A
Olympic Games Observer Program – Beijing 2008	8 – 24 August 2008
Submission of candidature file to the IOC	12 February 2009
Report of the 2016 IOC Evaluation Commission	1 month before the election of the Host City
Election of the host city of the Games of the XXXI Olympiad in 2016	2 October 2009 121 st IOC Session, Copenhagen

Note. From “Candidature Acceptance Procedure,” by International Olympic Committee, 2007, p. 24.
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Candidate City’s Web site

As defined, Chicago, Madrid, Rio de Janeiro, and Tokyo were referred to as candidate cities. These four candidate cities established their own Web sites to inform people of their priority with regard to the bidding competition. To support their bidding competitions, Chicago2016 (www.chicago2016.org), Madrid2016 (www.madrid2016.com), Rio2016 (www.rio2016.com), and Tokyo2016 (www.tokyo2016.or.jp) were established and being run by the four candidate cities. In this research, each Web site was referred to as the official candidate cities’ Web sites.

Web site Effectiveness

Depending on what the purpose of the Web site is, a Web site's effectiveness would be defined differently. To clarify the definition of the effectiveness defined in this research, we need to take a look at the four perspectives applied to evaluate Web site effectiveness. Through the two perspectives, technical and user friendliness, how those Web sites are mechanically well-structured was measured. Through two additional perspectives, event and regional, how those Web sites are sufficiently providing information about events and the city was measured. Accordingly, the effective Web sites of the candidate cities would be referred to based on two dimensions: a) Web sites mechanically structured and b) Web sites sufficiently informative.

CHAPTER II: LITERATURE REVIEW

This review looked at the literatures on (a) the impact of the Olympic and Paralympic Games, (b) the Web site as a functional tool for public relations, and (c) the theoretical background of the BSC approach. Specifically, the first section dealt with diverse impacts of the games. In addition, the great influences of a Web site in regards to enhancing communication levels and creating brand equity were also reviewed. Finally, the principle of the BSC approach and previous research studies were also dealt with.

Why do Cities Hope to Host the Olympic and Paralympic Games?

Economic Impact

Mega sports events have a wide range of impacts. Among those, the economic impact of sports events is one of the critical factors when it comes to justifying the investments made (Masterman, 2007). In addition, diverse economic impacts have received increasing attention over the past two decades (Kasimati, 2003). Burbank, Andranovich, and Heying (2001) found that “even though the specifics of launching an Olympic and Paralympic bid differed in each city, the broader pattern that emerged from all cities was quite clear: Olympic bids are initiated and sustained by elements of the city’s growth regime” (p. 158).

With regard to a city's growth regime, Covell, Walker, Siciliano, and Hess (2007) also state that cities seek the games for several reasons: (a) as an opening to world business and tourism, (b) as an economic boom for the surrounding area, and (c) for the resulting benefits from related construction and improvements. As many believe, Olympic and Paralympic Games, as the biggest sporting event, play a key role in generating jobs and attracting tourists as a result of the international exposure. According to Hutson (2008), the Chicago 2016 committee anticipated that the Olympic and Paralympic Games would not only stimulate \$22.5 billion of incremental economic activity in Illinois and \$13.7 billion in Chicago, but also 315,000 new jobs would be created in the state with 172,000 in Chicago. Moreover, when a city is awarded the Olympic and Paralympic Games, a large amount of money generated from broadcasting contracts, sponsorship programs, official suppliers, and licensing programs is infused into the city (Kasimati, 2003).

However, in general, most host cities wish they could have something more than a temporary economic boost. Thus, despite these positive economic impacts, potential host communities pose the question of whether the economic benefits of the games are pragmatic. In fact, it is also true that construction expenditures and operating budgets on the games would incur ill feeling. Nevertheless, why do cities still wish to host the games? Long term benefits, concerning increased tourism and newly constructed infrastructure, would be answers to this question (Kasimati, 2003). From this point of view, long term benefits from the games have great influence in justifying the investments made.

According to a study conducted by the Chicago 2016 committee, the city hosting the Olympic and Paralympic Games would gain long term economic benefits from visitors who come to the city or the area as a result of the powerful worldwide media exposure (Hutson, 2008). With regard to the media exposure, Alexander (2005) states that “one way to become a ‘world class city’ is to host a mega event such as the Olympics” (p. 33). International media exposure increases awareness of the host city in the world and brings a number of visitors into the area. The previous host cities have evidence in their profiles that the tourists who came for the Games spent more money than the regular tourists. In addition, the Olympic and Paralympic Games are great opportunities to attract public attention in the world not only to raise tourist numbers in a highly competitive traveling market but also to introduce historic locations all over the world. To get the once-in-a-lifetime opportunity, the cities are looking for ways to get involved in the games.

As many believe, bringing the Olympic and Paralympic Games to a city will allow for some necessary changes in city transportation and infrastructure (Teolis, 2009). For instance, hosting games attracts government funding to provide infrastructure (Alexander, 2005). For the 2008 Summer Olympic and Paralympic Games, \$2.1 billion and \$20 billion were spent on operational costs and infrastructure respectively (Bistow, 2008). In relation to the 2008 Summer Olympic and Paralympic Games, Beijing’s Olympic Goldmine (2001) anticipated that “hosting the games would spark a multi-year infrastructure spending boom which should lay the foundations for strong growth after the games are over” (¶ 11).

Environmental Impact

Hosting the Olympic and Paralympic Games will be beneficial environmentally. The eco-consciousness provoked by the games will reach to the rest of the country as well as the host city. Schmidt (2006) states that an environmental movement in sports activities has two broad goals: (a) to reduce the ecological footprint of sports activities and (b) to exploit the popularity of sports to raise environmental awareness in general.

The 1994 Winter Olympic Games is referred to as the first attempt of a green Olympic Games. For example, the Lillehammer Olympic Organizing Committee (LOOC) emphasized the environmental plan on the Olympic Games, such as a skating rink redesigned to avoid impacts to a nearby bird sanctuary, use of renewable building materials, energy efficient heating and lighting systems, and an arena designed for the harmonization with the local landscape. Since the 1994 Winter Olympic Games, the IOC has tried to make the Olympics and Paralympics showcases for environmental sustainability (Schmidt, 2006).

The broad media coverage for the Olympic and Paralympic Games plays a significant role in supporting the showcase for environmental consciousness. And the host city and the nation get diverse opportunities to show the well-organized environmental plans to the world, to improve image, and to get additional benefits from inducement of the tourists or official sponsors of the games. Thus, the city hoping to host the Olympic and Paralympic Games needs to be concerned about environmental issues associated with the games. In general, as a member of the IOC's Commission on Sport and the Environment, the United Nations Environment Programme (UNEP) works with

bidding cities to refine the environmental component of their bids, to monitor how well they have followed through on commitments, and to help them raise environmental awareness during the events themselves (Falt, 2006).

With respect to the Turin 2006 Winter Olympic and Paralympic Games, the Turin Organizing Committee for the Olympic Games (TOCOG) “established a zero net emissions (climate-neutral) program to offset greenhouse gasses produced because of the games” (Kellar, 2008, p. 59). More specifically, even though this specific environmental program is first planned for the Olympic and Paralympic Games, it was greatly effective in increasing interest in the local environment. As one of the long term benefits, the developed green space from the environmental impact of the Olympic and Paralympic Games will be handed down to the next generation.

The Beijing 2008 Olympic and Paralympic Games are good cases showing the environmental impact of the games to the public. In 2001, China won the bid to host the 2008 Olympic and Paralympic Games in Beijing. However, many people protested that China should not have hosted the games primarily based on political and environmental issues. In particular, environmental pollution was one of the serious problems China had in 2001. Nevertheless, with regards to the environmental pollution, the Beijing Organizing Committee for the Olympic Games (BOCOG) formally announced that a large number of ecological improvements and many steps toward environmental protections would be made (BOCOG, 2007). During the period to prepare for the games, BOCOG developed diverse environmental protection programs, such as the ecological construction of an anti-desertification layout plan and a dust weather monitoring system

(BOCOG, 2007). Even though the beginning of these efforts concerning environment were started with the games, the impacts resulting from these efforts will last into the coming future.

The Olympic and Paralympic Games generated a movement promoting awareness and preservation of the nation's resources, significantly improving environmental awareness (Chepesiuk, 2002). Thus, it can be said that the games give positive environmental impacts to the host city.

Web site as the most Valued Public Relations Outlets

Key Bid Components and Criteria

The bidding process for sports events, especially the Olympic and Paralympic Games, can be an expensive and risky exercise (Alexander, 2005; Masterman, 2007). If this is so, shouldn't cities bid on the Games? Nevertheless, considering the potential that drives the diverse tangible and intangible benefits, bidding for the right to host the Olympic and Paralympic Games is, without a doubt, worthwhile.

Which cities won the bid? What features did they have? Masterman (2007) derived six critical factors in the winning of bids from 18 prescribed themes, which is required by the IOC to be included in the candidature file. The critical factors in the winning of bids consist of (a) gaining stakeholders' support, (b) political risk analysis, (c) knowledge of the bidding and evaluation process, (d) the recruitment of key management, (e) strategic communications for branding, and (d) a thorough bid book.

Among these critical factors, particularly stakeholders' support and strategic communications for branding are strongly associated with public relations through Web sites.

In general, stakeholders are referred to as a person, groups, organizations, or systems relating to the bidding process (Mullin, Hardy, & Sutton, 2007). In particular, since the community is the force behind the bid and most events, Masterman (2007) regarded local community as a principal stakeholder group. Since the IOC ensures the support of the residents of candidate cities, the support of community plays a significant role in the bidding process as a principle stakeholder (Alexander, 2005). How can the cities get the support from local communities? How do organizing committees convince people that there are more benefits than costs in hosting an event?

In addition to the support of the local communities as a principle stakeholder, strategically integrated communications for branding also have a great influence on the bidding process. Brand is referred to as an ability to differentiate a product or service from its competitors (Aaker, 2002). Particularly, the creation of the candidate cities' themes and logos are key components of the branding process (Masterman, 2007). Brand is necessary for a city to show the ability to host the games. Thus, if a city hopes to host the Olympic and Paralympic Games, the city definitely has to show that it has the ability to host games. For example, since China won the bid to host the 2008 Olympic and Paralympic Games in Beijing in 2001, many people protested that China should not have hosted the 2008 Summer Olympic and Paralympic Games, primarily based on their human rights record and lack of openness with respect to the media. Unless Beijing built

a brand that required the repositioning of a city and changed in international perception (Masterman, 2007), Beijing would not host the 2008 Olympic and Paralympic Games.

Web site as Communication

Most communication models consist of four aspects of communication, which are a sender, a message, a channel, and a receiver (Burnett & Marshall, 2003). Based on these four aspects, the communication models are defined as (a) one-to-one, (b) one-to-many, and (c) many-to-one communications.

One-to-one communication is the most common communication model, and the telephone, letters, and even e-mail are all included in this category. On the other hand, as traditional mass media, television, radio, and newspaper are encompassed into the one-to-many category. As a tool associated with public relations, Web site is not only included into the many-to-one category, but also included in both the one-to-one and the one-to-many categories (Burnett & Marshall, 2003).

Without a doubt, Web site communication changed not only how sport organizations interact with others, but also how they identify themselves in the public perception (Masteralexis, Barr, & Hums, 2005). In all of the ways described, to get the support from a community and build a candidate city's strong brand, communication is one of the most significant factors. In other words, through enhancing communication effectiveness, those two factors, which have a great influence in the winning of bids, could be boosted.

Stakeholders against hosting the Olympic and Paralympic Games have a negative influence in the bidding process. Particularly, taxpayers' views are dependent on the amount of money being paid for the games and being gained from the games. For example, the Toronto bid for the 1996 Olympic and Paralympic Games was marred by public protests against spending on sports events when poverty and homelessness were city's challenges (Masterman, 2007). Meanwhile, other issues relating to politics or the environment would also have negative influences in bidding on the Games.

How do we convince them that hosting the Olympic and Paralympic Games improves the living environment, increases their income, and alters their standard of living or economic well-being? How do we provide these messages to stakeholders continuously? To obtain their support, many professionals and practitioners need to focus on the functions of the Web site because it enhances the ability for organizations to communicate with diverse stakeholders (Covell et al., 2007; Masteralexis et al., 2005). In addition, without connection with any media, an organization can not only provide stakeholders with immediate information, but also collect feedback from them.

While brand is defined as an ability to differentiate one city from the others, brand equity is referred to as image, mark, and name, representing associations with a particular brand (Gladden, 1997). From this point of view, branding process, associated with themes and logos, distinguishes them from competitors by providing particular brand equity. With regard to the branding process, a Web site has the ability to increase brand equity, as well as to provide the user unique insights into a city (Masteralexis et al., 2005).

Information rather than Data

It must be carefully decided what content will be presented in a Web site (Barnd & Yu, 2002). In addition, the content reflects how useful a Web site is, regardless of its intended target user. However, the contents tend to be subject to bias because the content is dependent on the intention and views of the people maintaining the Web site.

Content consists of both data and information. With regard to the content, Covell et al. (2007) said that the Web sites have to have information rather than data. According to them, while data consists of numbers or facts that represent some aspect or aspects of a situation, information consists of data that have meaning.

In all of the ways described, information was regarded as meaningful resources stored in the Web sites. However, even if there is sufficient information, what if the information is not valuable? The Web site would not be regarded as an effective site. With respect to the qualitative information, Covell et al. (2007) and Gelders (2006) identified three features toward qualitative information: (a) timely, (b) accurate, and (c) complete information.

Theoretical Background for the Balanced Scorecard

Financial Measurement and its Limitations

Without metrics to track performance, marketing and business plans are ineffective (Patterson, 2004). One of the most significant factors for running a business is the ability to measure performances related to business. In particular, regardless of

what sector your organization represents, measurement improves the performance of the organization (Niven, 2008). To develop more indicative and more reliable instruments, numerous efforts have been made throughout history. Among those efforts developed to evaluate performance, most of the attempts have been deeply interrelated with financial and monetary flow. In particular, during the industrial age, financial control systems were developed in companies to facilitate and monitor efficient allocations of financial and physical capital (Kaplan & Norton, 1996). For this reason, diverse financial-reporting processes and financial variables such as return on investment (ROI), cash flow, and economic value added (EVA) still play a key role in measure for judging business performance (Grabinski, 2007).

During the industrial age, from 1850 to about 1975, various financial-reporting systems and variables based on financial and monetary flow had being contributed to running businesses through providing appropriate measuring tools (Kaplan & Norton, 1996). However, beginning in the twenty-first century, many question the almost exclusive reliance on financial measures of performance (Niven, 2008). Why are those financial-reporting systems and variables inappropriate now? Why are those systems criticized? With respect to these questions, Niven (2008) indicated five reasons explaining the limitation of the financial measurement: they are (a) not consistent with today's business realities, (b) not indicative of future performance, (c) not capturing cross-functional dependency, (d) sacrificing long-term thinking, and (e) not relevant to many levels of the organization. Moreover, advent of the information ages is also strongly related to the limitations of the financial measures. With regard to the

limitations relating to the advent of the information age, we need to take a look at several characteristics of this age.

The BSC and Advent of the Information Age

Senn (2003) identified six characteristics of the information age: (a) an information-based society, (b) business dependent on information technology, (c) work processes transformed to increase productivity, (d) information technology providing means to rethink, recreate, and reengineer conventional business processes, (e) success determined by the information effectiveness, and (f) information technology embedded in many products and services. Based on these characteristics of the information age, it is clear that tangible assets no longer serve as the primary driver of enterprise value (Niven, 2008). From this point of view, financial-reporting processes developed some decades ago need to be expanded to incorporate those tangible and intangible assets.

As mentioned earlier, the measurement process and system for business has been traditionally financial. For example, accounting has been called the language of business (Kaplan & Norton, 1996). To overstep the boundary of business principles, numerous scholarly and practical works have been done. In particular, one of the most influential management tools to have appeared on the corporate scene in the past two decades is the BSC (Morrison, Taylor, & Douglas, 2004). The BSC is a set of carefully selected measures originating from the organization's vision and strategy (Niven, 2006).

The BSC is a new synthesis created as a business performance measurement tool to overcome the dominant use of one-dimensional performance indicators such as

historical-cost financial accounting models (Kaplan & Norton, 1996; So & Morrison, 2004). Further, Neely (2002) described that the BSC identifies and integrates four different ways of looking at performance. The BSC measures a specific performance from four different perspectives: (a) financial perspective, (b) customer perspective, (c) internal business process perspective, and (d) learning and growth perspective (see Figure 1). The BSC suggests that we need to view the organization from these four perspectives. The key premise of the BSC is that financial results alone can't capture value-creating activities (Kaplan & Norton, 1996; Karathanos & Karathanos, 2005).



Figure 1. Basic Design of Balanced Scorecard Approach

The Four BSC Perspectives and Non-profit Organization

The financial perspective addresses the question, “how should we appear to our shareholders?” (Karathanos & Karathanos, 2005; Morrison et al., 2004). This perspective includes the operating income, return on capital employed, and economic

value added (Abu-Hamdieh , 2001). Without a doubt, no organization, even non-profit organizations, would disregard the financial-reporting processes. However, as one of the four perspectives of the BSC, financial perspective is somewhat differently applied to the financial control system which was dominant in the industrial age. While the objectives of this financial perspective, in the for-profit domain, represent objectives such as ‘increasing shareholder value’, ‘growing revenues’, and ‘lower costs’, financial objectives in the nonprofit organization and public sectors represent objectives such as ‘minimizing cost’ (Niven, 2008).

The customer perspective addresses the question, “how should we appear to our customers?” (Karathanos & Karathanos, 2005; Morrison et al., 2004). This perspective examines customer satisfaction, retention, profitability, and new customer acquisition (Abu-Hamdieh , 2001). Focusing on target customer audience makes an organization different from its competitors. However, even though most organizations have a target customer audience, their actions sometimes reveal an ‘all things to all customers’ strategy (Niven, 2008). In this perspective, clear ideas toward targeted customer and business segments play a significant role in formulating the customer perspective.

The internal business process perspective addresses the question, “what processes must we excel at?” (Karathanos & Karathanos, 2005; Morrison et al., 2004). This perspective includes the processes the organization performs to satisfy the needs of its customers, starting with identifying the needs of the customers, designing and developing the products and services, producing and marketing them, and finally performing post-sale services (Abu-Hamdieh , 2001). While conventional measurement

systems tend to focus on external indicators with regard to monitoring and improving cost, quality, and time-based measures of existing business processes, the BSC enables the demands for internal process performance to be derived from the expectations of specific external constituencies (Kaplan & Norton, 1996). Service development and delivery, partnering with the community, and reporting are examples of aspects that may be represented in this perspective (Niven, 2008).

The learning and growth perspective addresses the question, “how can we sustain our ability to change and improve?” (Karathanos & Karathanos, 2005; Morrison et al., 2004). This perspective includes developing the human resources the organization has, refining and aligning the organizational procedures and processes, and developing its information systems (Abu-Hamdieh, 2001). Through integrating employees, systems, and organizational alignment, this perspective focuses on an organization’s capabilities for learning and growth. In particular, the objectives designed in this perspective will help an organization close the gap between current organizational infrastructure of employee skills, information systems, and organizational climate and the level necessary to achieve the results an organization desires (Niven, 2008).

Modified BSC Approach for Web site Evaluation

Since Kaplan and Norton (1996) had developed the BSC as a business performance measurement tool useful to overcome limitation in regard to single-dimension perspective, numerous scholarly works have been done to apply this idea in diverse fields. According to Morrison, Taylor, Morrison, and Morrison (1999), the

advantage of the BSC to Web site evaluation is that “it eschews the traditional unidimensional approach to the measurement of performance in any given context.” If this is so, how did researchers and practitioners develop this idea of running and evaluating Web sites? To identify these relationships between the ideas on the BSC approach and Web site evaluation, we need to take a look at potential capacities of the BSC approach as a multi-dimensional evaluation tool for Web sites.

These potential capacities are also based on the idea that there is more than one dimension on which a Web site should be measured. In a book titled *Web Metrics*, Sterne (2002) has clearly shown some ideas that have caught on and are used in running and evaluating Web sites. Supposing a sort of tabulation representing a balanced scorecard, there are seemingly disparate elements of a competitive agenda in Web site performance. This idea was developed and used in running and evaluating Web sites because this sort of tabulation would reveal where improvements in one area may have been achieved at the expense of another (Sterne, 2002).

As a matter of fact, there are not sufficient research cases compared to any other predominant approaches relating to content analysis because the BSC approach was developed in the mid-1990s. However, growing popularity of using the BSC approach for Web site evaluation in many fields, especially in the business fields, shows significant possibility to apply the BSC approach as a Web site evaluation tool.

When applying the BSC, people may wish to not only add or delete a couple of perspectives, but also to modify overall perspectives traditionally applied. The added items should come from a review of literature relating to the issues under consideration.

However, with regard to applying the modified BSC to a particular case, other criticisms would include how the four perspectives were selected, and whether there might be other viable perspectives for evaluating Web site performance or effectiveness (Morrison et al., 2004). Certain factors are critical to its success, and the organization will fail if it does not achieve the objectives associated with these factors (Rockart, 1979). In Web site evaluation, each perspective and factor critical to its effective performance have to be selected by academics and practitioners. To properly modify the BSC for a particular content, we need to take a careful look at subsequent studies modified and improved upon the original four perspectives developed by Kaplan and Norton (1996). In general, applying the BSC originally consisted of the four perspectives: (a) financial perspective, (b) customer perspective, (c) internal business process perspective, and (d) learning and growth. Table 2 provides a summary of the modified BSC's perspectives.

Table 2

Modified BSC's Perspectives

Perspectives	A	B	C	D	E	F
Financial	+					
Customer	+	+	+		+	+
Internal Business	+	+				
Learning and Growth	+					
Technical		+	+	+	+	+
Marketing		+	+	+	+	+
Destination					+	
Web site Attractiveness				+		+
Web site Marketing				+		
Cultural			+			

A: Kaplan & Norton (1996); B: Morrison et al. (1999); C: Ismail et al. (2002);
D: Feng, Morrison, & Ismail (2003); E: So & Morrison (2004); F: Kline et al. (2004)

B: Web sites for Small Hotels

(Customer / Internal Business / Technical / Marketing)

As mentioned earlier, Morrison et al. (1999) suggested in many ways using the BSC approach for Web site evaluation. In their research, they modified four perspectives developed by Kaplan and Norton (1996) to (a) customer, (b) internal business, (c) technical, (d) marketing perspectives. To properly apply the four perspectives developed for evaluating Web sites of small hotels, Morrison et al. supplied a total of 25 critical success factors (CSFs) for the four perspectives, and through those factors, they analyzed 16 small hotels' Web sites and checked to see if they were effectively being performed. Through this research, they concluded that their sites tended to be 'electronic brochures' rather than 'dynamic and interactive relationship marketing tools.' Table 3 provides 25 critical success factors applied by Morrison et al. to analyze those Web sites.

Table 3

Modified BSC Approach for Web sites for Small Hotels

Perspectives	Factors Examined
Customer	Attractiveness; Availability and reservations; Content and organization; Currency of information; Interactivity; Needs of special customer groups; Response verification and speed; Security of purchases; User friendliness
Internal	Ease of site maintenance; Schedule for site maintenance and updating; Skills to maintain site
Technical	Currency of links; Effective use of HTML; Reciprocal hyperlinking; Registration with search engines; Short download time; Traffic monitoring and analysis
Marketing	Positioning approach; Market segmentation and target marketing; Marketing research and database marketing; Relationship marketing; Partnerships; Tangibilizing of hostel services; Marketing evaluation

Note. From "Marketing Small Hotels on the World Wide Web," by A. M. Morrison, S. Taylor, A. J. Morrison, and A. D. Morrison, 1999, *Information Technology & Tourism*, 2(2), 97-113.

C: European Union NTO Web sites

(Customer / Technical / Marketing / Cultural)

To ascertain the marketing effectiveness of the European Union's (EU) National Tourism Organization (NTO) Web sites based on culture, Ismail et al. (2002) carried out a content analysis of the EU member's NTO Web sites. In this research, the instrument used for this evaluation was developed based on Morrison et al.'s (1999) adaptation of Kaplan and Norton's (1996) BSC approach. The modified BSC approach for this research consists of the following four perspectives: (a) technical, (b) marketing, (c) site visitor relationship, and (d) cultural.

Among the four perspectives applied to ascertain the marketing effectiveness of the EU's NTO, technical perspective was evaluated under four categories: link check, hypertext markup language (HTML) check, browser compatibility, and load time. In particular, for accurate evaluation of each Web site, Net Mechanic, an online service that rates the technical performance of Web sites, was employed (Ismail et al., 2002). Based on Morrison et al.'s (1999) marketing CSFs, marketing perspective was evaluated in this research. The evaluation for marketing perspective has two divided aspects: (a) marketing research and (b) marketing segmentation. To properly apply the BSC in this research relating to each nation's NTO Web site, two perspectives-site visitor relationship and cultural-were added by the researchers. Visitor relationship was evaluated based on four criteria: (a) ease of navigation, (b) ease of contact, (c) attractiveness of site, and (d) general availability of travel and tourism links. Even though it is used as a different term, site visitor relationship was used in this research,

and each sub factor tends to be equal to customer perspectives of other research. In addition, cultural perspectives were evaluated based on whether or not the Web site had information on the country's language, history, traditions, customs, laws as well as visual and performing arts, information on normal business hours and so on. Table 4 provides factors applied by Ismail et al. to analyze Web sites.

Table 4

Modified BSC Approach for Web sites of EU NTOs

Perspectives	Factors Examined
Customer	<i>Ease of navigation</i> navigation menu; index or site map; availability of FAQ <i>Ease of contact</i> directed e-mail contact; mailing address; telephone number & fax <i>Attractiveness of site</i> clear and uncluttered pages; color used to improve visual appeal <i>Availability of general travel and tourism links</i> links to shopping; attractions; embassies; consulates
Technical	<i>Net mechanic test</i> link check; HTML; browser compatibility; load time
Marketing	<i>Marketing research</i> tracking visitor country; gathering contact information; statement encouraging inquiries <i>Market segmentation</i> different version of site based on country of origin; information for specific groups
Cultural	<i>Language</i> English language availability <i>Information availability</i> history; traditions & customs; business hours; famous people, places, or events; historical building, sites, or attractions; environment and nature; sports; national holidays, festivals, or events <i>Availability of picture and graphics representing the country's culture</i>

Note. From "A Snapshot in Time: the Marketing of Cultural in European Union NTO Web sites," by J. A. Ismail, T. Labropoulos, J. E. Mills, and A. Morrison, 2002, *Tourism, Culture & Communication*, 3, 165-179.

D: Destination marketing in China and the USA

(Technical / Marketing / Web site Attractiveness / Web site Marketing)

To determine similarities and differences between the official destination marketing organizations (DMOs) of the USA and China, the approach used for the Web site evaluation was amended from Morrison et al.'s application based on the notion of Kaplan and Norton's BSC. By applying a modified BSC approach, technical qualities, Web site marketing strategies, marketing information, and Web page designs were evaluated. Through this research, Feng et al. (2003) found how both the US and Chinese DMOs are effectively addressing leisure travel markets, offering links to partner organizations, and providing general destination information.

E: East Asian National Tourism Organization Web sites

(Customer / Technical / Marketing / Destination)

To compare the national tourism organizations' (NTOs) Web sites in the East Asia region and identify their Internet marketing strengths and weaknesses in this study, the Morrison et al. (1999) approach was partially modified to include the customer, technical, marketing, and destination information. Through this research, So and Morrison (2004) concluded that all of the NTOs in the East Asia region were not fully utilizing their Web sites. In particular, they found that East Asian NTOs were not very effective in using their Web sites in the marketing role (So & Morrison, 2004). Table 5 provides factors applied by them to analyze those Web sites.

Table 5

Modified BSC Approach for East Asian National Tourism Organization Web sites

Perspectives	Factors Examined
Customer	Ease of contact; Ease of navigation; Special customer needs; Added value to customer
Technical	Link check (dead links); HTML; Browser compatibility; Load time; Spelling check; Register IT-readiness; Link popularity
Marketing	Globalization; Marketing segmentation and target marketing; Branding; Tangibilizing the destination; Relationship marketing; Marketing research and database; Partnership
Destination	General travel information; Shopping areas; Accommodations; Attractions; Restaurants; Transportation; Embassy; Consulate information; Pricing; Corporate information; Meeting planning; Added value to meeting planners

Note. From “Internet Marketing in Tourism in Asia: An Evaluation of the Performance of East Asian National Tourism Organization Web sites,” by S. So and A. M. Morrison, 2004, *Journal of Hospitality & Leisure Marketing*, 11(4), 93-118.

*F: Bed & Breakfast Web sites**(Customer / Technical / Marketing / Web site Attractiveness)*

This study was conducted by Kline et al. (2004) to evaluate the Web sites of Bed & Breakfast (B&B) belonging to the Indiana B&B Association. Using the BSC approach, Kline et al. considered four modified BSC perspectives: a) user friendliness, b) site attractiveness, c) marketing effectiveness, and d) technical. This study found that the major strength of the B&B Web sites was their attractiveness, but improvements were needed in all four categories. Table 6 provides factors applied by them to analyze those Web sites.

Table 6

Modified BSC Approach for Bed & Breakfast Web sites

Perspectives	Factors Examined
Customer	<i>Ease of navigation</i> site search; site map; home button; navigation tools; limited scrolling <i>Contact information</i> direct e-mail contact; mailing address; telephone number; fax number
Technical	<i>Net mechanic test</i> link check; HTML; browser compatibility; load time; spell check
Marketing	<i>Product</i> house and room pictures; virtual tour <i>Information availability</i> rate availability; target markets addressed; unique aspects of B&B and innkeepers; local activities and links to activities
Web site Attractiveness	<i>Visual appeal</i> pictures; clear and uncluttered pages; text readability; background color

Note. From "Exploring Bed & Breakfast Web sites: A Balanced Scorecard Approach," by S. F. Kline, A. M. Morrison, and A. John, 2004, *Journal of Travel & Tourism Marketing*, 17(2/3), 253-267.

CHAPTER III: RESEARCH METHODOLOGY

The BSC Approach for Web site Promoting Bidding Process

This study investigated four Web sites of the candidate cities. To investigate these Web sites, the BSC approach developed by Kaplan and Norton (1996) was applied. Four modified perspectives - (a) technical, (b) user friendliness, (c) event, and (d) regional - were considered to evaluate the effectiveness of the Web sites. All of these perspectives were significantly tied to the purpose and strategy of the Web sites. While previous research has focused on the financial aspect as the prime factor of sustainability, these perspectives allow analysis of performance across multiple dimensions. The categories and items of this study are shown in Table 7.

Technical Perspective

The technical quality directly influences the Web sites' effectiveness by not only retaining the characteristics of traditional tools, but also taking full advantage of this medium's unique characteristics (Feng et al., 2003). Morrison et al. (1999) have identified the technical perspective as one of the four perspectives for Web site evaluation. Diverse categories were identified by reviewing relevant literature and previous research.

Table 7

Selected BSC's Perspectives, Categories, and Items

1. Technical Perspective (4)
Link Check
Load Time
HTML
Browser Compatibility
2. User Friendliness Perspective (10)
Ease of Navigation (3)
Site Search
Site Map
Home Button
Availability of Link for Relevant Sources (5)
City Web site
Volunteering
International Olympic Committee
International Olympic Committee
Contacting Organization
Language (1)
Other Languages
Accessibility for Users with Disabilities (1)
Text Size
3. Event Perspective (12)
Olympic Games (4)
History
Movement
Sports
Facilities
Paralympic Games (4)
History
Movement
Sports
Facilities
Bidding Process (1)
Candidature File
Marketing (3)
Sponsorship
Shopping
Donation
4. Regional Perspective (5)
Annual Climate
Transportation
Airport
Accommodation
Image

While Morrison et al. applied six technical factors and an additional way showing how the scores for ‘registration with search engines’ were assessed by using Alta Vista, HotBot, Excite, and Yahoo, Ismail et al. (2002) and So and Morrison (2004) measured the technical perspective by using online services: a) Net Mechanic and b) Web site Garage. In these studies, to arrive at an accurate evaluation of each Web site, the Net Mechanic was utilized to evaluate the technical perspective. Specific technical aspects were evaluated under five categories: link check, load time, hypertext markup language, browser compatibility, and spell check.

The Net Mechanic uses a five-star rating approach to evaluate Web sites, based on the five criteria (Ismail et al., 2002). Each Web site can receive a maximum score of 25 points. However, because of different language usage in each Web site, the spell check category was not able to be evaluated. Accordingly, the technical perspective consists of four categories: link check, load time, HTML, and browser compatibility.

User Friendliness Perspective

Since Morrison et al. (1999) used customer perspective as one of the aspects reflecting Web site effectiveness, Ismail et al. (2002), So and Morrison (2004), and Kline et al. (2004) partially applied this perspective into their research studies. Regardless of the purpose and target user of the Web sites, usability plays a significant role in reflecting Web sites’ effectiveness. For instance, if users can’t figure out how to use a Web site in a minute or so, they will conclude that it won’t be worth their time, and they leave (Nielsen, 2000).

Based on the literature review, Ismail et al. (2002) evaluated Web site visitor relationship aspects by using four categories: ease of navigation, ease of contact, attractiveness of site, and general availability of various links. In this research study, ease of navigation and general availability of various links were used to evaluate effectiveness of the candidate cities' Web sites. In addition to two factors, the language and accessibility for users with disability categories were added to this research. Accordingly, the user friendliness perspective was evaluated based on four categories: ease of navigation, availability of link for relevant sources, language, and accessibility for users with disabilities.

Event Perspective

How are the 2016 Summer Olympics and Paralympics effectively promoted by the Web sites of the four candidate cities? As mentioned earlier, the key objective of these Web sites is effectively promoting the Olympic and Paralympic Games. If this is so, it is without a doubt necessary for these Web sites to have sufficient information and resources for both games. To evaluate whether or not each Web site has essential information and sufficient resources, four categories - Olympic Games, Paralympic Games, the bidding process, and marketing - were carefully selected for this event perspective.

The Web sites of the IOC and IPC are without a doubt places having sufficient information and resources for the Olympic and Paralympic Games. Based on information on both games in the Web sites of the IOC and the IPC, four criteria

reflecting the Olympics and Paralympics categories were decided. In addition, with regard to the bidding process category, the presence of a candidature file was evaluated. As shown in Table 7, marketing category is also added in this event perspective. Considering the importance of business aspects as one essential part of the games, this category consists of sponsorship, shopping, and donation.

Regional Perspective

On September 18, 2008, the IOC announced the composition of the Evaluation Commission which will visit the four candidate cities bidding to host the 2016 Olympic and Paralympic Games (IOC, 2009b). This Commission's task is a technical and fact-finding one: to verify the information stated in the candidature file, to determine whether proposed plans are feasible, and to make a qualitative assessment of risk (IOC, 2009b). In particular, the report submitted by the Commission to the IOC has a great influence in the decision of the host city. Generally, the report involves diverse information on the city and the nation, in terms of regional information. For instance, information and resources for environment, meteorology, transport, and even culture are involved in the report.

Based on the *Internet Marketing in Tourism in Asia: An Evaluation of the Performance of Ease Asian Nation Tourism Organization Web sites*, the factors of the regional perspective were composed. This perspective consists of annual climate, transportation, airports, accommodations, and image.

Data Collection Instrument

Validity and reliability play a key role in designing a data collection instrument and in assessing variables. To assess validity and reliability of the modified data collection instrument, content validity and interrater reliability were considered respectively. To obtain quantitative and qualitative responses, a modified data collection instrument (see Appendix A) was distributed to five Information Technology (IT) experts. Based on the obtained quantitative responses, the content validity index (CVI) was computed. Through the CVI, not only was each question that was not at a sufficient level of CVI removed from the modified instrument questionnaire (see Table 9), but also the instrument was redesigned (see Appendix B). Moreover, to assess the reliability of the redesigned instrument, interrater reliability (Cohen's Kappa) was computed based on an assessment of both the investigator and reviewer.

Content Validity

Berg and Latin (2008) state that “content validity usually applies to written tests in educational settings, questionnaires, and other written instruments when a comparison to a standard is not possible.....and content validity is the extent to which the items or questions accurately measure the desired information” (p. 189). To evaluate user friendliness, event, and regional perspectives, content validity was assessed by the review of each questionnaire by the five IT experts. Three of them are serving as faculty members in charge of IT classes in the Sport Management Department in the State

University of New York College at Cortland (SUNY Cortland). One of them is a graduate assistant serving as a teaching assistant in some IT related classes. One of them is a sport-related Web site designer who majored in sport science. These five experts in this research area examined all 33 questionnaires, provided comments and feedback in relevance to each perspective, and made unbiased judgments about the validity of this instrument. Moreover, they provided a critique on how validity could be improved.

However, even though five experts were recruited for assessing validity, the logical validity approach, including face validity and content validity, is sometimes criticized because these statistical values “are taken either at face value or qualitatively rather than quantitatively determined” (Berg & Latin, 2008, p. 188). To overcome these weaknesses which the logical validity approach faces, the CVI was computed based on IT experts’ quantitative responses. This CVI allowed the researcher to quantify the number and proportion of the questionnaires on this instrument (McDonald, 2002).

Content validity should be established for the specific intended population because it tends to vary across populations (Haynes, Richard, & Kubany, 1995). Five IT experts were recruited to identify each perspective, category, and question that might have been overlooked and to make any suggestions for improvement (see Table 8). The introduction, having information about the background of this study and the reason the research questions are being asked, was explained to experts and a copy of the proposed instrument (see Appendix A) was given firsthand.

Table 8

Overall Procedures for Assessing Content Validity

Stage	Directions
#1	Introduction to this study was directly given to the five IT experts by the investigator
#2	Experts were asked to visit a Web site (www.chicago2016.org) and review 33 questions
#3	Experts were asked to complete a dichotomous scale survey (see Appendix A)
#4	Experts were asked to determine the validity of each question on a scale of 1 to 4 (4 being the highest) and provide comments and overall feedback (see Appendix A).
#5	Comments and feedback obtained were applied to revise the questionnaires
#6	CVI was computed based on the responses
#7	Questions having insufficient CVI were removed, leaving 27 valid questions (see Table 9)

The CVI for the total data collection instrument is presented by the percentage of total questions that are rated by the experts as valid (McDonald, 2002). A CVI of 0.80 or better indicates a good content validity level (Polit & Hungler, 2002). If experts give the questionnaires a rating of a 1 or a 2, the questionnaires are invalid. To be valid, the experts must give the questionnaires a rating of at least a 3 or a 4. In this research, since we recruited five IT experts, at least four experts must rate a 3 or 4 to make it a valid questionnaire. Based on responses obtained by five experts, six questions were ascertained invalid. Therefore, 27 questions of a total of 33 were determined to be valid (.80 or higher). Table 9 provides a summary of the CVI which was calculated based on the responses of the experts. Following the content validity check, questionnaires without enough CVI were modified or removed. Through content validity assessment, a data collection instrument was partially modified (see Appendix B).

Table 9

Content Validity Index

Perspectives / Questionnaires	CVI
2. User Friendliness Perspective (10)	
Ease of Navigation (3)	
2-1-1. Is there a function for site search?	1.00
2-1-2. Is there a function for site map?	1.00
2-1-3. Do the pages include a link to the home page?	1.00
Availability of Link for Relevant Sources (5)	
2-2-1. Does the Web site include a link to city's Web site?	1.00
2-2-2. Does the Web site include a link for volunteering?	1.00
2-2-3. Does the Web site include links to the IOC?	1.00
2-2-4. Does the Web site include links to the IOC?	1.00
2-2-5. Is there a way to contact the organization?	0.80
Language (1)	
2-3-1. Are there Web sites available in four or more languages?	1.00
Accessibility for Users with Disabilities (1)	
2-4-1. Is there a function for adjusting text size for users with visual disabilities?	1.00
3. Event Perspective (12)	
Olympic Games (4)	
3-1-1. Does the Web site provide information on Olympic history?	1.00
3-1-2. Does the Web site provide information on Olympic movement?	1.00
3-1-3. Does the Web site provide information on Olympic sports?	1.00
3-1-4. Does the Web site provide information on facilities for Olympic sports?	1.00
Paralympic Games (4)	
3-2-1. Does the Web site provide information on Paralympic history?	1.00
3-2-2. Does the Web site provide information on Paralympic movement?	1.00
3-2-3. Does the Web site provide information on Paralympic sports?	1.00
3-2-4. Does the Web site provide information on facilities for Paralympic sports?	1.00
Bidding Process (1)	
3-3-1. Does the Web site provide the candidature file?	1.00
Marketing (3)	
3-4-1. Does the Web site provide lists of sponsors?	0.80
3-4-2. Is there an official on-line merchandise store for the games?	1.00
3-4-3. Is there a function for donating?	1.00
4. Regional Perspective (5)	
4-1. Does the Web site provide information on city's annual climate?	1.00
4-2. Does the Web site provide information on city's transportation?	1.00
4-3. Does the Web site provide information on airport near the city?	1.00
4-4. Does the Web site provide information on city's accommodations?	1.00
4-5. Does the Web site have Images of the city?	1.00

Interrater Reliability

As criticisms associated with validity can be made of the four perspectives based on the BSC approach, reliability issues might also be considered. With respect to the reliability issues, Morrison et al. (2004) state that “more expert evaluators and other steps are needed to improve and measure interrater reliability in the application of the modified BSC approach” (p. 242). Berg and Latin (2008) also state that “interrater reliability is a special type that is used to determine the consistency of scores obtained by more than one tester...sometimes this is referred to as a measure of objectivity” (p. 194). When there are two categorical variables with the same value, Cohen’s Kappa, a statistical measure of interrater reliability, is generally used to check the reliability of agreement between the two measures (Leech, Barrett, & Morgan, 2005). Leech et al. (2005) state, “The kappa usually should be .70 or greater because kappa is a measure of reliability” (p. 74).

To ensure the level of reliability of the data collection instrument (see Appendix B), interrater reliability was assessed. To check the reliability of the responses of an investigator and a reviewer on the data collection instrument, Cohen’s kappa was computed by the Statistical Package for the Social Sciences (SPSS®) software.

In order, the kappa coefficients of the Chicago, Madrid, Rio de Janeiro, and Tokyo Web sites were .92, .92, .71, and .84, respectively (see Table 10). Because the kappa should be .70 or greater, the resulting kappa, ranging from .71 to .92, indicates that the responses of both the investigator and reviewer provide similar information about Web site effectiveness.

Table 10

Cohen's Kappa for Interrater Reliability

Candidate Cities' Web sites	Cohen's Kappa
Chicago	.92***
Madrid	.92***
Rio de Janeiro	.71***
Tokyo	.84***

* $p < .001$

Date Collection

Based on Morrison et al.'s (1999) adaptation of the Kaplan and Norton (1996) BSC approach, the survey instrument for collecting data was designed. Among the four perspectives, the technical perspective was automatically measured by the HTML Toolbox of the Net Mechanic. The rest of the perspectives were measured by dichotomous questionnaires.

Evaluation of the Technical Perspective

The technical perspective consists of four factors: (a) link check, (b) load time, (c) HTML, and (d) browser compatibility. These four factors were measured by the HTML Toolbox service in the Net Mechanic. As shown in Table 11, each of the four tools contained in the HTML Toolbox has its own rating criteria. "The Net Mechanic uses a five-star rating approach to evaluate each Web site, based on the four previously stated criteria" (Ismail et al., 2002, p. 171). Therefore, each Web site can receive a maximum score of 20 points.

Link check tests each link to identify, locate, and report any broken or bad links that drive customers away. The link check rating is based on the number of bad links on each Web site (Net Mechanic, 2009).

Load time check tests Web sites for slow download time. The load time rating is based on the time required to load each Web site using a 28.8 modem. A two second connection time penalty is added for every Web site server that must be accessed to load each Web site and its graphics (Net Mechanic, 2009).

HTML check discovers bad tags and syntax that prevent the browser from processing the HTML. The HTML rating is based on the number of HTML errors found on the Web sites (Net Mechanic, 2009).

The browser compatibility check discovers problems causing compatibility errors. The browser compatibility rating is based on the number of compatibility problems affecting more than 10% of each Web site (Net Mechanic, 2009).

Table 11

Technical Analysis Rating Scale

	Link Check	Load Time	HTML	Browser
5 stars	0 bad links	< or = 13 seconds	0 errors	0 problems
4 stars	1 bad link	< or = 24 seconds	< or = 6 errors	< or = 4 problems
3 stars	2 bad links	< or = 35 seconds	< or = 12 errors	< or = 8 problems
2 stars	3 bad links	< or = 46 seconds	< or = 18 errors	< or = 12 problems
1 star	More than 3 bad links	> 46 seconds	> 18 errors	> 12 problems

Note. From "Explore Bed & Breakfast Web sites: A Balanced Scorecard Approach," by S. F. Kline, A. M. Morrison, and A. John, 2004, *Journal of Travel & Tourism Marketing*, 17(2/3), 253-267.

Evaluation of the User Friendliness, Event, and Regional Perspectives

The BSC approach is a relatively subjective research method. To overcome this weakness relating to subjectivity, diverse trials have been contrived. Morrison et al. (2004) have stated that “the measurement scales were changed from Likert formats to dichotomous ‘yes/no’ questions indicating the presence or absence of specific site features...this removed the aforementioned level of subjectivity” (p. 238). So and Morrison (2004) also have suggested the dichotomous scale to increase the objectivity of the BSC approach. In research they conducted to evaluate the performance of the National Tourism Organization Web sites, marketing, customer, and destination information perspectives were measured by the dichotomous scale. This dichotomous scale is referred to as the ‘yes/no approach,’ with “yes” indicating that the attribute was present and “no” that the attribute was not present (So & Morrison, 2004). To assess the user friendliness, event, and regional perspectives, 27 dichotomous questions were conducted (see Appendix B).

Data Analysis

Depending on either a five stars range or the dichotomous scale, different analysis approaches were applied. Since the BSC approach should be measured from four perspectives, the maximum score of each weighted score was .25.

In the technical perspective, based on rating criteria in the HTML Toolbox of the Net Mechanic, each Web site was supposed to receive from 4 stars to 20 stars. Each

Web site was ranked by the total number of stars it received. Moreover, ‘the percentage of the number of stars out of the most number of stars they could receive’ and ‘the weighted technical score’ in the technical perspective were calculated as follows:

$$\text{Percentage (\%)} = \frac{\text{the number of stars each Web site earns}}{20 \text{ (the most number of stars each Web site could receive)}} \times 100$$

$$\text{Weighted Technical Score (\%)} = \frac{\text{the percentage of each Web site}}{4 \text{ (the total number of perspectives)}}$$

With regard to the user friendliness perspective, 10 dichotomous questions were conducted to evaluate four categories: (a) the ease of navigation, (b) the availability of the link for relevant sources, (c) the language, and (d) the accessibility for users with disabilities. This dichotomous scale was referred to as the ‘yes/no approach.’ ‘The percentage of the number of yes responses out of the total number of questions’ and ‘the weighted user friendliness score’ in the user friendliness perspective were calculated as follows:

$$\text{Percentage (\%)} = \frac{\text{the number of yes response each Web site earns}}{10 \text{ (the total number of questions)}} \times 100$$

$$\text{Weighted User Friendliness Score (\%)} = \frac{\text{the percentage of each Web site}}{4 \text{ (total number of perspectives)}}$$

Moreover, in the event perspective, there were 12 dichotomous questions. These 12 questions were divided into four categories: (a) Olympic Games, (b) Paralympic Games, (c) bidding process, and (d) marketing. The dichotomous scale in this perspective was also referred to as the ‘yes/no approach.’ ‘The percentage of the number of yes responses out of the total number of questions’ and ‘the weighted event score’ in the event perspective were calculated as follows:

$$\text{Percentage (\%)} = \frac{\text{the number of yes response each Web site earns}}{12 \text{ (the total number of questions)}} \times 100$$

$$\text{Weighted Event Score (\%)} = \frac{\text{the percentage of each Web site}}{4 \text{ (the total number of perspectives)}}$$

Finally, in the regional perspective, there were five dichotomous questions. These five questions represented the city’s annual climate, transportation, airport, accommodations, and image, respectively. This perspective’s scale also had the same ‘yes/no approach’ with event and user friendliness perspectives. ‘The percentage of the number of yes responses out of the total number of questions’ and ‘the weighted regional score’ in the event perspective were calculated as follows:

$$\text{Percentage (\%)} = \frac{\text{the number of yes response each Web site earns}}{5 \text{ (the total number of questions)}} \times 100$$

$$\text{Weighted Regional Score (\%)} = \frac{\text{the percentage of each Web site}}{4 \text{ (the total number of perspectives)}}$$

CHAPTER IV: WEB SITE MECHANICALLY STRUCTURED

This study attempted to explore the Web sites of the four 2016 Summer Olympic and Paralympic Games' candidate cities. These four Web sites are deliberately created in order to promote belonged cities competing to host both games. Without a doubt, the candidate cities' Web sites must be not only mechanically well-structured, but also providing sufficient information about games and cities.

Based on the technical and user friendliness perspectives, how each Web site is mechanically well-structured was evaluated through the BSC approach. Moreover, based on the evaluation, each Web site was compared.

Evaluating Effectiveness of the Candidate Cities' Web sites

Technical Perspective

Technical perspective was evaluated with using four categories: link check, load time, HTML, and browser. Based on their own rating criteria in the HTML Toolbox of the Net Mechanic, each Web site could get one to five stars per category and a total of 20 stars maximum. The Web sites were then ranked in order from the highest to the lowest total number of stars for technical perspective.

Among the four candidate cities' Web sites, Tokyo's was at the top in this perspective. In particular, Tokyo, in the link check category, received a maximum score of five stars (0 bad links) and three stars (33.32 sec) in the load time category. For the

HTML and browser categories, Tokyo received three stars (8 errors) and two stars (10 problems) respectively (see Table 12).

Table 12

Technical Perspective Evaluation on Tokyo's Web site

Technical Perspective	Tokyo
Link Check	0 bad links (5stars,*****)
Load Time	33.32 sec (3stars,***)
HTML	8 errors (3stars,***)
Browser	10 problems (2stars,**)
Total	13 stars

While this Web site received only one star (5 bad links and 156 sec) in the link check and the load time categories, Madrid's Web site got five stars (0 errors) in the HTML category and four stars (3 problems) in the browser category (see Table 13).

Table 13

Technical Perspective Evaluation on Madrid's Web site

Technical Perspective	Madrid
Link Check	5 bad links (1star,*)
Load Time	156 sec (1star,*)
HTML	0 errors (5stars,*****)
Browser	3 problems (4stars,****)
Total	11 stars

As shown in Table 14, Rio de Janeiro's Web site, in the link check category, received five stars (0 bad links) and in the load time category, got one star (71.2 sec).

For the HTML and browser categories, three stars (10 errors) and one star (16 problems) were received respectively.

Table 14

Technical Perspective Evaluation on Rio de Janeiro's Web site

Technical Perspective	Rio de Janeiro
Link Check	0 bad links (5stars,*****)
Load Time	71.2 sec (1star,*)
HTML	10 errors (3stars,***)
Browser	16 problems (1star,*)
Total	10 stars

Chicago's Web site hit the bottom in this measurement. Over all, this Web site received one to two stars in all four factors of technical perspective. In the link check, load time, and HTML categories, two stars (3 bad links, 46 sec, and 13 errors) were assigned. One star (25 problems) was assigned to the browser category (see Table 15).

Table 15

Technical Perspective Evaluation on Chicago's Web site

Technical Perspective	Chicago
Link Check	3 bad links (2star,**)
Load Time	46 sec (2star,**)
HTML	13 errors (2star,**)
Browser	25 problems (1star,*)
Total	7 stars

In the link check category, both Tokyo and Rio de Janeiro received five stars - as many as they could get. Among the four cities, Madrid ranked first in both the HTML

(five stars) and browser (four stars) categories. The result of evaluating technical perspective was in the range of 35% to 65 % based on the percentage for each value. The percentage illustrates each technical perspective of the candidate cities as a fraction of a whole. Tokyo, which got 13 out of 20 stars, was ranked first. Madrid (11 stars), Rio de Janeiro (10 stars), and Chicago (7 stars) ranked lower than Tokyo in the order they are listed.

Since this study applied the BSC approach having four perspectives, weighted scores of the each category can be a maximum of 25%. As shown in Table 16, Tokyo had 16.3% out of a quarter in the four weighted scores. In the same way, Madrid had 13.8%, Rio de Janeiro had 12.5%, and Chicago had 8.8%.

Table 16

Technical Rankings, Percentage, and Weighted Scores

Rankings	Cities	Percentage (100%)	Weighted Scores (25%)
1	Tokyo	65%	16.3%
2	Madrid	55%	13.8%
3	Rio de Janeiro	50%	12.5%
4	Chicago	35%	8.8%

User Friendliness Perspective

User friendliness perspective was evaluated with using four categories: (a) ease of navigation, (b) availability of link for relevant sources, (c) language, and (d) accessibility for users with disabilities. In the yes/no approach of user friendliness

perspective, there were a total number of ten questions. The percentage illustrates this user friendliness perspective of the candidate cities as a fraction of a whole.

As shown in Table 17, Tokyo, which took the first place, got eight out of ten yes responses. Madrid got seven yes responses, and ranked lower than Tokyo. And both Chicago and Rio de Janeiro got the same five yes responses.

The four candidate cities' Web sites had functions for site search, site map, and link to home page. These navigation tools help users know where they are, where they have been, and where they can go (Nielsen, 2000). Therefore, it can be said that the Web sites were very easy to navigate.

In the availability of link for relevant sources category, the Web sites of Tokyo and Madrid had the most links for relevant sources. More specifically, Tokyo's Web site had links for the city, the IOC, and the organization, and Madrid's had links for the city, volunteering, and the organization. While these two Web sites had three links for relevant sources, Chicago's and Rio de Janeiro's had two links and one link respectively. In particular, no Web site had a link for the IPC.

For accessibility to international users, most Web sites were sufficient in providing various languages. This result shows that while Tokyo, Madrid, and Rio de Janeiro Web sites had four or five language choices, Chicago's had only three choices, English, French and Spanish.

With regard to the accessibility for users with disability, most Web sites did not have concerns for people with disabilities. Tokyo's Web site was one with function adjusting text size.

Table 17

User Friendliness Perspective Evaluation

User Friendliness Perspective				
Ease of Navigation	Tokyo	Madrid	Chicago	Rio de Janeiro
site search	+	+	+	+
site map	+	+	+	+
home page	+	+	+	+
Availability of Link for Relevant Sources	Tokyo	Madrid	Chicago	Rio de Janeiro
city Web site	+	+		
volunteering		+	+	
IOC	+			
IPC				
contacting organization	+	+	+	+
Language	Tokyo	Madrid	Chicago	Rio de Janeiro
other language	+	+		+
Accessibility for Users with Disabilities	Tokyo	Madrid	Chicago	Rio de Janeiro
text size	+			

Based on the responses each Web site obtained, percentages as a fraction of a whole were computed. These percentages were in the range of 50% to 80% based on the percentage for each value.

Since this study applied the BSC approach, the maximum score for each category is 25%. As shown in Table 18, Tokyo had 20.0% out of a quarter in the four weighted scores and took the first ranking. Madrid had 17.5%. In the same way, both Chicago and Rio de Janeiro had 12.5%.

Table 18

User Friendliness Rankings, Percentage, and Weighted Scores

Rankings	Cities	Percentage (100%)	Weighted Scores (25%)
1	Tokyo	80%	20.0%
2	Madrid	70%	17.5%
3	Chicago Rio de Janeiro	50%	12.5%

Comparing the Candidate Cities' Web site Effectiveness

Technical Perspective

Since people have been interested in applying the BSC approach to evaluating the Web sites' performance effectiveness, technical perspective is being considered as a necessary aspect (Feng et al., 2003; Morrison et al., 1999; So & Morrison, 2004). Based on link check, load time, HTML, and browser categories, the technical perspective was identified.

According to the Net Mechanic (2009), link check identifies and reports the number of bad or broken links in a particular Web site. As the most important part of hypertext, links connect the pages and allow users to go to new and exciting places on the Web (Nielsen, 2000). Based on the definitions above, bad or broken links are literally referred to as a bad or broken connection in an HTML document to a URL that is not working properly. In particular, this bad or broken connection actually results in 'page not found', a time out, or other kinds of errors.

While being unable to find any bad or broken links in the Web sites of Tokyo and Rio de Janeiro, the HTML Toolbox of the Net Mechanic uncovered three and five bad or broken links in the sites of Chicago and Madrid, respectively. Regardless of how important a Web site is, any kind of error, such as 'page not found,' negatively influences Internet users' perceptions. What if users find 'page not found' in an official Web site representing an Olympic and Paralympic candidate city?

Load time is generally defined as the amount of time needed to open a particular Web site. In this study, load time was referred to as downloading time measured by the HTML Toolbox (Net Mechanic, 2009). It was assumed that a 28.8 modem was used. As load-time is an important component in Web site design, reduced load time positively influences users (Brinck, Gergle, & Wood, 2002). Basically, Web sites of the candidate cities must have been designed to be viewed by people all over the world. In other words, these Web sites have to not only handle a spike in traffic, but must also consider users accessing through dial-up Internet access (Internet access via telephone lines).

According to the research findings, the four Web sites' levels of load time were not sufficient. Even though Tokyo received only three out of five stars, its Web site was ranked first with the fastest load time (33.32 sec). In particular, comparing the total number of stars each category received on the four candidate cities, the load time category received the least number of stars. While the link check, HTML, and browser categories in the four Web sites received a sum of 13, 13, and 8 stars respectively, the load time category in these Web sites received 7 stars. The load time ranks they received indicate that there is considerable room for advancement in this category. If the modem

speed is equally set, load time is basically determined by how big the files are.

Sophisticated graphics and design are effective in catching people's attention when it comes to creating a Web site. However, it is also true that long load time negatively affects evaluations of the Web sites by users (Dellaert & Kahn, 1999).

As a basic formatting language which makes it possible for a Web site to lay out information and publish a formatted page to the Web, HTML (hypertext mark-up language) defines the structure and layout of a Web document by using a variety of tags and syntax (Donnelly, 2001). Tag is a command inserted in a document specifying how the document should be formatted, and syntax is referred to as the spelling and grammar of a programming language (Sterne, 2002). If a Web site has bad tags, syntax, or any other errors relating to formatting language, the browser is prevented from processing the commands written by the HTML (Net Mechanic, 2009). Accordingly, the HTML category reflects the accuracy of HTML design code on the Web page (So & Morrison, 2004).

The total number of stars received in the HTML category, which four Web sites obtained, was the same as the one received in the link check category. As the two highest ranked categories, link check and HTML received 13 out of 20 stars. In addition to the overall rate, no Web site received the lowest rating (one star) that could be received in this category. Particularly, the Web site of Madrid, which received the lowest rate (five bad links and 156 sec) in the link check and load time categories, was ranked first (0 errors) in this category. Of course, compared to the other categories, especially the load time and browser categories, the overall and even individual rates of the HTML

category don't seem to be seriously poor. However, even if the overall rate is sufficient to be considered as an effective Web site, even a few bad tags and syntax could cause a negative influence on Web site usability because tag and syntax are dominant HTML elements in constructing HTML documents.

A browser is an application for locating and displaying Web contents (Nielsen, 2000). In the browser category, any errors causing compatibility problems were found. For Web sites, compatibility is referred to as the ability to work on different browsers, not just on different computers (Nielsen & Loranger, 2006). Even though the most popular browser, Microsoft Internet Explorer, gained the upper hand on the commercial side with close to 75 percent market adoption (Holmes, 2002), more recently, new browsers such as Firefox, Chrome, Apple's Safari, and Opera have gained some market share (Nielsen & Loranger, 2006). Therefore, compatibility is worth being considered.

According to the research findings, not only did no Web site receive five stars, but also every Web site, except for Madrid's, received less than half of the total number of stars it could receive. Particularly, even Tokyo's Web site, the most effectively run Web site, had 10 problems (two stars). Of course, based on the dominant usage of Internet Explorer, these low rates on this browser category could be overlooked. However, problems which would be caused by lack of compatibility are not limited to the usage of different browsers. These problems occur when using new versions of Internet Explorer because Microsoft is resuming development of the Internet Browser and launching new versions (Nielsen & Loranger, 2006).

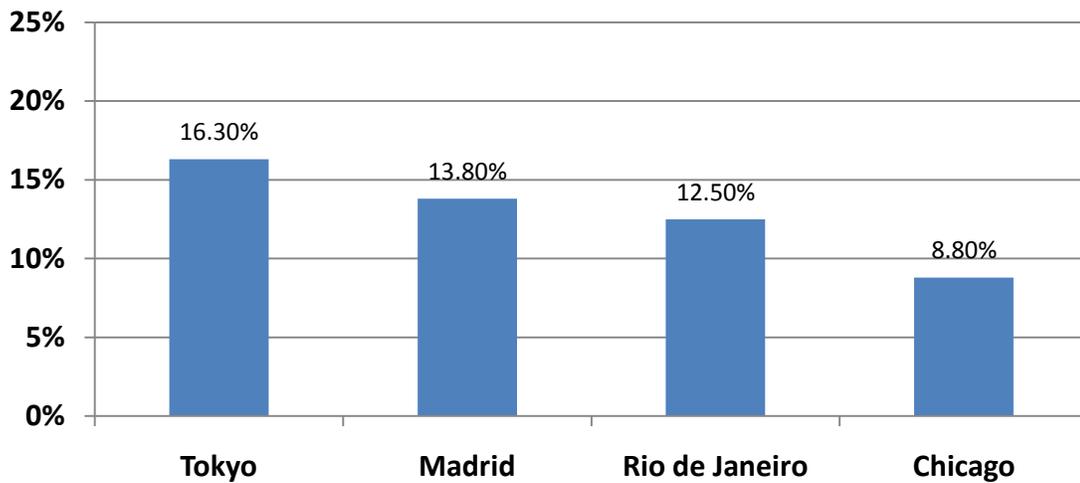


Figure 2. Technical Weighted Scores

In the technical perspective, the aggregated weighted score of the four candidate cities is 51.4% out of 100%. Based on the findings of the technical perspective, it is indicated that the Web sites of the four candidate cities were not run most effectively. Moreover, among the four Web sites, while the weighted score of the Tokyo's was the highest, Chicago's had the lowest weighted score. To compare performance effectiveness of the four Web sites of the candidate cities, weighted scores (see Figure 2) were calculated, and a ranking of the four Web sites was performed. According to the findings, Tokyo and Madrid's Web sites have been running more effectively than the other cities' Web sites. As shown in Figure 2, while the Web sites of Tokyo and Madrid received 16.3% and 13.8% weighted scores respectively, those of Rio de Janeiro (12.5%) and Chicago (8.8%) not only received lower weighted scores than Tokyo and Madrid, but also received only 50% of the total score they could receive and lower weighted scores in the technical perspective. Accordingly, Tokyo ranked first with the

highest weighted score. Madrid and Rio de Janeiro ranked lower than Tokyo in the order they are listed. Chicago had the lowest weighted score in the technical perspective.

Through differently assigned weighted scores, it is clearly shown that Rio de Janeiro and Chicago not only need to significantly increase the performance level of their Web sites, but were also not effectively applying technical principles to their Web sites. In addition, as compared to the weighted score of Tokyo's Web site, Chicago's (8.8%) received about half of the total score that Tokyo's (16.3%) had received. Even though the HTML Toolbox might have a variable internal reliability, this different score can be referred to as a significant difference.

User Friendliness Perspective

The more user friendly a Web site is, the more users are likely to continue to utilize the Web site (Kline et al., 2004). Like the technical perspective, the user friendliness perspective is also closely associated with factors making Web sites mechanically well-structured. Based on ease of navigation, the availability of links for relevant sources, language, and accessibility for users with disabilities, the user friendliness perspective was identified. These four categories are closely associated with usability. As one of the most common terms in the Web industry (Holmes, 2002), "usability means that a person of average ability and experience can use the thing for its intended purpose without getting hopelessly frustrated" (Krug, 2006, p. 5).

In general, ease of navigation is considered very important in Web site structure (Ismail et al., 2002). Nielsen (2000) states that "the Web is a navigational

system...because the space is so vast, navigation is difficult, and it becomes necessary to provide users with navigational support beyond the simple 'go-to' hyperlinks" (p. 188). In addition, one of the most common problems that Web site users have is that they cannot find what they are looking for (Donnelly, 2001).

In the ease of navigation category, all four Web sites had site search, site map, and links to home page functions. In other words, they obtained as many yes responses as they could. According to Krug (2006), there are two purposes of navigation tools in a Web site. One of the purposes is to help users find whatever it is they are looking for. Another purpose is to tell users where they are. Therefore, this result shows that the four Web sites were easy to navigate, meaning the Web sites made it easy to find what users are looking for, and easily recognize where they are.

However, even though the four Web sites all had functions they should have in this category, a distinction relating to the site search was found. While the Web sites of Madrid, Chicago, and Rio de Janeiro had internal search engines to search only the sites users were on, Tokyo's had the large, external search engine Yahoo!® Japan. With regard to the external search engines such as Google™, Yahoo!®, and MSN®, Nielsen and Loranger (2006) state that Web sites should not "offer the option of searching the entire Web. Web users already have their own favorite search engines, and when they want to search the Web, they'll go to those" (p. 143). Moreover, the Japanese based search results would cause an inconvenience to international users.

With respect to the availability of links to relevant sources, Kline et al. (2004) states that more relevant sources make experiences with the Web site more tangible for

users. Also, as suggested in diverse research fields (Ismail et al., 2002; Morrison et al., 1999; So & Morrison, 2004), a Web site should not be just an electronically designed brochure; it should be a place intentionally designed for two-way interactivity, on-demand availability, and customization. In particular, the links for relevant sources let users more effectively access where they want to reach, and allow them to obtain what they want to get. In this category, while the Web sites of Tokyo and Madrid had three links for relevant sources, Chicago's and Rio de Janeiro's had two links and one link respectively.

The availability of the link for relevant sources category consists of five factors: city Web site, volunteering, IOC, IPC, and contacting the organization. With regard to the Olympic and Paralympic Games, the host city, the IOC, and the IPC have legal, commercial, and financial rights and obligations (IOC, 2007). From this point of view, even if each Web site has limited information about these bodies organizing the Olympic and Paralympic Games, links for these bodies are indispensable for providing easy accessibility to the resources, whatever they are. However, only the Web sites of Tokyo and Madrid provided links for the official cities' Web sites, and Tokyo's was a solitary Web site which had a link to the IOC. Moreover, even though the Paralympic Games have taken place in the same years and same venues as the Olympic Games, none of the Web sites had a link for the IPC. With regard to volunteering and contacting the organization, while all Web sites had links for contacting the organization, only half of the Web sites provided links for volunteering. As many believe, the Web site is an effective communication tool. In particular, as one of the Internet's features, two-way

interactivity makes people partially involved in the bid process. An opportunity of volunteering for the games would be a trigger for increasing the interactivity level. Diverse functions for interaction with users should be strengthened in the candidate cities' Web sites.

The rest of the categories, language and accessibility for disabled people, are also closely associated with Web accessibility. The ideal international Web site is one that is available in the user's preferred languages (Donnelly, 2001). As a communication tool relating to one of the biggest global events, the number of language options plays a key role in increasing the accessibility to users all over the world.

While most of the Web sites were referred to as having sufficient language options, most of them did not have enough consideration for people with disabilities. The online information provides many benefits to users with disabilities compared to printed information. In connection to these benefits, Nielsen (2000) states that "the most serious accessibility problems relate to users with visual disabilities because most Web pages are highly visual" (p. 302). From this point of view, only the presence of functions for people with visual disabilities was tested. Since only Tokyo's Web site has this function, it can be said that most Web sites do not have consideration for accessibility for users with disabilities. In addition to the users with visual disability, users with other types of disabilities, such as auditory, speech, motor, and even cognitive, should also be carefully considered.

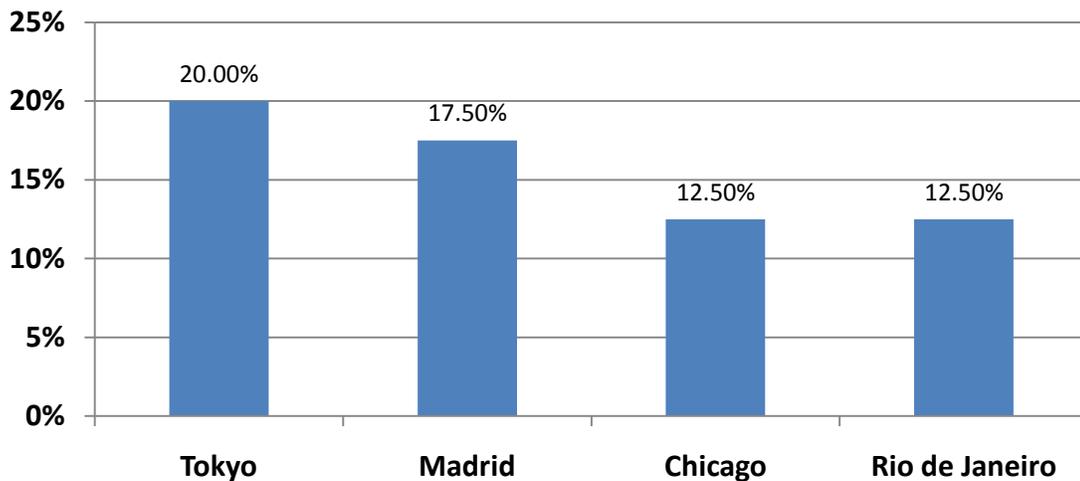


Figure 3. User Friendliness Weighted Scores

In the user friendliness perspective, the aggregated weighted score of the four candidate cities is 62.5% out of 100%. This aggregated weighted score is relatively higher than the technical perspective's (51.4%). Nevertheless, there is considerable room for advancement in the user friendliness perspective. In particular, while most Web sites are easy to navigate, the Web sites of Chicago and Rio de Janeiro are not easy to access due to the lack of links for relevant sources. As shown in Figure 3, Tokyo's Web site ranked first with 20% weighted score and Madrid's ranked next with 17.5% weighted score. Thus, it can be said that Tokyo and Madrid have effectively performing Web sites. In particular, these two Web sites obtained 36.3% (technical weighted score 16.3% + user friendliness score 20%) and 31.3% (technical weighted score 13.8% + user friendliness weighted score 17.5%) weighted scores out of the 50% which is the summed weighted score each Web site could receive in both the technical and user friendliness perspective. On the other hand, the Web sites of both Chicago and Rio de Janeiro had

the lowest weighted scores of 12.5%. Therefore, Chicago's and Rio de Janeiro's Web sites respectively obtained 21.3% and 25% aggregated weighted scores out of the 50%. The Web sites of Chicago and Rio de Janeiro received weighted scores of only half or less weighted scores than they could receive in both perspectives.

CHAPTER V: WEB SITE SUFFICIENTLY INFORMATIVE

Based on the event and regional perspectives, how each Web site is sufficiently providing information was evaluated through the BSC approach. Moreover, based on the evaluation, each Web site was compared.

Evaluating Effectiveness of the Candidate Cities' Web sites

Event Perspective

Event perspective was evaluated based on four categories: (a) the Olympic Games, (b) the Paralympic Games, (c) the bidding process and (d) marketing. There were total 12 dichotomous questions in event perspective. In the same way as the user friendliness perspective, the percentage indicates the event perspective of the candidate cities as a fraction of a whole.

In the event perspective, Chicago's Web site ranked at the top with 9 out of 12 yes responses. Next were Rio de Janeiro's and Tokyo's with an equal amount of eight yes responses. And Madrid's ranked the lowest with five yes responses. In other words, while Chicago's had the most sufficient information, Madrid's was the Web site that had the least information on the Olympic and Paralympic Games as well as marketing concerning both games.

The Olympic Games category consists of history, movement, sports, and facilities as sub factors. As shown in Table 19, while Chicago's and Rio de Janeiro's had

three yes responses in the same sub factors, which are history, movement, and sports, they did not have sufficient information on facilities. However, Tokyo's and Madrid's had information on facilities. Interestingly, even though Madrid's did not obtain any yes response in both the history and movement factors, Madrid's had sufficient information on sport and facilities.

The Paralympic Games category consists of the same four factors as the Olympic Games category. Chicago's and Rio de Janeiro's had three yes responses in the same factors, which are history, movement, and sports. As shown in Table 19, they received yes responses in the same factors as they did in the Olympic Games category as well. While Tokyo's had information relating to the movement and facilities of the Paralympic Games, resources on Paralympic history and sports were insufficient. Madrid's received only one yes response in Paralympic history.

Any candidate city of the 2016 Olympic and Paralympic Games was supposed to submit the candidature file to the IOC on 12 Feb. 2009 (IOC, 2007). In general, a candidature file provides detailed resources concerning bid's concept of a candidate city (IOC, 2008). As shown in Table 19, the four Web sites had downloadable candidature files in Portable Document Format (PDF).

As one of the factors being made up of the event perspective, marketing factor was concerned. In this category, while the Web sites of Chicago and Tokyo received two yes responses, Rio de Janeiro's and Madrid's got only one response. More specifically, lists of the sponsorship partners were posted on the Web sites of Rio de Janeiro, Tokyo, and Madrid. However, Chicago's was the only Web site with an online merchandise

store. With regards to donation, half of the Web sites, Chicago's and Tokyo's had functions indicating how people can donate for bidding or hosting the games.

Table 19

Event Perspective Evaluation

Event Perspective				
Olympic Games	Chicago	Rio de Janeiro	Tokyo	Madrid
History	+	+	+	
Movement	+	+	+	
Sports	+	+		+
Facilities			+	+
Paralympic Games	Chicago	Rio de Janeiro	Tokyo	Madrid
History	+	+		+
Movement	+	+	+	
Sports	+	+		
Facilities			+	
Bidding Process	Chicago	Rio de Janeiro	Tokyo	Madrid
Candidature File	+	+	+	+
Marketing	Chicago	Rio de Janeiro	Tokyo	Madrid
Sponsorship		+	+	+
Shopping	+			
Donation	+		+	

Percentages as a fraction of a whole were computed based on the responses each Web site obtained. These percentages were in the range of 42% to 75% based on the percentage for each value.

Since this study applied the BSC approach, the maximum score for each category is 25%. As shown in Table 20, Chicago, the first ranked Web site, had 18.8% out of a quarter in the four weighted scores. Rio de Janeiro and Tokyo both had 16.7%. Likewise, Madrid had 10.4%.

Table 20

Event Rankings, Percentage, and Weighted Scores

Rankings	Cities	Percentage (100%)	Weighted Scores (25%)
1	Chicago	75%	18.8%
2	Rio de Janeiro	67%	16.7%
	Tokyo		
4	Madrid	42%	10.4%

Regional Perspective

Both user friendliness and event perspectives have four categories, and some of the categories of the perspectives are made up of multiple questions. However, unlike the two perspectives, the regional perspective is made up of five questions without any category.

Regional perspective was evaluated based on five questions: the city's annual climate, transportation, airport, accommodation, and image respectively. The percentage illustrates regional perspective of the candidate cities as a fraction of a whole.

As shown in Table 21, the Web site of Madrid ranked first and received four out of five yes responses. Chicago's and Rio de Janeiro's got three yes responses and ranked lower than Madrid's. In addition, Tokyo's ranked the lowest with one yes response.

Likewise the rest of the perspectives, percentages as a fraction of a whole were computed based on the responses each Web site obtained. These percentages were in the range of 20% to 80% based on the percentage for each value.

Table 21

Regional Perspective Evaluation

	Regional Perspective			
	Madrid	Chicago	Rio de Janeiro	Tokyo
Annual Climate				
Transportation	+	+	+	
Airport	+	+		
Accommodation	+		+	
Image	+	+	+	+

Since this study applied the BSC approach, the maximum score for each category is 25%. As shown in Table 22, Madrid's, the first ranked Web site, had 20% out of a quarter in the four weighted scores. Chicago's and Rio de Janeiro's both had 15%. Likewise, Tokyo's had 5%.

Table 22

Regional Rankings, Percentage, and Weighted Scores

Rankings	Cities	Percentage (100%)	Weighted Scores (25%)
1	Madrid	80%	20.0%
2	Chicago	60%	15.0%
	Rio de Janeiro		
4	Tokyo	20%	5.0%

Comparing the Candidate Cities' Web site Effectiveness

Event Perspective

In this study, two primary features of effective Web site were defined as (a) the Web site is mechanically well-structured and (b) the Web site is sufficiently informative.

More specifically, while three perspectives - technical, user friendliness, and regional - were applied from previous research, this event perspective was newly developed and applied to candidate cities' Web site evaluation. In other words, it can be said that this perspective has the most distinguished categories and items reflecting the candidate cities' Web sites.

The effective Web site's second feature, whether it is sufficiently informative, is closely associated with the contents and resources relating to the event and region. Internet users visit Web sites for their contents and resources (Nielsen & Loranger, 2006). To emphasize this idea, Nielsen (2000) states that "everything else is just the backdrop" (p. 99). In other words, a technically well-structured or user-friendly Web site has as its purpose the effective presentation of sufficient information to meet people's needs.

As many believe, the goals of the Olympic and Paralympic movements are basically dependent on the games (Burbank, Andranovich, & Heying, 2001). Based on the four categories - Olympic Games, Paralympic Games, bidding process, and marketing - the event perspective was identified. These four categories are closely related to contents and resources about the Olympic and Paralympic Games.

To host one of the greatest media events of the modern era (Majid, 2005), the four candidate cities are putting all of their efforts into their publicity works. As Majid (2005) regards them as media events, the Olympic and Paralympic Games are strongly related to the media platform. Even though the current relationship between the games and the media platform tends to subvert Olympic and Paralympic ideals (Coakley,

2006), it is impossible for the games to be run without media platforms. In particular, as one of the media platforms, the Internet plays a significant role in providing the general public with contents and resources relating to the games.

The Olympic and Paralympic Games have their origin in ancient Olympics. More specifically, based on numerous popular myths, the games are identified as historical creatures (Majid, 2005). In addition to the history of the games, the Olympic and Paralympic movements are distinguishing features that make the games more special than other global events. As mentioned about the games' impacts, the Olympic and Paralympic Games have diverse impacts: economic and environmental. To make positive impacts, the Olympic and Paralympic movements are deliberately organized by the IOC and IPC.

As Web sites relating to the Olympic and Paralympic Games, they have various kinds of information relating to the games. Moreover, based on the research findings, it can be said that Chicago's and Rio de Janeiro's Web sites grant balanced value on both games because they received an equal number of 'yes responses' at the same items on both games. On the other hand, Tokyo's and Madrid's Web sites tend to place more value on the Olympic Games than the Paralympic Games. In other words, it can be said that they do not deal with the Paralympic Games as an equivalent of the Olympic Games.

In the past, the Olympic and Paralympic Games have not been hosted at the same time and same place. Unlike the current Paralympic Games, the Paralympic Games used to take place in a different year than the Olympic Games as well as in a different venue.

More specifically, the 1988 Summer Paralympic Games were the first Paralympic Games that were held concurrently with the Olympic Games. Now, however, the Paralympic Games take place in the same year, following the Olympic Games.

Since the 1988 Summer Olympic and Paralympic Games, numerous efforts and trials to secure the 'one bid, one city' have been continuing. For instance, during the 2000 Summer Paralympic Games, a 'Cooperation Agreement' between the IOC and IPC was signed by the presidents of the two organizations (Paralympian, 2000). The areas of cooperation include the representation of the IPC in IOC Commissions for subjects such as evaluation for the games, coordination for the Olympic Games, culture and Olympic education, athletes, women, and the sport working group (Paralympian, 2000).

However, despite numerous efforts and trials for balanced value for both games, relative to the Olympics, the Paralympic Games are not only under-represented, but also marginalized (Hums & Fay, 1995; Fay, Burton, & Grevemberg, 2001). Furthermore, even though the Paralympic Games are already the world's second largest sports event after the Olympic Games (Riordan & Kruger, 1999), this phenomenon has persisted and has been largely seen as legitimate. In particular, even though the Web sites are for the bid for the Olympic and Paralympic Games, this marginalization is found on the Web sites as well. Without a doubt, the balanced value on both games is necessary for the candidate cities to convince people of their willingness to host the Paralympic Games as well as the Olympic Games.

The cities accepted as candidate cities by the IOC Executive Board are required to submit a candidature file to the IOC. In general, the candidature file consists of

answers to the IOC's candidature procedure and questionnaire (IOC, 2009c). According to the research findings, the four Web sites provide downloadable candidature files. However, while Chicago's and Madrid's Web sites provide the files with different language versions, Rio de Janeiro's and Tokyo's Web sites have only files written in English. Like the language category of the user friendliness perspective, various language versions play a significant role in increasing the accessibility of users all over the world. As a file providing the most comprehensive information about the bid's concept, the candidature files should be provided with various language versions.

With respect to the marketing category, So and Morrison (2004) state that the "Web site should apply well-accepted marketing principles such as marketing segmentation, relationship marketing, and partnership" (p. 102). Of course, people would overlook the marketing principles with regard to the candidate cities because the bid process is all about the Olympic and Paralympic Games governed by two non-profit organizations, the IOC and the IPC. However, how can a non-profit organization govern a global event required to exceed \$40 billion without marketing principles?

Schwartz (2007) announced 'The World's Most Valuable Sporting Event Brand' and each brand value with respect to each sporting event. According to the announcement, the summer and winter Olympic Games have \$176 million and \$82 million values respectively (Schwartz, 2007). In particular, if we consider that the Olympic Games cover more than 15 days, the Summer Olympic Games would be ranked as the most valuable sporting event in the world. In addition to the Olympic Games, the

value and awareness of the Paralympic Games have been increasing dramatically in recent decades (Burton, 2000).

As valuable as the Olympic and Paralympic Games are, numerous commercial organizations which are intended to generate support for the Olympic and Paralympic movement want to make a contract for sponsorship. More specifically, the Olympic and Paralympic Games are funded by corporate sponsorship agreements, some of which are valued at more than \$50 million over four years (Masteralexis, Barr, & Hums, 2005). In addition, sponsorship contributes more than 40% of Olympic and Paralympic revenue (IOC, 2009d). Based on the weight of the sponsorship in the revenue, the importance of the sponsorship for the candidate cities is obvious. Most of the candidate cities' Web sites provide logos and links of their own sponsors. These relationships not only make the organizing committees financially stable, but also force the sponsors to make effective marketing platforms.

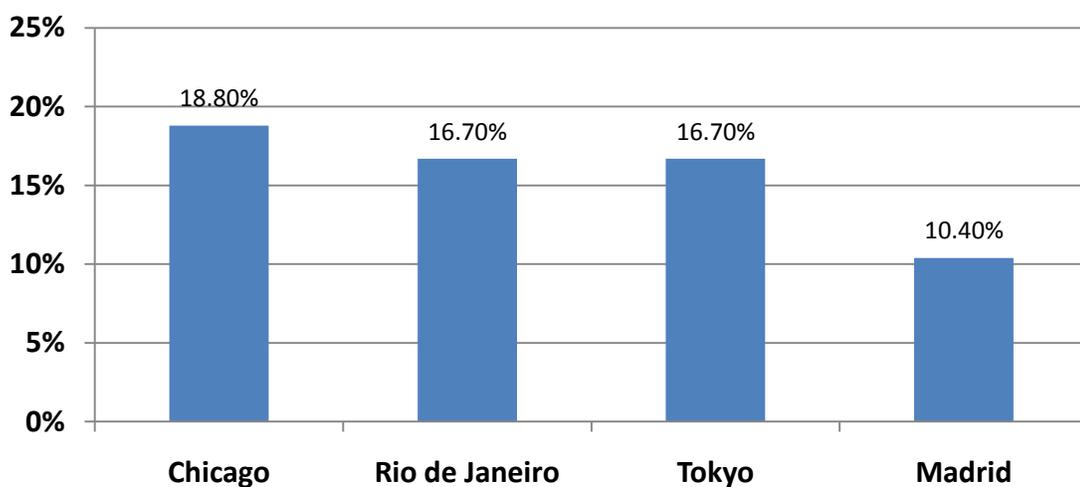


Figure 4. Event Weighted Scores

While most Web sites provide logos and lists of the sponsors, they do not have sufficient contents for shopping and donations. Generally, in the candidate cities' Web sites, the primary purposes of the shopping and donation functions are not to make direct profits. In general, these functions play a significant role in encouraging people to become partially involved in the bid process as some of the stakeholders.

In the event perspective, the aggregated weighted score of the four candidate cities is 62.6% out of 100%. This aggregated weighted score is the highest score among four perspectives: technical, user friendliness, event, and regional. Furthermore, to compare the four Web sites of the candidate cities, the weighted scores were calculated, and the four Web sites were ranked (see Figure 4). Based on the research findings of the event perspective, it can be said that most of the Web sites of the candidate cities focus more on providing information on events than on other concerns. Among the four Web sites, while the Chicago's had the highest weighted score, Madrid's was the lowest. As shown in Figure 4, while Chicago's (18.8%), Rio de Janeiro's (16.7%), and Tokyo's (16.7%) Web sites received more than half of the total amount of weighted score they could receive, Madrid's (10.4%) obtained less than half of the score it could receive. Therefore, it is shown that Madrid's has considerable room for improvement in the event perspective.

Regional Perspective

In a global economy, cities are eager to present themselves as attractive to potential investors, employers, and tourists (Holmes, 2001). Moreover, Holmes (2001)

states that “two new sets of city attributes - amenity and services - have become prominent locational determinants” (p. 226). From this point of view, by effectively showing regional information such as social infrastructure, the cities can promote themselves as appropriate places to visit or live. Therefore, the amount of information about the region that a Web site has was regarded as one of the four perspectives in this study.

Since the 1990s, global sports events have taken on additional functions as tourism spectacles (Zhou, 2006). Moreover, Olympic and Paralympic tourism has begun to be regarded as one of the key economic legacies for host cities and countries that have staged the Olympic Games and Paralympic Games. Regardless of the reasons people have for going to the Olympic and Paralympic Games - whether they are athletes, coaches, staff, or just spectators - their presence create an important aspect of the economic impact of the games (Masterman, 2007).

Without a doubt, the 2008 Summer Olympic and Paralympic Games played a significant role in attracting tourists' attention to Beijing, China. Furthermore, even though the games are over, the number of tourists in Beijing is continuously increasing (Market Avenue, 2008). Therefore, it can be said that hosting both games has a great influence in exposing a city to the public. Based on annual climate, transportation, airports, accommodations, and image, the regional perspective was identified. The selection of the four items belonging to the regional perspective, in this study, was based on two previous research studies (So & Morrison, 2004; Ismail et al., 2002).

According to the research findings, while most Web sites have cities' images and information on transportation, no Web sites have resources on climate or weather. In addition, half the numbers of Web sites have information on airports and accommodations. When presented properly, images can complement text descriptions (Nielsen, 2000; Nielsen & Loranger, 2006). Even though the four Web sites all have images, several differences about other items exist. For instance, while Tokyo's Web site is defined as the most highly visual, it lacks regional information. Instead of providing regional information in the Web site, Tokyo's Web site has a link to the official city of Tokyo Web site. On the other hand, Madrid's Web site has unbalanced weight on information between event and region. For instance, while Madrid's Web site is defined as least sufficiently informative in the event perceptive, Madrid's has the most diverse information on city and nation.

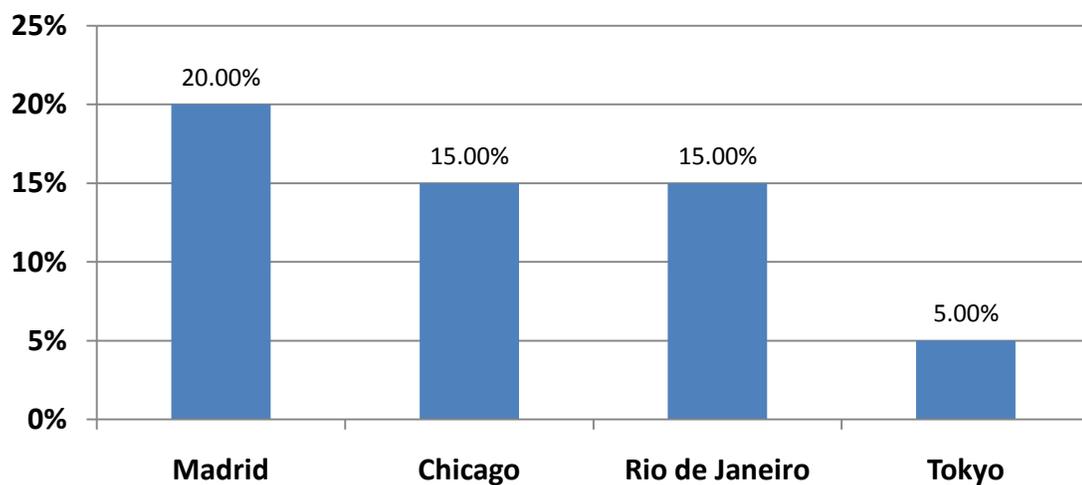


Figure 5. Regional Weighted Scores

In the regional perspective, the aggregated weighted score of the four candidate cities is 55% out of 100%. This aggregated weighted score is lower than event perspective's (62.6%) and the user friendliness perspective's (62.5%). Thus, it can be suggested that the candidate cities should have more regional information for visitors and tourists. As shown in Figure 5, Madrid's Web site ranked first with 20.0% weighted score and Chicago's and Rio de Janeiro's ranked next with 15% weighted score. Therefore, these three Web sites - Madrid, Chicago, and Rio de Janeiro - can be defined as sufficiently informative Web sites in the regional perspective. More specifically, Chicago, Rio de Janeiro, and Madrid obtained 33.8% (event weighted score 18.8% + regional weighted score 15%), 31.7% (event weighted score 16.7% + regional weighted score 15%), and 30.4% (event weighted score 10.4% + regional weighted score 20%) weighted score respectively out of the 50% which is the summed weighted score each Web site could receive in both the event and regional perspectives. On the other hand, Tokyo's Web site had the lowest weighted score: 5%. Therefore, Tokyo's Web site obtained 21.7% weighted score out of the 50%.

CHAPTER VI: SUMMARY, CONCLUSION, AND RECOMMENDATIONS

The purpose of this study was to measure the Web site effectiveness of the 2016 Summer Olympic and Paralympic Games' four candidate cities: Chicago, Madrid, Rio de Janeiro, and Tokyo. To overcome the dominant use of one-dimensional performance indicators and eschew the traditional approach grounded on financial reporting systems, the BSC approach was applied to this study. BSC is defined as a business performance measurement tool (Kaplan & Norton, 1996; So & Morrison, 2004). Based on the BSC approach, the four candidate cities' Web sites were reviewed following the four perspectives: (a) technical, (b) user friendliness, (c) event, and (d) regional.

In general, regardless of who the Web sites targeted and who the stakeholders are - whether they are IOC or IPC members, NOC or NPC members, local residents, and global residents - the Web sites maintained and supported by candidate cities are intended to enhance the communication level and positive image. More specifically, showing the availability to host the Olympic and Paralympic Games is referred to as the primary function.

This study consists of three phases: (a) conducting four perspectives and questions, (b) evaluating the effectiveness of the candidate cities' Web sites, and (c) comparing the candidate cities' Web site effectiveness. The process for bidding to host the games is a unique circumstance. Therefore, each research phase was carefully considered to be appropriate to the unique circumstances.

In the previous sections (Chapter 4 and 5), through the percentage grounded in the number of ‘stars’ or ‘yes responses’ and weighted scores, Web site effectiveness was reviewed and discussed. Based on research findings, it is identified that most of the Web sites are not run very effectively. In this section, Web site effectiveness is further illustrated by using the effectiveness continuum (see Table 23). This effectiveness continuum reflects different levels of effectiveness of the four Web sites following the five levels of continuum.

Table 23

Percentage Table of the Web site’s Effectiveness Continuum

Level of Effectiveness Continuum	Percentage of the number of ‘stars’ or ‘yes responses’
Very Strong	greater than or equal to 80%
Strong	greater than or equal to 60% less than 80%
Average	greater than or equal to 40% less than 60%
Weak	greater than or equal to 20% less than 40%
Very Weak	less than 20%

As shown in Table 24, while Chicago’s Web site is one of the most sufficiently informative Web sites, it is not mechanically well-structured. These phenomena would be explained as two aspects: the language hegemony on the Internet and fewer concerns about the local and global Internet circumstances.

As many believe, the Internet is a global phenomenon and English is the lingua franca (Poster, 2001). As a global phenomenon, the Internet and the Web site are often referred to as a potential comprehensive communication tool (Halavais, 2000). However, while English plays a significant role in the Web, this dominant language sometimes

leads the Web sites to have unbalanced content distributions. Even though the four Web sites provide English versions, the primary versions of three of the four Web sites are written in their own languages: Spanish, Portuguese, and Japanese. In general, if a Web site has various language versions, the one written in the vernacular has the most sufficient contents and resources. Therefore, it would be said that the Chicago Web site's features relating to sufficient information are closely associated with the language hegemony on the Internet.

According to the Internet World Stats (2009), the percentage of the Internet penetration in the United States is 74.7%. It is the second highest penetration percentage following to the Republic of Korea with 76.1%. Through this Internet circumstance, Chicago's Web site would be designed more mechanically and be more user-friendly on that basis. Therefore, through the low level of effectiveness in the technical and user friendliness perspectives, it can be said that Chicago's Web site lacks concerns about Internet usability.

Even though a Web site has sufficient contents and resources, if there are technical problems or factors causing inconvenience, the Web site would not be appealing to Internet users. Therefore, Chicago needs to be aware of the importance of Internet usability, pay more attention to resolve severe technical problems, and maintain the high level of informativeness even on other Web sites not written in English.

Table 24

Effectiveness Continuum of the Chicago's Web site

Four Perspectives	Level of Effectiveness				
	Very Weak	Weak	Average	Strong	Very Strong
Technical	Very Weak	Weak	Average	Strong	Very Strong
User Friendliness	Very Weak	Weak	Average	Strong	Very Strong
Event	Very Weak	Weak	Average	Strong	Very Strong
Regional	Very Weak	Weak	Average	Strong	Very Strong

Since the financial success of the Los Angeles Olympic Games changed the way cities and governments regarded the hosting of major sports events, the studies relating to the mega-sports events have become an important area of tourism and leisure literature (Gratton & Henry, 2001). In particular, global sports events have taken on additional functions as tourism spectacles (Zhou, 2006).

As the Olympic and Paralympic Games are getting closely associated with the hospitality industry, contents and resources for visitors relating to the games are regarded as some of the most important information. Based on the research findings, Madrid's Web site is not only referred to as the most effective Web site among the four candidate cities' Web sites, but also identified as the most informative Web site about information for visitors (see Table 25). In particular, this Web site seems to place more emphasis on contents about the candidate city, Madrid, than on the games.

Based on the extensive content analysis, it is also found that Madrid's Web site has exclusive features including links for accommodation reservations and descriptions of places of interest. More specifically, while the information on Madrid as the city prepared for tourism, culture, leisure, and entertainment is provided by using particularly

designed Web pages, the ones for the games are not well well-organized. Sufficient information on the city not only makes this Web site more attractive to prospective visitors, but also makes a solid relationship between the games and tourism. However, since this Web site is already identified as being unbalanced between event and region, this Web site needs to have more sufficient information about the games.

Table 25

Effectiveness Continuum of the Madrid's Web site

Four Perspectives	Level of Effectiveness				
Technical	Very Weak	Weak	Average	Strong	Very Strong
User Friendliness	Very Weak	Weak	Average	Strong	Very Strong
Event	Very Weak	Weak	Average	Strong	Very Strong
Regional	Very Weak	Weak	Average	Strong	Very Strong

As shown in Table 26, Rio de Janeiro's Web site has balanced weight on two perspectives - technical and user friendliness - closely associated with the Web site's mechanism. Moreover, this Web site has stable weight balance on other perspectives - event and regional - as well. However, in the previous sections, especially chapter 4 and 5, Rio de Janeiro's Web site was regarded as somewhat less effective because this Web site has never been ranked first among the four perspectives. However, through the effectiveness continuum this Web site would be somewhat differently assessed.

Information's balanced weight plays a key role in representing a city's careful and well-planned concerns for preparing to host both games. From this point of view, based on the effectiveness continuum, it can be said that Rio de Janeiro has a

mechanically well-structured Web site which has comprehensive information on both games. Nevertheless, since this Web site lacks links for relevant sources, some suggestions relating to these sources would be made to improve the Web site effectiveness.

Table 26

Effectiveness Continuum of the Rio de Janeiro's Web site

Four Perspectives	Level of Effectiveness				
Technical	Very Weak	Weak	Average	Strong	Very Strong
User Friendliness	Very Weak	Weak	Average	Strong	Very Strong
Event	Very Weak	Weak	Average	Strong	Very Strong
Regional	Very Weak	Weak	Average	Strong	Very Strong

Based on content analysis, Tokyo's Web site is defined as not only mechanically well-structured, but also sufficiently informative on event-related contents. Furthermore, based on the diverse functions designed for usability (see Table 27), Tokyo's concerns for the Internet users can be identified without difficulty. For instance, with respect to the information on events, Tokyo's Web site deals with event information by using both perspectives: international and domestic. In general, while most Web sites tend to deal with the Olympic and Paralympic Games only as an international phenomenon, Tokyo's Web site has sufficient event information relating to even domestic issues. Moreover, with respect to the accessibility issue, Tokyo's Web site is the only one that has a function for adjusting text size for people with visual disabilities.

However, unlike the Rio de Janeiro's Web site which has balanced information weight on event and region, the Web site of Tokyo is not viewed as balanced. Specifically, with respect to the regional information, several suggestions are needed. First of all, even though Tokyo's Web site has an independent section for presenting city and nation to the general public, this Web site lacks regional information, especially practical information for prospective visitors, because the section for regional information is just filled with images rather than practical descriptions. Moreover, this section seems to cause unnecessary confusion due to somewhat complex Web design. Therefore, based on these reviews, Tokyo's Web site needs enhance the effectiveness of the regional perspective.

Table 27

Effectiveness Continuum of the Tokyo's Web site

Four Perspectives	Level of Effectiveness				
	Very Weak	Weak	Average	Strong	Very Strong
Technical	Very Weak	Weak	Average	Strong	Very Strong
User Friendliness	Very Weak	Weak	Average	Strong	Very Strong
Event	Very Weak	Weak	Average	Strong	Very Strong
Regional	Very Weak	Weak	Average	Strong	Very Strong

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APPENDIX A

WEB SITE EFFECTIVENESS OF THE 2016 SUMMER OLYMPIC AND
PARALYMPIC GAMES' CANDIDATE CITIES

Dear ()

My name is Sang Uk Joo, and I am a student in the Sport Management Department's graduate program. In regards to establishing a data-collecting instrument, I would like to ask you to fill out following questionnaires and provide your opinion on validity of the instrument. This instrument was established to evaluate Web site effectiveness of the 2016 Olympic and Paralympic Games' four candidates cities.

You are one of Information Technology (IT) experts who are being asked to give an opinion about this instrument. Your responses are important for establishing a reliable and valid study.

Thank you in advance for your help.

If you have any questions, please contact me (sanguk.joo@cutland.edu)



Balanced Scorecard Approach based on Four Perspectives

The purpose of this study is to evaluate the performance effectiveness of each Web site created by the four candidate cities. Based on the Balanced Scorecard (BSC) approach, this instrument consists of four perspectives: a) Technical, b) User Friendliness, c) Event, and d) Regional. Among these four perspectives, the first, a) Technical perspective, is automatically measured by the HTML Toolbox of the Net Mechanic (www.netmechanic.com). The rest of the perspectives, b) User Friendliness, c) Event, and d) Regional perspectives, are measured by the dichotomous scale.

a) Technical Perspective: By using the HTML Toolbox, Technical perspective is automatically measured using four factors: Link Check, Load Time, HTML, and Browser Compatibility. The HTML Toolbox uses a five-star rating approach to measure each Web site.

b) User Friendliness Perspective: User Friendliness perspective is evaluated based on four categories: Ease of Navigation, Availability of Link for Relevant Sources, Language, and Accessibility for Users with Disabilities. To measure the User Friendliness Perspective, the dichotomous scale is used. When using this scale, choosing “yes” indicates that the attribute is present and “no” that the attribution is not.

c) Event Perspective: Event perspective is evaluated based on four categories: Olympic Games, Paralympic Games, the Bidding Process, and Marketing. In regards to scale, the dichotomous method is applied to Event perspective as well.

d) Regional Perspective: Regional perspective is also measured by the dichotomous scale. This perspective is measured using six factors: Annual Climate, Rate of Exchange, Transportation, Airport, Accommodation, and Image.

Direction for Assessment

Instructions: Using the dichotomous (yes/no) and 4-point Likert scale, please complete this survey (quantitative response) indentifying 33 questionnaires that have relevance to or are representative of: the User Friendliness, Event, and Regional categories. In addition, please make comments and feedback (qualitative response) by using the provided space.

As one of IT experts being asked to give their opinion about this data-collecting instrument, you are assigned to measure Chicago’s Web site, ‘Chicago2016 (www.chicago2016.org).’ Please follow the steps below.

1) Click www.chicago2016.org

2) Based on the Web site you linked, fill out this dichotomous scale (yes/no scale) survey

“the ‘Yes’ indicates that the attribute is present and ‘No’ that the attribution is not”

3) Using a 4-point Likert scale, rate each of the following questionnaires according to their relevance to each perspective and category

“1 = It’s doesn’t have any relevance or does not relate at all”

“2= It is unable to assess relevance without questionnaire’s revision”

“3 = It’s relevant but needs minor alterations”

“4 = It’s very relevant and concise”

4) If you have any idea for improving reliability and validity, make comments and feedback by using the space provided below the rating scale and feedback box

Based on your responses, this instrument will be redesigned. In addition, the reliability and validity of this instrument will be assessed by your quantitative responses.

Questionnaires for Evaluating Web site Effectiveness

1. Technical Perspective (www.Chicago2016.org)

Technical Perspective (4)	*	**	***	****	*****
1-1. Link Check		V			
1-2. Load Time		V			
1-3. HTML		V			
1-4. Browser Compatibility	V				

Net Mechanic (www.netmechanic.com)

2. User Friendliness Perspective

User Friendliness Perspective (15)						
2-1. Ease of Navigation (4)	yes	no	1	2	3	4
2-1-1. Is there a function for site search?						
<i>comment:</i>						
2-1-2. Is there a function for site map?						
<i>comment:</i>						
2-1-3. Do the pages include a link to the home page?						
<i>comment:</i>						
2-1-4. Does the page include a link to the FAQ?						
<i>comment:</i>						
2-2. Availability of Link for Relevant Sources (5)	yes	no	1	2	3	4
2-2-1. Does the Web site include a link to the city's Web site?						
<i>comment:</i>						
2-2-2. Does the Web site include a link for volunteering?						
<i>comment:</i>						
2-2-3. Does the Web site include links to the IOC?						
<i>comment:</i>						
2-2-4. Does the Web site include links to the IPC?						
<i>comment:</i>						
2-2-5. Is there a way to contact the organization?						
<i>comment:</i>						
2-3. Language (1)	yes	no	1	2	3	4
2-3-1. Are there Web sites available in four or more languages?						
<i>comment:</i>						
2-4. Accessibility for Users with Disabilities (5)	yes	no	1	2	3	4
2-4-1. Is there a function for adjusting text size for users with visual disabilities?						
<i>comment:</i>						
2-4-2. Is there a function for adjusting visual contrast for users with visual disabilities?						
<i>comment:</i>						
2-4-3. Does every image have ALT (alternative) Text for users with visual disabilities?						
<i>comment:</i>						
2-4-4. Is there a function for a text-only version for users with visual disabilities?						
<i>comment:</i>						
2-4-5. Does every digital video provide captions for users with hearing impairments?						
<i>comment:</i>						

3. Event Perspective

Event Perspective (12)							
3-1. Olympic Games (4)	yes	no	1	2	3	4	
3-1-1. Does the Web site provide information on Olympic History?							
<i>comment:</i>							
3-1-2. Does the Web site provide information on the Olympic Movement?							
<i>comment:</i>							
3-1-3. Does the Web site provide information on Olympic sports?							
<i>comment:</i>							
3-1-4. Does the Web site provide information on facilities for Olympic sports?							
<i>comment:</i>							
3-2. Paralympic Games (4)	yes	no	1	2	3	4	
3-2-1. Does the Web site provide information on Paralympic History?							
<i>comment:</i>							
3-2-2. Does the Web site provide information on the Paralympic Movement?							
<i>comment:</i>							
3-2-3. Does the Web site provide information on Paralympic sports?							
<i>comment:</i>							
3-2-4. Does the Web site provide information on facilities for Paralympic sports?							
<i>comment:</i>							
3-3. Bidding Process (1)	yes	no	1	2	3	4	
3-3-1. Does the Web site provide the Candidature File?							
<i>comment:</i>							
3-4. Marketing (3)	yes	no	1	2	3	4	
3-4-1. Does the Web site provide lists of sponsors?							
<i>comment:</i>							
3-4-2. Is there an official on-line merchandise store for the games?							
<i>comment:</i>							
3-4-3. Is there a function for donating?							
<i>comment:</i>							

4. Regional Perspective

Regional perspective (6)		yes	no	1	2	3	4
4-1. Does the Web site provide information on the city's annual climate?							
<i>comment:</i>							
4-2. Does the Web site provide information on the Rate of Foreign Exchange?							
<i>comment:</i>							
4-3. Does the Web site provide information on the city's Transportation?							
<i>comment:</i>							
4-4. Does the Web site provide information on an Airport near the city?							
<i>comment:</i>							
4-5. Does the Web site provide information on the city's Accommodations?							
<i>comment:</i>							
4-6. Does the Web site have Images of the city?							
<i>comment:</i>							

Feedback Box

Validity in questionnaire studies is the extent to which the questions provide a true measure of what they are designed to measure. In particular, the 'content validity' of survey instruments is generally assessed by an overview of the items by trained individuals. Please make your judgment about the relevance of the items and about the unambiguousness of this formulation. If you have any suggestions for improving the validity of this instrument, please describe them in the box below.

APPENDIX B

Web site Effectiveness of
the 2016 Olympic and Paralympic Games' Candidate Cities

User Friendliness Perspective	<i>investigator</i>		<i>reviewer</i>	
Ease of Navigation	yes	no	yes	no
Is there a function for site search?				
Is there a function for site map?				
Do the pages include a link to the home page?				
Availability of Link for Relevant Sources	yes	no	yes	no
Does the Web site include a link to the city's Web site?				
Does the Web site include a link for volunteering?				
Does the Web site include links to the International Olympic Committees?				
Does the Web site include links to the International Paralympic Committees?				
Is there a way to contact the organization?				
Language	yes	no	yes	no
Are there Web sites available in four or more languages?				
Accessibility for Users with Disabilities	yes	no	yes	no
Is there a function for adjusting text size for users with visual disabilities?				
<hr/>				
Event Perspective	<i>investigator</i>		<i>reviewer</i>	
Olympic Games	yes	no	yes	no
Does the Web site provide information on Olympic history?				
Does the Web site provide information on the Olympic movement?				
Does the Web site provide information on Olympic sports?				
Does the Web site provide information on facilities for Olympic sports?				
Paralympic Games	yes	no	yes	no
Does the Web site provide information on Paralympic history?				
Does the Web site provide information on the Paralympic movement?				
Does the Web site provide information on Paralympic sports?				
Does the Web site provide information on facilities for Paralympic sports?				
Bidding Process	yes	no	yes	no
Does the Web site provide the candidature file?				
Marketing	yes	no	yes	no
Does the Web site provide lists of sponsors?				
Is there an official on-line merchandise store for the games?				
Is there a function for donating?				
<hr/>				
Regional Perspective	<i>investigator</i>		<i>reviewer</i>	
Does the Web site provide information on the city's annual climate?	yes	no	yes	no
Does the Web site provide information on the city's transportation?				
Does the Web site provide information on an airport near the city?				
Does the Web site provide information on the city's accommodations?				
Does the Web site have images of the city?				

VITA

Sang Uk Joo received his Bachelor of Physical Education degree from the Korea National Sport University in 2004. He entered the graduate program at the Korea National Sport University in March 2004 and received his Master of Physical Education (Sociology of Sport) degree in February 2007. In August 2007, he entered the Sport Management program at the State University of New York College at Cortland and received his Master of Science (Sport Management) degree in May 2009. His research interests include socio-cultural issues in global sporting events and Web usability.

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