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# An analysis of the relationship between city typology, interactivity and advertising message strategies of American municipal web sites

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AN ANALYSIS OF THE RELATIONSHIP BETWEEN CITY TYPOLOGY,  
INTERACTIVITY AND ADVERTISING MESSAGE STRATEGIES OF AMERICAN  
MUNICIPAL WEB SITES

A Thesis

Submitted to the Graduate Faculty of the  
Louisiana State University and  
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in

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by

Jeremy Starr  
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## ABSTRACT

This study became to first to scientifically explore the relationship between city typology and the use of advertising message strategy and interactivity within municipal web sites. The study used Taylor's six-segment strategy wheel to analyze message strategies and previous scales of interactivity to analyze structural interactivity. Medium-size cities and cities within the South and West geographic regions more likely used sensory strategies within their web sites. Cities with racially diverse populations more likely used sensory strategies within their web sites as well. Large cities and central cities, both with large populations, used the most interactive strategies within their sites compared to their respective classifications. Cities within the mountain geographic division used the most interactive features among geographic locations and more racially diverse cities used more interactive features than predominantly Caucasian or minority populations. Thus, both message strategy and interactivity proved to share relationships with city typology.

## CHAPTER 1 INTRODUCTION/LITERATURE REVIEW

### 1.1 Introduction

Cities in industrialized countries have experienced significant growth over the last several decades (Abdel-Rahman, 2002). The United Nations Human Development Report (1996), found the national population residing in urban locations within industrialized nations, increased from 61% in 1960 to 73% in 1993. According to Frederickson, Johnson, and Wood (2004), there are an estimated 7,500 cities in the United States. While more cities are incorporating and experiencing population growth across the country, the media industry is experiencing a simultaneous increase in consumer adoption and use of the World Wide Web. With the rise of this new electronic medium, cities have learned to use the Web's resources.

The governments for these cities have many concerns to address every day. They also have many publics that require attention. The World Wide Web provides new opportunities that previous media lacked. For example, the Web can communicate to multiple publics with an unlimited time frame. Municipal advertising is one important form of communication. Online advertising, without the constraints of time or print space, makes the Web extremely appealing for many corporations and entities including municipal governments (Hwang, McMillan, & Lee, 2003).

Cities use municipal web sites for several important purposes. First, municipal web sites can cut costs by making resources available to everyone all at once. Municipal web pages also can help streamline activities for the city's publics without wasting the time of city employees. Cities can use their web pages to advertise to large groups of people, but also segment these groups based on their publics' needs.

Knowing that web pages are important tools for advertising purposes, cities develop their sites so that they effectively communicate to target audiences: residents, businesses, visitors, and

potential new residents and businesses. The creation of an effective advertisement incorporates an appropriate advertising message strategy and effective use of features that allow Web users to interactively use sites. If designed correctly, the Web user will more likely have a better attitude towards the web site and the city (Wu, 2005).

City web sites also offer additional benefits outside of advertising purposes. The web site acts as a useful medium for public relations and basic communication. It offers the ability to disseminate valuable information to any inquiring public. City web sites also allow web users to interact with the site to accomplish tasks and to provide feedback. It is important to understand that web site information can be informational, functional, and persuasive (Choi, Rifon, Trimble, & Reece, 2006).

The purpose of this study is to analyze three separate but potentially related elements associated with municipal web sites: the use of message strategies, the use of interactive features, and the physical typology and demographic component of a city. More specifically, the study will explore different elements of city typology and analyze if typology is related to message strategy or interactivity used by the municipality. Literature and theory from a variety of backgrounds (urban science, public administration, psychology, sociology, marketing, advertising, public relations, information science, and media studies) have developed the basis of this study.

Past studies from these fields indicated that message strategies and interactive features are operational elements within web sites that interact and engage the user. Web sites regularly use both elements to influence users' behaviors and attitudes along with fulfilling their publics' needed services. With variances in typology among American cities, one might argue that every city has different intentions and needs to fulfill with their website. For example, Papavassiliou and Stathakopoulos (1997) found that advertising messages, in general, within a country and

between different countries must take into account various elements such as local culture, economic status, and media use for their messages' persuasiveness. Additionally, Hwang, McMillan, and Lee (2003) found message strategies differed between corporate web sites based on the product being advertised. As a result, it is quite possible that some relationships exist between municipalities' uses of message strategies and interactive features within their web sites and their physical typologies and demographic components.

The study applies Taylor's six-segment message strategy wheel to analyze message strategy (Taylor, 1999). Taylor first tested his model to ensure its functionality. Then in other studies, researchers successfully applied Taylor's model to analyze advertising message strategy. Hwang et al. (2003) successfully tested Taylor's model and its application on a variety of corporate web sites. They found the most commonly used message strategies within corporate web sites were routine strategies. They also found a relationship between company size and message strategy, while message strategy and the number of audiences or functions lacked a strong relationship. Kim, McMillan, and Hwang (2005) applied Taylor's model to both television and online corporate advertising associated with their 2003 Super Bowl advertising campaigns. Their content analysis focused on the integrated marketing communications relationship between the two media message strategies. They found that Taylor's model can identify strategies used within various media. Additionally, they found television commercials were more likely to use transformational strategies, while web sites were more likely to use informational strategies. The content analysis revealed that routine strategies were the most commonly used message strategies within both television and web site advertising.

While researchers have successfully applied Taylor's six-segment message strategy wheel, there remains a shortage in research that involves the creative elements of advertising (Schumann, Hathcote & West, 1991). Jin (2003) stated that most research that involves

advertising messages and consumers' involvement within information processing came from mass communication and political communication research that covered issues and events, specifically elections and political issues. Frazier, Sheehan, and Patti (2002) argued the most frequent research of advertising messages comes from "specific message components or executional elements" (p. 151). They said only a small proportion of research in advertising explored message or creative strategies. As a result, more research is necessary to better understand the nature of advertising message strategies and to fill in this partial hole of advertising theory. This study aims to fill that gap by analyzing the creative aspects of municipal and governmental advertising and communication.

Perhaps even more importantly, uses of municipal web sites to successfully analyze message strategies will illustrate the flexibility of Taylor's model. Taylor designed the model to measure advertising message strategies in their traditional forms such as television and print advertising. With society's rapid adoption of digital and electronic technologies, researchers should test existing advertising models on new media and contexts to see if they can adjust and maintain functionality. Researchers, thus far, have successfully tested Taylor's model on traditional corporate web sites. The model has never been tested on web sites of governments, individual politicians, political parties, non-profit organizations, or personal web sites. According to Hwang et al. (2003), the Web is an information-rich medium that can address many audiences and contain numerous message strategies. Thus, analyses of non-corporate web sites seem very relevant and valuable for future advertising and public relations researchers and professionals.

As this study strives to fill gaps in message strategy research, the researcher also explored several previous studies that investigated interactivity and its features within web sites to understand its relations to advertising strategy and its purpose within the Web. Ha and James

(1998) used a content analysis of business web sites to develop a five-dimension hierarchy of structurally interactive features for the World Wide Web. They found that reciprocal communication features were most frequently used within business web sites. They also concluded that web sites provided interactive opportunities for businesses, but businesses failed to effectively use their web sites.

However, several years later, Hwang et al. (2003) found that corporations learned to use their web sites for business purposes. They completed a content analysis of corporate web sites' online advertising message strategies, the different targeted audiences, and the sites' number and various functions. The study found that 65% of companies used their web sites for facilitation of sales, communication of company information, and establishment of the companies' brand. Higher revenue companies contained more functions and were more likely to use transformational strategies within their web sites than smaller revenue companies.

In addition to analyses of interactivity within corporate web sites, some analyses specifically incorporated municipal web sites. Ho (2002) looked at content, web designs, and interactive features of municipal web sites. The study, which involved a survey of Web masters and officials of municipal web sites of the 55 largest American cities, found in 2000 that the majority of large American cities shifted their web sites to more user-friendly designs. These designs often contained categories and portals to assist users' ability to navigate, which even included, in some instances, various online services.

Similarly, Moon (2002) investigated interactivity within municipal web sites. He surveyed 1,471 local government officials of cities with at least 10,000 residents to develop a five-level system of hierarchy based on the interactive features provided by city web sites. Moon found that technical, financial, and personnel factors limited the advancement of municipal web sites and e-government initiatives. Additionally, he found that municipal web sites mostly relied

on one-way information dissemination and two-way communication, rather than higher levels of interactive features such as service and financial transactions.

Likewise, Stowers (1999) also analyzed interactive features within city web sites. Stowers argued that governments' web sites began to be "cyberactive" by the end of the 1990s, and frequently provided basic contact information (p. 123). She stated, "The ability to communicate with appointed and elected public officials can make the difference between passive information delivery and a site that provides dynamic service delivery" (p. 123).

This study's analysis of interactivity will attempt to combine these previous findings and add a new perspective to the loosely defined concept of interactivity. More specifically, this study will explore advancements of municipalities' uses of interactive features compared to earlier studies. While researchers made many attempts to classify or create typologies for cities, no study, however, has analyzed the relationship between city type, online message strategy, and online interactivity. This study seeks to be the first to integrate these three different areas of research to probe the online characteristics of municipalities.

This content analysis will provide future incorporated cities quantitative, statistical, and descriptive data, to aid the development of an appropriate web site. Incorporated cities with established web sites could use the findings to redesign their web pages if they desire to do so. Incorporated cities without web sites also could use the findings to develop their own. The findings, in general, will provide a framework for overall city message strategy and interactivity use. With the nature of the competitive municipality market, the findings could provide city governments with valuable information.

## **1.2 What Is Municipal Advertising?**

City advertising is a practice used by cities not only in the United States and in industrialized countries, but in a variety of cities and regions globally (Philo & Kearns, 1993).

Philo and Kearns (1993) referred to city advertising as “selling places” (p. 2). They provided the following definition:

A phenomenon which involves and has implications for a range of economic and social activities – often explicitly formulated policies – pursued by those individuals and organisations who ‘manage’ places, most obviously large urban areas but also on occasion rural areas as a whole (often quite heterogeneous) regions. (p. 2)

Advertising cities or “selling places” involves an interaction of activities and involvement from private and public entities within the city or region to “‘sell’ the image of a particular geographically-defined ‘place,’ usually a town or city, so as to make it attractive to economic enterprises, to tourists and even to inhabitants of that place” (Philo & Kearns, 1993, p. 3).

Paddison (1993) said the goal of city marketing is to make the city competitive with its environments, attracting investment from its environment and improving its image and the quality of life for its citizens. Van den Berg and Braun (1999) state that cities market and promote to “contend for companies, institutions, wealth, residents and visitors,” and they “promote the prosperity of the urban community” to achieve this goal (p. 992). A city that is actively participating in city marketing can identify itself with any of the following metaphors: a market, a commodity, or an enterprise (Corsico, 1994).

Cities advertise to their customers or target market. According to van den Berg and Braun (1999), the city’s customers are the inhabitants, businesses, and visitors or tourists. They say the city provides inhabitants with a place to live, work, find leisure activities and to find health and educational benefits. For businesses, the city is a place to find an establishment, recruit and train employees and a place to operate. For the tourists or visitors, they said the city offers exposure to cultural, educational, and entertainment benefits. Cities will advertise or sell themselves and their image in a variety of ways to successfully reach and communicate to customers or target audiences (Philo & Kearns, 1993).

1.2.1 Historical Background of City Advertising. The concept of city advertising is not a new practice. Gold and Ward (1994) discuss place promotion and its role in colonial expansion. Newly established towns in distant places used city promotions to attract new inhabitants. They also said, in some cases, coastal resorts relied on place promotion to attract tourists. Paddison (1993) said the practice of city marketing existed for several decades in the United States, and experts mostly referred to this practice as linking “local economic development, the promotion of place and the encouragement of public-private partnerships to achieve regeneration” (p. 340).

Clark (2000) mentions several examples where city and regional governments, organizations, and residents developed budgets to advertise their city or region. In 1925, the Atlanta Chamber of Commerce developed a campaign costing \$250,000 to advertise the city. Its slogan was “Put Atlanta on Your Pay Roll for Twelve Months.” City officials used most of the money for periodical advertising. The campaign was so successful that the city raised \$1,000,000 from Atlanta employers to be spent at \$333,000 per year to attract new employees. During the 1980s, both Cleveland and Pittsburgh experienced extensive population and job opportunity growth that offset a period of poor economic times (Holcomb, 1993). This growth resulted from successful marketing, public relations, and advertising efforts.

With the change of time and the advancement of technology, both city competition for resources and the battle over successful advertising to their target audiences have increased (van den Berg & Braun, 1999). This competition includes the use of the Internet to communicate and advertise. Paddison (1993) mentioned there are several problems one may encounter with city advertising in the digital age. A city is an “inflexible” entity, and development and reconstruction from a marketing campaign may be lengthy and timely, which means it may be hard to understand the marketing effectiveness (p. 342). Marketing a city also may extend beyond the city’s limits. Cities have grown beyond their borders, making for potential regional

competitiveness with suburbs and nearby cities. Consequently, cities and their surrounding areas must find a way to work together to achieve optimal advertising results.

1.2.2 Advertising City Features and Competitive Advantages. Rogerson (1999) found that quality of life is an important attribute of a ‘competitive city’ (p. 969). He stated that quality of life attracts “the attention of capital” (p. 969) and secures “growth and development through the attraction and retention of means of economic production” (p. 974). A better quality of life can attract businesses interested in relocation or individual migration. Quality of life can consist of a variety of elements from crime rates, to the education system, to the cost of living. Neal (2006) said the amount and variety of restaurants and places to eat even reflect an American city’s quality of life. Quality of life, thus, is an important element or concept cities can advertise to their target audiences.

Philo and Kearns (1993) found that culture is another element to advertise:

Selling places is often a conscious and deliberate manipulation of culture in an effort to enhance the appeal and interest of places, especially to the relatively well-off and well-educated workforces of high-technology industry, but also to ‘up-market’ tourists and to the organisers of conferences and other money-spinning exercises. (p. 3)

Advertising cultural elements indicates that the city highlights its unique and local lifestyles, traditions, arts, motifs, events, and exhibitions (Philo & Kearns, 1993). These elements may associate with various class, gender, or ethnic groups within the city and target all levels of the city’s target audiences. Related to culture, history and the area’s past manipulate the way advertisers and administrators advertise its city. ‘Relics,’ landmarks, and “‘historic’ events” are historical resources and opportunities that advertisers can use to target tourists and enterprises and create a cultural presence among the city (Philo & Kearns, 1993, p. 5).

Crilley (1993) believes that city governments, corporations and redevelopment agencies can use distinct architecture as a way to advertise its city. He said, “Architecture, as much as

expensive city marketing campaigns, is mobilised to transmit a catching, idiosyncratic image of urban vitality” (p. 233). This image reshaping might come from a physical change such as a manipulated skyline or cultural change such as the creation of cultural arts districts or the opening of a new institution or park.

1.2.3 Understanding City Demographics and Typologies. The type of city and its demographics likely influence which images and features the city officials and marketers want to portray and which customers or publics advertisers’ choose to target. Researchers from a variety of backgrounds have created different typologies to meet the complexity of city structure and function. Ross (1993) stated, “Most city classification and description efforts have concentrated on corporate or population characteristics” (p. 1110). Magnusson and Turner (2003) reflected this argument through their use of population to create a typology in their study, which researched population migration and mobility in Swedish cities. They divided cities into groups, which included large cities with over 200,000 inhabitants, their suburban municipalities, other larger cities, medium-sized cities, and rural municipalities as examples. On the other hand, Hill, Brennan, and Wolman (1998) argued that “economic, social and demographic variables” are the best means to classify cities (p. 1939).

Archer (1969) provided the label, “metrotowns,” to cities that were symbiotically part of a metropolis but were independent from surrounding towns. “Metrotowns,” however, had populations between 50,000 and 200,000 inhabitants, large numbers and varieties of employment opportunities, large business centers, and opportunities for further growth (p. 258). Archer also provided the label, “regional city,” to refer to cities created from decentralization of an already existing city and provides an urban center for large regional population growth and development (p. 261). These cities have between 200,000 and 500,000 people, an urban environment to

attract residents, a strong manufacturing industry, and an urban center that can support large populations of residents and development for the region.

Similar to the regional city and metrotown relationship, other researchers studied the idea of suburban cities or “edge cities” (Scheer & Petkov, 1998, p. 298). Rehfuss (1977) said that suburban cities share a relationship with central cities. In recent years, cities have seen migration of industry, commerce, and employment to the suburbs. As a result, “there is as much commuting between suburbs as between the central city and the suburbs. Actually, reverse commuting (central city to suburbs) is rapidly increasing” (p. 113).

In a study of Virginian cities, Shuai (2005) illustrated that the “suburbs are on the verge of becoming the leaders for city economic growth” (p. 22). He also found suburbs “are growing faster in terms of both population and jobs” (p. 22). Many suburbs, however, continue to have fewer businesses and residents overall compared to the central cities.

Spatial relations among nearby or interconnected urban communities may influence strategic factors used to advertise within a city (Archer, 1969; Magnusson & Turner, 2003; Rehfuss, 1977; Scheer & Petkov, 1998). Some cities are the regional or metropolitan center for all surrounding urban activity. Some cities play a suburban or edge city role. Rehfuss (1977) found that cities have experienced a migration of industry, commerce, and employment to outlying areas, suburbs, and urban communities.

Other studies looked at social and economic variables to classify city types (Hill et al., 1998; Jones & Jones, 1970). Jones and Jones (1970) incorporated “urban growth and development” and “socioeconomic status” to identify city type (p. 219). They developed four city classifications: high urban growth/development and socioeconomic status, high urban growth/development but low socioeconomic status, low urban growth/development and

economic status, and low urban growth/development but high socioeconomic status. Their classifications took into account city demographic information, industry, income, and growth.

Similarly, Cohen-Blankshtain, Nijkamp, and van Montfort (2004) also developed a model that accounted for social, structural, and industrial factors within the city. Their three dimensional model illustrated urban decision-makers' "perceptions of a city" (p. 2656). One of the dimensions discussed perceived functions of cities. Their list of city functions included industrial center, service center, administrative center, logistic center, tourist center, commercial center, information and communication technologies/multimedia center, and higher education center. Iyer (2003) researched Russian cities and described a typology used that considered "administrative status and era of creation" (p. 204). Iyer stated "administrative capitals, Soviet-era company towns, and pre-revolutionary (1917) towns" were common city classifications during Soviet urban planning (p. 204).

In summary, the existence of city marketing dates back several centuries and has experienced change over time. Presently, cities use city marketing to convey various competitive advantages, such as quality of life, culture, and architecture, so that cities continue to thrive and grow. To effectively communicate and advertise messages, cities must understand their existing typology and use their positive highlights and features as competitive advertising advantages. The next section will discuss further the evolution of the Internet and municipalities adoption of the new medium.

### **1.3 General Web Use and Municipality Use of the World Wide Web**

Cities must establish and maintain their web sites for communication purposes because cities have several varying publics to target. Unlike traditional mass media, which lack any form of feedback and two-way communication, the Web allows high levels of interaction (Wu, 2005). The Web allows officials to disseminate messages to communicate, advertise, persuade, and

inform. In terms of persuading and advertising, McMillan, Hwang, and Lee (2003) said that the Web has the capability to influence selling and engage the customer or public. The Web provides the capacity to communicate an endless amount of information within a single web site. Hwang et al. (2003) said, “With the virtually unlimited time and space a Web site enables, multiple audiences can be addressed at a single site” (Summary section, ¶ 2).

1.3.1 The Rise of the Internet. According to The Digital Future Report, an ongoing study of Internet use that takes place at USC’s Annenberg School, in 2003, 75.9% of Americans reported they were Internet users (Lebo, 2004), which was an increase from the 66.9% that used the Internet in 2000 (Lebo, 2000). The 2003 report found 65.1% of Americans use the Internet at home, 57.5% of employed Americans use the Internet away from home at their work, and 92.5% of Internet users use e-mail. The study also found an increase of 3.1 hours of Internet use each week since 2000. While e-mail and instant messaging are the most popular Internet activities with 90.4% of users indicating that they use these features, 77.2% of users say they use the Internet for web surfing and browsing, and 34.6% of users claim to use the Internet for travel information.

The Digital Future Report showed that Internet is widely accepted. For this reason, businesses, nonprofits, governments, and other entities often rely on web sites. The report also revealed that many people interested in travel look to the Web as a means of travel information. This statistic shows that travelers and vacationers should at least be considered as one potential public for city government web sites.

1.3.2 Municipality Adoption of the World Wide Web. Municipal administrators realized the Web’s opportunity in the 1990s when they began using web sites (Ho, 2002). With the adoption of the World Wide Web, municipalities have developed sites that allow them to communicate to a wide range of target publics. Moon (2002) said public employees, other

governments, citizens, businesses, and other social actors are generally considered target publics for city web sites. Milam (2003) said the creation of a municipal Web site that “includes information about the organizational structure of the city, its fiscal budget, upcoming projects to be bid, and occurrences at city council meetings has proven to be a vital part of citizen outreach” (p. 366). The use of Web sites allows cities and their officials’ access to efficient communication and advertising. Web sites benefit city officials financially and streamline communication with the public and the city’s citizens. Web sites simultaneously provide citizens a means of direct online discourse with city officials and staff, which allow the potential for instantaneous information exchange and business transaction (Ho, 2002).

Stowers (1999) concluded, through a content analysis of municipal web sites of cities over 100,000 in population, that Web sites often advocate the city’s jurisdiction and “attract or assist business, visitors, and new residents rather than enhancing the community and polity of local citizens. Otherwise, content is determined by the functions of the government, the level of resources, and technical expertise available for Web development” (p. 123). Stowers’ analysis explored both municipal and state government web sites. She found that nearly half of American cities with over 100,000 in population had government web sites, and these web sites contained more diversity within their content than states’ web sites. Further, she concluded that the introduction of governmental web sites promoted interactive discourse, visual information dissemination, and virtual service delivery with their publics.

Ho (2002) conducted a study involving surveys of city web site designers and a content analysis of the 55 largest American city web site home pages in 2000. The study showed web sites originally contained a bureaucratic design, which he defined as administrative and emphasizing “standardization, departmentalization, and division of labor” (p. 440). With these bureaucratic designs, web sites were operationally less efficient especially for city publics.

Bureaucratic designs focused on “top-down management and hierarchical communication” (Ho, 2002, p. 437).

The newer designs, or “e-government paradigm” designs, “coordinated network building, external collaboration, and one-stop customer services” (Ho, 2002, p. 440). Among the newer designs, Ho divided them into two groups: information-oriented and user-oriented. The information-oriented designs provided large amounts of information and many necessary services on their home pages. Ho described the information-oriented approach as a “one-stop shopping service” (p. 437). The user-oriented design used portals, which categorized “information and services on the Web according to the needs of different user groups” (p. 437). The user-oriented approach was the most efficient, convenient, and user-friendly of the three designs. Ho concluded that the majority of the 55 largest American cities had, in fact, already shifted away from the traditional bureaucratic design to either an information or user-oriented design, which he defined as an “e-government paradigm design” (p. 437).

Ho explored several factors that influenced city web sites’ designs. He provided a list of potential influencing factors: time and experience using the Web, support from senior government officials, available resources, pressure from private sectors and demographic information such as minority percentage, city population, per capita income, and the proportion of elderly population. Ho’s research found cities that had official web sites for a longer period of time and whose administration had more experience with the Web were more likely to adopt an e-government paradigm design. Similarly, cities with sufficient funding and staffing for web site development were more likely to implement web sites that contained more user-friendly and efficient designs.

Among the factors involving demographic information, Ho (2002) found no significant relationships between web site designs and the cities’ overall population, income, or elderly

population. However, he found that cities with larger percentages of minority populations were more likely to have older administrative-oriented designs. Ho's research showed lower income households and minority households "were less likely to tie to the digital world" (p. 439). Ho explained these findings might influence the relations between design and minority population. As a result, municipalities with large populations of minorities and low income residents and struggling industries likely would rely on less interactive and user-friendly web sites.

Design and web site layout are relevant factors for online advertisers to consider because they affect the users' interaction with the site. The Web provides a means for two-way communication, which is far superior to previous media and their capabilities. According to McMillan and Hwang (2002), however, advertisers must be aware of certain threats. Consumers would not hesitate to leave a site and miss the entire message if the site is slow to load. Heavy use of graphics may cause such a problem.

McMillan and Hwang (2002) explored interactivity from the perceptual approach. Their study involved the development of an 18-item scale, measure of perceived interactivity (MPI). They used previous research, in-depth interviews with 10 subjects, and two focus groups to develop the scale. To test their scale, the researchers then exposed 126 subjects to a web site. Their scale proved to be successful in measuring consumer perception of Web advertising. McMillan and Hwang concluded that advertisers must share some control with consumers because the Web is a medium that allows interactive communication. People use the Web to explore and engage in information. Consumer expectations uphold an idea that Web sites provide some form of user control. Messages should also be interesting enough to maintain the viewers' attention, and advertisers must manage a site that is easy to navigate. McMillan and Hwang (2002) concluded that a web site must "develop an aesthetic that incorporates such concepts as real-time conversation, loading speed, and ability to engage the consumer" (p. 39).

As illustrated within this section, the Internet has influenced society in a variety of ways. Among these influences, people expect and rely on Internet access. The Internet is now a primary channel of communication, which, unlike previous media, allows the user an array of available services and functions. Municipality governments adopted this technology as a means of communication and operation during the 1990s as illustrated through Ho (2002) and Stowers' (1999) studies. Based on the findings within this section, cities already understand the virtually unlimited availabilities and opportunities the Internet allows. In addition, Ho illustrated that officials in many highly populated American cities already understand that city governments must share some of their control over their web sites, similar to corporate web site designs as McMillan and Hwang (2002) described, based on their overall shift away from administrative designs towards more user-friendly designs.

This study will not specifically analyze city web site designs as discussed within this section. This study will, however, analyze cities' uses of message strategies and web site features that provide user control and interaction, which one might argue is related to the design of a web site. The next section will discuss the uses of these features along with the concept of interactivity, its role within the Web, and its benefit to city governments.

## **1.4 Interactivity and Effective Web Sites**

1.4.1 Web Sites and User Attitudes. Researchers often believe that positive attitudes toward advertisements generate favorable consumer effects such as purchase intent and brand loyalty (McMillan et al., 2003). As a result, some researchers believe attitudes of Web users are useful determinants to understand and predict effectiveness of advertising and communicating through the uses of web sites (Rodgers & Thorson, 2000). Consequently, researchers conduct large amounts of research to acquire a better understanding of perceptual and structural features found on web sites that influence attitudes and create effective web sites.

Choi, Miracle, and Biocca (2001) argued that one primary objective of advertising through the use of web sites was to attract consumers to the web site itself. Once consumers navigate to the site, the advertiser and the web site become responsible for retaining the consumers. Following the conduction of a one-factor experimental design with 210 undergraduate students, Choi et al. suggested that administrators and advertisers should consider their uses of various structural variables within their web sites during product promotions. They believed advertisers should consider variables such as “communication modality, speed, range and mapping” to “make consumers’ experiences more compelling and to make the message more persuasive” (Practical Implications section, ¶ 2).

Choi et al. (2001) found that the use of animated agents, or online graphic objects that resemble virtual humans, shared a positive relationship with the user’s attitude towards a web site. They concluded that the use of interactive and animated agents creates “a sense of presence” within the web site, which “will be one of the important strategies in online marketing to attract consumers and to establish more favorable relationships with visitors” (Practical Implications section, ¶ 2).

Hwang et al. (2003) examined structural elements of corporate web sites to explore online corporate advertising. They also studied the functions and audiences of corporate web sites. Through a content analysis of 160 web sites, they found that corporations use their web sites to communicate information about their companies and brands and to facilitate sales. Specific examples included information on corporate histories, philanthropic activities, product feature lists, brand user testimonies, and online sales. Their study found 65.63% of web sites within the sample contained all three general functions listed above, and web sites created by higher revenue corporations were more likely to have more functions than web sites of smaller revenue corporations (Functions of Web Sites section, ¶ 1).

Hwang et al. (2003) also found that web sites of larger revenue corporations targeted more audiences than web sites of smaller revenue companies. They concluded that higher revenue corporations had more audiences because they have more stakeholders to address. The same conclusion may have explained why web sites of larger revenue corporations contained more functions than web sites of smaller revenue corporations. Their study, however, did not address any relationship between the number of audiences and the number of functions. Hwang et al.'s findings, along with Choi et al.'s (2001) findings, introduce another important element of web site development and research called interactivity.

1.4.2 Defining Interactivity. Since the mid 1970s, researchers studying interactivity spent most of their efforts attempting to describe, define, and categorize the concept of interactivity rather than developing empirical theory research (Bucy, 2004a). Despite the frequent use of the term, “scholars have noted that interactivity is often either undefined or underdefined” (McMillan & Hwang, 2002, p. 29). Regardless of their disagreements, McMillan and Hwang argued that researchers typically define interactivity based on one of three scholastic ideologies: a processes approach, a perceptions approach, a features approach, or some combination of the three.

Supporters of the processes paradigm focus their research on activities, such as interchange and responsiveness (McMillan & Hwang, 2002). From her analysis of various interactivity literatures, McMillan (2005) stated that advocates of the processes approach focus their research on the “actual activity of interacting” (Types of Interactivity section, ¶ 2). Rafaeli (1988) was the first to conceptualize interactivity within Internet research (Tremayne, 2005, Interactivity as a Process of Message Exchange, ¶ 1). Rafaeli described interactivity as “an expression of the extent that in a given series of communication exchanges, any third (or later) transmission (or message) is related to the degree to which previous exchanges referred to even

earlier transmissions” (p. 111). Additionally, Rafaeli and Sudweeks (1997) provided another processes approach description, which stated that interactivity is “a condition of communication in which simultaneous and continuous exchanges occur, and these exchanges carry a social, binding force” (Interactivity section, ¶ 4).

Macias (2003) provided an additional processes approach definition of interactivity:

Interactivity is the state or process of communicating, exchanging, obtaining and/or modifying content (e.g., ideas, entertainment, product information) and/or its form with or through a medium (e.g., computer, modem, etc.) which responds to both the communicator’s and the audience’s communication needs by including hypertext links, reciprocal communication, etc. (Interactivity section, ¶ 1)

Tse and Chan (2004) completed a content analysis of 104 web sites to explore the interactive effects on web site performance. They also defined interactivity, within the process paradigm, as “a form of communication that is two-way and real time, that involves human-computer interaction via a computer-mediated environment such as the Internet, and in which the responses and behavior of both parties will affect their future responses and behavior” (p. 370).

Finally, Newhagen (2004) conceptualized interactivity within the processes approach paradigm but analyzed it at the neural level. He argued that interactivity is an internal “information-based process that takes place within the individual,” and the process of “transmission,” on the other hand, occurs when “messages are physically moved,” externally, “between the individual and other agents” (p. 395). Additionally, Newhagen described the internal neural process as a mismatch that occurs “between expectations of existing mental states retrieved by memory and the structure of sensory input” (p. 398).

In contrast, advocates of the perceptual paradigm focus their attention on how the user perceives and experiences interactivity (Macias, 2003; McMillan & Hwang, 2002). Similarly, McMillan (2005) argued that interactivity is based on “whether or not users perceive the communication environment to be interactive” (Types of Interactivity section, ¶ 2). Bucy

(2004a) wrote an article that critiqued several tendencies and erroneous assumptions of interactivity research and proposed several propositions to advance interactivity theory. He supported interactivity's conceptual approach because he felt it "routinizes the concept and makes it a part of everyday media experience," which "should encourage the concept's theoretical development by enabling empirical measurement through attitudinal and emotional scales and qualitative elaboration through focus group research and open-ended questions, allowing systematic knowledge about interactivity to accumulate" (p. 377). Additionally, he argued the role of interactivity was to engage the user, thus the user's experience and perception was the most important measurement of interactivity.

Researchers often relate perceptual interactivity with user attitude and behavior. For example, McMillan and Hwang (2002) developed a scale to measure perceived interactivity (MPI), which illustrated that perceptual activity predicted user attitude and web site effectiveness. McMillan et al. (2003) found that perceptual interactivity and user involvement were better predictors of user attitude than structural variables, which they defined as the site's physical features and its creative strategies. Wu (2005) defined perceptual interactivity as the "psychological state" that the user experiences during interaction with a web site (Actual Interactivity versus Perceived Interactivity section, ¶ 7). His experimental design research on 157 undergraduate student participants illustrated a presence of a "mediating role of perceived interactivity in affecting the effect of actual interactivity on attitude toward the website" (Discussion section, ¶ 5). As a result, Wu concluded that the development of interactivity theory cannot exist without considering both the perceptual and feature approaches.

Researchers that support the feature or structural paradigm "seek to identify either general characteristics (such as user control and two-way communication) or specific characteristics of Web sites (such as search engines and chat rooms) that define interactivity"

(McMillan & Hwang, 2002, p. 30). Ha and James (1998) specifically defined interactivity “as the extent to which the communicator and the audience respond to each other’s communication needs” (p. 456). While their definition resembled some descriptions of the process paradigm, they undoubtedly focused their research and classifications on the structural existences within web sites. Ha and James conducted a content analysis of 110 business web sites between October of 1995 and January of 1996. They placed interactive features within one of five dimensions based on their structural existences: playfulness, choice, connectedness, information collection, and reciprocal communication.

In their experiment on 60 undergraduate students to test participants’ impressions and attitudes towards fictitious political candidate web sites and their policies, Sundar, Kalyanaraman, and Brown (2003) used the term, “functional view,” to categorize the features approach to interactivity (p. 33). They argued that “the sheer presence of...functions included on an interface is sufficient evidence of interactivity. The higher the number of functions included on a Web site, the greater its interactivity” (p. 33). Specifically, the functions they used to define interactivity were hyperlinks for enhanced Web navigation.

The “functional view,” however, did not consider how the user uses the functions or the degree of their uses. Sundar et al. admitted to some limitations of the functional view. One important limitation was the lack of identification of specific outcomes from the interaction. Another limitation was the lack of equal functionality between seemingly related interactive functions. As a result, these limitations inhibited the development of an operationalized explanation of interactivity within the features approach.

Likewise, Sundar (2004) argued interactivity is a characteristic of the medium or technology rather than the user and his or her perception. He argued that the use of the perceptual approach to measure interactivity is a mistake because it focuses on the user’s ability

to use the medium and individual psychological difference rather than the medium itself. Additionally, Sundar believed the use of perceptual measures of interactivity eliminated the ability to pinpoint which physical elements contribute to interactivity. Sundar offered his view of interactivity, “Interactivity should be defined in terms of the presence of specific ontological characteristics (e.g., control, choice, contingency) in the interface” (p. 386).

Furthermore, from their experiment that explored Web users’ attitudes toward advertisements, Sundar and Kim (2005) defined structural interactivity as an “approach in that the interface promises several functions (e.g., feedback forms, chat forums, downloads, etc.) that offer rich potential for dialogue or mutual discourse” (Interactivity section, ¶ 1). These structural or mechanical functions may be defined as specific features, attributes, processes, or outcomes. For instance, they stated that features may exist as audio or video components while choice and control options represent examples of attributes. In their experiment, 48 participants received exposure to 12 web pages with different news articles and advertisement stimuli. After their exposure to the web pages, the participants completed questionnaires to explore their attitudes toward the advertisements. The experiment revealed a positive association between the level of interactivity and advertisement and product attitude. Additionally, the level of interactivity interacted with advertisement shape and animation to affect the persuasion process.

While scholars frequently define interactivity based on one of the three approaches or from a combination of the three, McMillan (2005) provided an additional typology, which contained a three-dimensional approach for the categorization of interactivity. Based on previous literature, her typology’s categories were “human-to-human,” “human-to-computer,” or “human-to-content,” which represented the interactive relationships (Types of Interactivity, ¶ 2). McMillan matched these three types with the three definitional approaches of interactivity to form a three-by-three framework.

Under her human-to-human category, she listed instant messaging and e-mail as examples within the feature approach (McMillan, 2005). Participation in an instant message chat session and the process of sending and receiving e-mail were examples within the process approach. McMillan's example within the perceptions approach illustrated that user's belief that e-mail and instant message facilitate communication. This belief may result from self-interest or personal involvement with the relevant topic addressed within the communication.

Under her human-to-computer category, she listed navigational and search tools as examples within the feature approach (McMillan, 2005). Under her human-to-content category, she listed facilitation tools to personalize content as an example within the feature approach. Similarly, she provided examples of interactivity within the processes and perceptions approaches under both the human-to-computer and human-to-content typologies that were analogous to the examples provided within their two features approaches. McMillan's descriptive typology presents an outline for a better understanding of interactivity. She admits, however, that the framework, provides a tool "for focusing on the big picture" only, and that interactivity is much more complex (Types of Interactivity, ¶ 3).

Researchers continually attempt to define, operationalize, and understand interactivity. Wu (2005) illustrated that some researchers found that interactivity is positively related to attitude toward a web site (Cho & Leckenby, 1999; Hwang & McMillan, 2002; Jee & Lee, 2002; McMillan, 2000a; Wu, 1999; Yoo & Stout 2001). He also illustrated another group of researchers that did not find a positive relationship between these two variables (Bezjian-Avery, Calder, & Iacobucci 1998; Coyle & Thorson, 2001). Wu suggested that the researchers potentially used varying definitions and conceptualizations of interactivity, which possibly resulted in the contradictory findings.

Another important element related to user attitude is the optimal level of interactivity for a web site. Bucy (2004a) proposed that too much interactivity can create a negative attitude toward the web site, while moderate levels of interactivity are beneficial. He also suggested that an overuse of advanced interactive functions and multimedia could contribute to emotional disturbances and less favorable impressions. Bucy (2004b) labeled this phenomenon as “interactivity paradox” (p. 378). Furthermore, Bucy (2004a) suggested that negative attitudes toward a web site may result from limited cognitive capacities and information processing systems of Web users.

Similarly, Sundar et al. (2003) concluded from their experiment that a “systematic, nonlinear pattern across a number of variables is a strong indication that for the purpose of impression formation, there exists such a thing as too much interactivity” (p. 49). Consistent with the proposition of Bucy (2004a), Sundar et al. found participants that received high levels of interactivity from the candidate’s web site consistently had lower impressions within some measured items than the other two conditions that received lower levels of interactivity.

Additionally, Sundar and Kim (2005) found that user attitude of online advertisements suffered from the overuse of interactivity. They concluded that higher levels of interactivity appear to be “an overpowering peripheral cue that negates the relative advantage of animated over static ads. This implies the possibility of a threshold or sufficiency, meaning an upper limit beyond which peripheral cues are unlikely to cumulate in their impression-formation effects” (Discussion section, ¶ 4).

As illustrated within this section, interactivity is an often used but ill-defined concept among mass media and new media research. This study does not intend to functionalize or advance the operationalization of interactivity. It, however, descriptively analyzes the use of interactivity as an element within municipal web sites. Specifically, the researcher decided to

use previous studies' models and methods of measurement within the structural or features paradigm to analyze interactivity.

This study's use of the features approach to define interactivity does not reflect the researcher's opinion or perspective on the concept. Rather, the author selected this approach to analyze interactivity because of two specific reasons. Several studies involving physical interactive features of municipal web sites already exist (Moon, 2002; Stowers, 1999). These existing studies, however, provide information that is archaic in terms of the development of web sites and user expectations over the past five years. For example, in 2000, Ho (2002) discovered that some large cities continued to use older administrative-oriented web site designs despite the shift towards more user-friendly designs. Simultaneously, the adoption of time-sensitive communication and multimedia features, such as teleconferencing and the exchange of audio, video and graphics, around the end of the 1990s, likely influenced structural frameworks of future web sites (Bisdikian et al., 1998). Within only the last five years, the Web introduced other new media features such as the podcast and blog (Holtz, 2006). Many of these innovations likely were not present within analyzed web sites of the earlier studies. Therefore, this study provides a modernized illustration of municipal web sites' interactive features.

Additionally, the features paradigm of interactivity is an appropriate approach for this study because the presence of interactive features provides the potential for future interaction between the web site and the web user (Wu, 2005). The features approach provides opportunities for future municipal web site research within the features paradigm and supplementary research within the other paradigms. An analysis using the features paradigm provides an understanding of the web sites structural frameworks and the existence of interactive features. Before researchers test user perceptions, the physical medium must be understood.

1.4.3 Measuring Interactivity. Over the past decade, advertising, public relations, and communications researchers have conducted and published several dozen studies concerning interactivity and its operationalization. The following section analyzes only a small segment of these studies. Due to the nature of this study, the researcher focuses on previous attempts to measure, operationalize, and categorize interactivity based on its physical and structural characteristics.

Ghose and Dou (1998) developed a five-category scale to measure interactive features of corporate web sites. Their categories were customer support, marketing research, personal-choice helper, entertainment, and advertising, promotions, and publicity. Within each category, they provided a list of specific features, which resulted in a total of 23. Their content analysis of 101 corporate web sites revealed that the most frequently used interactive features were “key word search” (63%), “dealer locator” (36%), “software downloading” (31%), “comment” (28%), “online ordering” (23%), “sweepstakes” (22%), and “surfer postings” (22%) (p. 37). They also concluded that significant relationships existed between several of the features and web sites goals, which indicated that the type of web site and its objective potentially influenced the use of interactive features.

Ha and James (1998) created their own scale to measure structural interactivity. As already stated, they organized interactivity into five basic dimensions: playfulness, choice, connectedness, information collection, and reciprocal communication. They explained playfulness as various strategies used to gratify the self-communicator’s desires of web site users. These strategies involved electronic features such as games and various curiosity stimulation devices. They compared the choice dimension to playfulness because it incorporated the user’s internal emotions and satisfactions. Unlike the playfulness dimension, the choice dimension consisted of various user options available within each site, which could potentially

restrain from or influence further user navigation into cyberspace. The connectedness dimension included the accessibility of links to hypertexts to other web sites and the outside world. They defined the information collection dimension by including features that gathered information about Web users. Functions such as visitor registrations and cookie files were examples. Their last dimension was reciprocal communication, which involved the interactive capability of the web site to be a two-way communication device. This dimension involved functions such as e-mail and discussion rooms.

The Ha and James (1998) study used these five dimensions within a basic content analysis to explore what functions manufactured goods companies, service companies, and retail outlets used on their home pages. They found that 61.2% of the web sites involved reciprocal communication functions, which was the most frequently used dimension. Among the reciprocal communication dimension, the e-mail option was the most prevalent function (46.4%). The researchers also looked at the hyperlink aspect of interactivity on the home page and divided them into five categories: self product-related, company-related, third-party product-related, links to other information within the same sight, and links to other information not included within the same site. They considered highly connected sites to contain at least four or five of the different categories of hyperlinks on their home pages.

McMillan et al. (2003) provided a different approach to measure interactivity. They conducted an experiment on 311 consumers as they sought to find whether site interactive features and creative strategies (structural variables) or perceived interactivity and consumer involvement (perceptual variables) were better indicators of attitude towards a web site. Each participant viewed one of four hotel web sites. Each web site contained a different condition. The researchers categorized interactive features exclusively as high use and low use. They determined whether interactivity use was high or low based on the number of interactive

features. McMillan et al.'s quantitative method of measuring interactivity provided another measurement of structural interactivity. While their method provided a quantifiable measurement of interactivity, it, however, eliminated various stages or dimensions, which differentiated the characteristics and behaviors of interactive features.

In some cases, researchers measured structural interactivity solely on the use of hyperlinks (Sundar et al., 2003; Sundar & Kim, 2005). Sundar et al. (2003) explored web users' attitudes and impressions of political candidates and their policies following exposure to the candidates' web sites. Sixty undergraduate students participated in their experiment. Structural interactivity was the independent variable, while they measured for perceptual outcomes. They determined that low-level interactivity would contain no hyperlink. Medium-level interactivity would consist of four hyperlinks that provided access to separate portals based on the candidate's four different primary policy issues. High-level interactivity contained the same framework as medium-level interactivity except that the higher level contained three additional links within each of the four portals to subsidiary issues. Using the framework of Sundar et al., Sundar & Kim (2005) conducted an experiment to analyze the relationship between interactivity, advertisement shapes, and animation within online advertisements. Their categorization of structural interactivity replicated Sundar et al., except they used "interactive messaging/marketing units (IMUs)" to link to connected web sites instead of hierarchical hyperlinked pages (Sundar & Kim, Abstract, ¶ 1).

Within the research of municipal and governmental web sites, researchers conducted two specific studies that explored interactivity. The first study used a checklist of interactive features and investigated for the presence of each feature within the government web site. Stowers (1999) performed a content analysis within this study to explore content and use of interactive features within municipal and states' web sites in 1997. Within the analysis of municipal web

sites, she focused on web sites of cities with a population of at least 100,000 residents. Among the selected cities, 48.3% had official government web sites. On her checklist, the availability of full discussion features, conferencing, guest books, features to make comments, and embedded mailtos were considered interactivity functions. Stowers also coded for phone numbers and searches, e-mail addresses, lists and searches, contact information, public policy discussion areas, online services, help functions, and web site search functions. She used the entire web site as the unit of analysis and even resorted to a search function, if available, to find various components if not readily visible.

Stowers (1999) found 90% of cities' web sites provided contact information. Of these web sites, 84% provided telephone information, 75% provided "scattered e-mail addresses," 25% provided e-mail information, 5% had phone number searches and 4% had e-mail searches (p. 121). Among the interactive functions analyzed, Stowers found 70% of web sites provided embedded mailtos, 39% had feedback features to make comments, 10% had guest books, and 1% had full discussion and conferencing features. Additionally, 33% of the web sites had search functions for the overall site, 13% had online services, and 10% had help functions for assistance. Stowers also found only 1% of the sites had public policy discussion areas. Within this function, she looked for forums and comment input features. Stowers concluded, "The ability to communicate with appointed and elected public officials can make the difference between passive information delivery and a site that provides dynamic service delivery" (p. 120). While her study provided a foundation for future researchers to explore interactive features of municipal web sites, it did not analyze specific features often found in later studies such as multimedia or specific two-way transaction features. Additionally, Stowers' findings would not accurately represent current municipal web sites because of recent technological advancements and Web developments, which would change the appearance and use of web sites.

Several years later, Moon (2002) developed a measurement of interactivity within municipal web sites. Within his study, Moon examined a survey completed in 2000 by cities with a population of at least 10,000 residents. His survey examined municipal governments' uses of web sites. Of the 1,471 respondents, which designated a 51% response rate, 1,260 (85.3%) had their own web site (p. 427). Additionally, 98% percent of cities with at least 50,000 citizens had governmental web sites. Moon also indicated that only 114 (8.2%) of the respondents had some form of a strategic plan for their e-government objectives.

Among his analysis of the survey, Moon (2002) incorporated a five-stage system, which looked at technical complexity and web interactivity. One-way communication of information composed the first stage. Basic two-way communication composed the second stage. He created the third stage to contain complex two-way communication such as service and financial transactions. Integration between horizontal and vertical sites composed the fourth stage. The fifth stage allowed online political communication such as the ability to vote electronically and participate in online public forums and political surveys.

Moon's (2002) five-stage system incorporated the features approach of interactivity. Similar to other research studies (Ha & James, 1998; Sundar et al., 2003), he incorporated connectedness to other web sites and internal web sites as a measurement of interactivity. Similarly, the measurement of two-way communication of information resembled a level of measurement within the classification system used by Ha and James (1998). Within the Ha and James' classification system, they considered the reciprocal communication dimension as a measurement of two-way communication. Additionally, the other stages of interactivity within Moon's system analyzed for structural elements of municipal web sites. Overall, Moon's five-stage system was more complex than Stowers' checklist method and most closely resembled Ha and James' system of measuring interactivity.

Under the one-way communication stage, Moon (2002) found that 1,260 (100.0%) of the responding municipal governments with existing web sites claimed their sites posted information (p. 428). Under the two-way communication stage, he found 267 (21.2%) participants claimed to have “requests for services,” such as streetlight and pothole repairs, within their web sites, 175 (13.9%) reported that “requests for government records” exist within their web sites, and 97 (7.7%) claimed “to offer online registration for programs” within their sites (p. 428).

Under the service and financial stage of interaction, Moon (2002) found e-procurement, purchasing and online requests for proposals, existed within 723 (57.4%) and 359 (28.5%) of the respondents’ sites respectively. The application or renewal for city permits existed within 63 (5.0%) of the respondents’ web sites. Forty-six (3.7%) of the respondents reported that their sites allowed businesses to apply or renew for licenses, while 10 (0.8%) reported that their sites contained property registration features. Additionally, the ability to pay utility bills, license or permit fees, fines, and taxes existed within 29 (2.3%), 22 (1.7%), 21 (1.7%), and 14 (1.1%) of the respondents’ web sites respectively (p. 428). The survey did not address any features within stages four or five. Moon (2002), however, believed that municipal web sites scarcely used features within these two stages because of their under use of features within stage three. One additional finding indicated that 16 (1.3%) of the sites allowed paid advertising within their site.

Moon concluded that city web sites rely on interactivity that involves one-way communication of information where they simply provide government information or simple two-way communication through Web channels such as the mentioned service requests. While his findings impacted research of government web sites and interactivity, they would likely fail to accurately represent current municipal web sites. Similar to the critique of Stowers’ (1999) research, recent advancements in Web development and technology would likely cause this distortion. Furthermore, Moon’s study analyzed the responses of municipal government officials

rather than their actual web sites. Additional research involving a content analysis of the actual web site would provide more accurate and current information.

As illustrated within this section, many definitions exist that outline the concept of interactivity. In general, researchers currently cannot agree on an operational definition of interactivity or a scale to measure it. To reiterate, this study focused on just one paradigm of interactivity, the features or structural approach, and measure interactivity based on previous studies' scales and measurements within this paradigm. The researcher only addressed physical interactive features and allowed future researchers to explore the other two paradigms. The next section introduces Taylor's six-segment strategy wheel and discusses the relationship between Taylor's model and interactivity.

### **1.5 Advertising Message Strategy and the World Wide Web**

Another structural variable within a municipal web site is the message strategy used to advertise the city (McMillan et al., 2003). The advertisers' use of an appropriate message strategy is important to consider for effective advertising (Kim et al., 2005). A message strategy, which incorporates the advertiser situation, is the "guiding approach to a company's or institution's promotional communication efforts" (Taylor, 1999, p. 7). Many advertisers believe that no set formula exists to determine how advertising will affect audience behavior.

Advertisers, however, believe the advertising message must rely on the situation: type of product, the intended audience, and the motivation driving the purchasing decision (Rossiter, Percy, & Donovan, 1991). These factors would also be different when applied to city advertising. City advertisers must adjust their message strategy to represent the city or product they desire to advertise. City advertising may have different target publics. City advertisers should also consider the expectations, needs, and wants of their target audience that will receive their advertisements. Understanding that the advertising and communication situation influences

the message strategy, researchers conducted a number of studies to develop models to assist advertising managers with their construction of effective advertisement message strategy.

1.5.1 Theoretical Background in Advertising Research. The 1960s hosted several research attempts to understand advertising effectiveness. Lavidge and Steiner (1961) developed a model for “predictive measurements of advertising effectiveness” (p. 59). Their model provided seven hierarchical steps of functional advertising that started from a customer’s lack of awareness to the purchase action. Their model illustrated that consumers do not evolve from uninformed or uninterested individuals to loyal and influenced purchasers of an advertised product instantly. Lavidge and Steiner said, “Advertising may be thought of as a force, which must move people up a series of steps” (p.59).

Several years later, Kotler (1965) researched five “models of human behavior” that he incorporated into marketing strategy so that marketing managers could understand buying behavior and influencing factors: the Marshallian Economic Model, the Pavlovian Learning Model, the Freudian Psychoanalytical Model, the Veblenian Social-psychological Model, and the Hobbesian Organizational-factors Model (p.37). Kotler referred to the “buyer’s psyche” as a “black box” (p. 37). The introduction of his models to marketing and advertising allowed future researchers and advertisers to understand the complexity of buyers’ decision making and thought process within this “black box.” Kotler concluded that to understand buyers, one must put “all these pieces of truth together into one coherent instrument for behavioral analysis” (p. 45).

Other early marketing and advertising researchers developed grid models such as the Boston Consulting Group's Market share/growth matrix, which, while simplistic, “met real market needs; particularly senior executives' desire to develop strategic thinking in an increasingly turbulent environment, and to communicate effectively with decentralized subsidiaries” (Morrison & Wensley, 1991, p. 105). The Foote, Coone & Belding Grid was

another model that advertising researchers developed to understand consumer purchase decisions, which incorporated several behavioral theories: economics, response actions based on learning, psychological elements and social influences (Ratchford & Vaughn, 1989). The FCB Grid, based on the hierarchy of effects model, “postulates that the hierarchy varies depending on whether the decision is: (1) high vs. low in involvement; (2) thinking vs. feeling” (Ratchford & Vaughn, p. 293). Rossiter and Percy (1987) created the Rossiter-Percy Grid, which assisted managers with advertising planning. This grid accounted for consumer attitude toward the advertised products and services by taking involvement and the type of motivation into consideration. Rossiter and Percy also designed the grid so that it would account for brand awareness, which they divided into brand recognition and brand recall.

Another model that was influential to advertising and marketing researchers was the Elaboration Likelihood Model (ELM). Petty and Cacioppo (1983) developed the ELM, which dealt with attitude change and consumer persuasion. Their model illustrated that attitude change results from several possible causes. Attitude change could result from “a diligent consideration of information that is central to what people feel are the true merits of the advocacy” (Taylor, 1999, p. 19). Attitude change could also occur “because the attitude object has been associated with either positive or negative cues, or the person uses a simple decision rule to evaluate a communication” (Taylor, p.13).

Two decades after Kotler (1965) requested for “a coherent instrument for behavioral analysis” (p. 45) that pieced together his five models of consumer behavior, Laskey, Day, and Crask (1989) created a useful typology that answered his request. Laskey et al. analyzed previous models and studies and developed their typology, which contained classifications and definitions of message strategies, specifically for television advertising. Their model first broke the message strategy into one of two categories, informational or transformational. Once

categorized into one of these categories, the coders placed the advertisement into a sub-category, which further classified the main message strategy. Sub-categories within the informational category were comparative, unique selling proposition, preemptive, hyperbole, and generic strategies. Sub-categories within the transformational category were user image, brand image, use occasion, and generic strategies.

Laskey et al. (1989) tested their typology on 891 commercials for consumer packaged products. A content analysis of this sample indicated that coders reliably agreed on 94% of the commercials' main message strategies (informational or transformational) (p. 40). Within these agreements, coders reliably agreed on 90% of the commercials' sub-category message strategies. Additionally, they calculated an average contingency coefficient of 0.897, which indicated their typology yielded suitable intercoder reliability. They concluded that they developed an operable typology for identifying message strategies within television commercials, but their typology could likely be used to measure advertisements within other media.

1.5.2 Taylor's Six-Segment Message Strategy Wheel. All of the mentioned models played a role in the advancement of advertising research and the advertising practice. Ronald E. Taylor (1999) adopted features and characteristics he felt were strengths from these models and invented his six-segment message strategy wheel. In doing so, Taylor sought to eliminate the weaknesses of each and make a more improved model to understand advertising message strategy.

Taylor's six-segment strategy wheel model contained a vertical axis that divided messages into either containing a "transmission view" (rational or informative) or "ritual view" (emotional or transformational) (Taylor, 1999, p. 8). The Appendices provides a diagram of this model (See Appendix A, Fig. 1). After the subdivision, he applied several of Kotler's consumer behavior models and the high versus low involvement concepts of the FCB Grid to the wheel

(See Appendix A, Fig. 2). From these, he developed four quadrants on his wheel with two on each side of the vertical axis (See Appendix A, Fig. 3).

On the right side of the vertical axis, which was the “ritual view,” he developed the “affective” and “satisfaction” quadrants (Taylor, 1999, p. 9). Taylor applied the concepts of the Freudian Psychoanalytical Model on the upper half, and it represented “affective” advertising planning strategies. On the lower half, Taylor placed the concepts of the Veblenian Social-Psychological Model, which represented “satisfaction” advertising strategies. On the left side of the vertical axis, he developed the “informative” and “habitual” quadrants (p. 9). On the upper half was the “informative” advertising strategy quadrant, which applied the concepts from the Marshallian Economic Model. On the lower “habitual” strategy quadrant, Taylor applied the concepts from the Pavlovian Learning Model. These quadrants also coincided with the level of consumer involvement. He placed advertisement strategies for products that needed more involvement during the buyer’s decision making process into one of the upper quadrants. Taylor placed those that did not need a high level of involvement into one of the lower quadrants.

The development of Taylor’s model was nearly complete; however, two more additions were necessary. Taylor (1999) recalled that Ratchford (1987) struggled to develop a model based on the FCB Grid that accounted for influential social influences within the buying process. In response to the conflict between Kotler’s (1965) models and the FCB Grid, Taylor incorporated a third segment between his “affective” and “satisfaction” quadrants, which addressed the “social acceptance” dimension (Ratchford, 1987). Taylor then redefined the segments within his “ritual view” based on Kotler’s models, Ratchford’s conclusions and the FCB Grid’s conceptualizations of communication strategies. He labeled the new segments “ego” (Freudian), “social” (Veblenian), and “sensory” (Cyrenaics) as he identified them from the top to the bottom (clockwise) of his model (p. 11).

Additionally, Taylor (1999) noted a weakness on the “transmission view” side of his model following a series of qualitative interviews. While the FCB Grid only classified consumer involvement as high or low, his interviews indicated that some consumers desired a substantial amount of information about a product or service but time constraint and urgency limited the consumer from inquiring this information. This finding created a third dimension within his “transmission view” side of his model. He relabeled these segments “rational” (Marshallian), “acute need,” and “routine” (Pavlovian) as he identified them from the top to the bottom (counterclockwise) of his model (p. 12). Following Taylor’s two additions, his model contained a total of six segments (See appendix A, Fig. 4).

For each developed segment, Taylor (1999) provided descriptions. Products that are “ego-related” and “allow the consumer to make a statement to him/herself about who he/she is” would use an ego advertising strategy (p. 12). Examples of these products are jewelry products and some clothing items. Products that consumers want or need to “make a statement to others” would use a social strategy (p. 13). Examples of these products are some clothing items including shoes. Products that provide consumers “with ‘moments of pleasure’ based on any of the five senses” would use sensory strategies (p. 13). Examples of these products are music albums and fragrances.

Rationally based products that consumers’ purchase habitually would use routine strategies. Examples of these products are personal care products and routine grocery items. Products that require consumers to “desire information, but time limits the amount of information that can be gathered as well as duration of deliberation” would use acute needs strategies (Taylor, 1999, p. 15). Examples of these products are car batteries and tires, emergency surgery, and headache remedies. Products that require “considerable evaluative

efforts” before purchasing because of their importance and rational value would use ration strategies (p. 15). Examples of these products are family cars and computers.

1.5.3 Application of Taylor’s Model. Following the completion of his six-segment strategy wheel, Taylor (1999) said that his model has several uses. Advertising and marketing managers can use the model to assist with communication strategy. Furthermore, managers can analyze their competition’s advertising strategies to understand the competing market. Both of these uses will allow a company to develop an intended message strategy. Since the creation of Taylor’s model, several researchers conducted studies to test the functionality of the six-segment strategy wheel.

Taylor (1999) first applied his own model. He collected 178 completed questionnaires that participants from random public locations completed. Taylor asked the respondents to list an item they recently purchased in response to a “prompt drawn from one of the segments of the strategy wheel” (p. 14). He sought to determine if segments accounted for the participants buying decisions and if their buying decisions clustered by product type. He grouped the products into five categories based on their responses: (a) consumer durables and financial services; (b) clothing items, shoes, and accessories; (c) personal-care products and household items; (d) snack items, beer, recreation, and entertainment; and (e) miscellaneous items such as bird food, condoms, and tuition (p. 15).

Taylor (1999) found several significant findings. Women were more likely to list personal-care products, while men were more likely to list beer and snack items as routine purchases. Respondents between the ages of 18 and 24 were likely to be more involved with pre-purchase deliberation and decision making for their purchase of computers than older respondents. This same age group also was more inclined to place consumer durables and clothing items as acute need products than older respondents. Contradictorily, the older

respondents were more likely to place consumer durables such as home appliances and furnishing as ration purchases.

Taylor (1999) also tested his model within an experiment. He asked 12 graduate students in his advertising strategy class to provide as many message strategies describing oranges as possible. He gave them one hour to complete the experiment and only provided a basic definition of message strategies along with several examples. The students constructed an average of four strategy statements. Taylor then trained the same students with his model and asked them to replicate the experiment using grapes as a substitute for oranges. With the exposure to Taylor's model, his students significantly increased their strategy use to an average of nine message strategy statements (p. 16).

Other researchers have successfully applied Taylor's model to analyze advertising strategies. Morrison and White (2000) and Lee, Nam, and Hwang (2001) effectively used Taylor's model to find that corporate America more frequently used informational over transformational strategies during television advertising. Specifically, Morrison and White conducted a content analysis of television commercials for online dot.com companies during Super Bowl XXXIV in 2000. They found these companies most frequently used rational strategies (52%) followed by ego strategies within their television commercials, while the same companies rarely used routine, sensory, or acute need strategies. They concluded that these companies advertised on television during the Super Bowl to build credibility as an online company.

Lee et al. (2001) also analyzed the use of message strategies within 886 television commercials. They found routine strategies (58.6%) were the most frequently used, while ego, sensory, and acute need strategies were used in less than 10% of the commercials. Both of these studies indicated that Taylor's model is functional in television advertising. Several later studies

revealed that Taylor's model is applicable to analyze advertising within electronic and online media.

Hwang et al. (2003) also completed a study that successfully used Taylor's six-segment strategy wheel on corporate online advertising. They conducted a content analysis of 160 corporate Web sites that analyzed the message strategy, the different audiences targeted through the web site and the number and various functions used by the web site. The study indicated that corporate sites were more likely to use informational strategies. They concluded that more informational strategies were present potentially because of the Web's ability to allow unlimited time for the user to consume the medium's content. Specifically, they found the most frequently used advertising message strategy was routine. Hwang et al. found "message strategies varied somewhat by product category. Specifically, the three transformational message strategies showed significantly different distributions across product categories" (Message Strategy section, ¶ 4). Clothing and footwear products contained ego strategies, life insurance frequently used social strategies, and cookies and hotel and motel services often used sensory strategies.

One additional finding of Hwang et al. (2003) was that message strategy lacked significant relationships with the number of audiences targeted and the number of functions within the web sites. They hypothesized that web sites that used informational message strategies would have more functions and audiences. The researchers believed informational web sites would require more functions to disseminate this information. They concluded that web sites likely alter their message strategies more frequently as advertising campaigns change, while functions and audiences remain much more static.

Finally, one study analyzed the integration of message strategies between web sites and television advertisements. Kim et al. (2005) successfully used Taylor's six-segment strategy wheel to analyze companies' advertising strategies for television commercials during the 2003

Super Bowl. These researchers then analyzed the same group of companies and the message strategies integrated on their Web sites during the same period. They found television advertising, in general, relied on strategies that were more emotionally based, which would fall on the “ritual view” side of Taylor’s wheel. Web sites, on the other hand, applied strategies that were more informational or transmission-based. Kim et al. concluded that the six-segment strategy wheel is a useful tool for “identifying message strategies” across different media (p. 72), and it is valuable because it “considers message strategy from the perspective of how people make buying decisions and how advertising works” (p. 63).

This section introduced a functional model that researchers have already tested and proven its operability within both electronic and online media. The researcher uses Taylor’s six-segment strategy wheel model to analyze message strategies within this study. This study bases its analysis of message strategies on the studies that previously used Taylor’s model. This study’s analysis of municipal web sites is the first to test his model on non-corporate web sites. Similar to the research of Hwang et al. (2003), this study addresses the relationship between two structural variables, message strategy and interactivity, within municipal web sites. The following section addresses the study’s hypotheses and research questions.

## **1.6 Resulting Hypotheses and Research Questions**

Literature research assisted with the development of five hypotheses and eleven research questions. The following section provides hypotheses and research questions along with references back to the literature that reinforces the study’s predictions and the corresponding hypotheses.

Paddison (1993) concluded that city marketing and advertising was necessary to make the municipality competitive relative to its environments, to attract investments and additional resources from its environment, and to improve its image and quality of life for its residents.

The city promotes “the prosperity of the urban community” (Van den Berg & Braun, 1999, p. 992) to increase the number of residents, businesses, and tourists, to increase the wealth and city revenue, and to highlight the city’s educational, health, employment, entertainment, and cultural benefits (Clark, 2000; Crilley, 1993; Holcomb, 1993; Magnusson & Turner, 2003; Neal, 2006; Philo & Kearns, 1993; Rogerson, 1999; Van den Berg & Braun, 1999). All of these factors indicate more opportunity to advertise further growth. Clark (2000) argued that a smaller city is at a disadvantage:

A town wishing to grow large in competition with cities already large has more than the mere superior momentum of the cities to overcome. The bigger place is virtually certain to excel in transportation, labor market, leisure attractions, schools and other advantages, some or all of which touch upon every competitive business. (p. 12)

Hwang et al. (2003) looked at corporate web site advertising strategies. They said, “Larger companies have often made better use of transformational strategies than have smaller companies because they have more time and money to invest in building their brands through these experience-based strategies” (Theoretical Framework for Message Strategy section, ¶ 3). Based on their findings that larger revenue companies were more likely to use transformational strategies, cities may follow the same pattern.

H<sub>1</sub>: Cities that are classified as large will more likely use transformational strategies within their web sites.

H<sub>2</sub>: Cities that are classified as small will more likely use informational strategies within their web sites.

The capability to advertise a city may also be influenced by factors related to economic, social, and demographic characteristics (Hill et al., 1998; Jones & Jones, 1970). Hill et al. (1998) found that the manufacturing and educational industry sector often indicated the type of city, which could possibly predict the advertising strategy. They found cities that are economically

‘stressed’ are “typified by lower skilled and more manufacturing-based economic functions...and most importantly – they are typified by poorer social outcomes” (p. 1946). Educational-based, “knowledge-based,” or economically “healthier cities” as they called them, “are the most viable of all central cities in the country” (p. 1946). Thus, cities supported by the educational industry sector are more likely to be economically thriving. Cities supported by the manufacturing industry sector are more likely to be economically struggling. Related to the same literature findings for H<sub>1</sub> and H<sub>2</sub>, cities that have larger educational services industry sectors will find their cities hosting more residents and businesses that have more resources. More resources likely will yield more opportunities to advertise with transformational strategies.

H<sub>3</sub>: Cities that are classified as manufacturing-dominant will more likely use informational strategies within their web sites.

H<sub>4</sub>: Cities that are classified as education services-dominant will more likely use transformational strategies within their web sites.

Furthermore, cities that have a larger population will have more publics and needs to service (Hwang et al., 2003). One can expect more interactive web sites for cities with larger populations for this reason. Hwang et al. reinforced this prediction through their analysis of corporate web sites. They stated, “High-revenue companies also were more likely to appeal to multiple different kinds of audiences than were low-revenue companies. This is intuitively logical because high-revenue companies will generally have more stakeholders than low-revenue companies” (Summary section, ¶ 4).

Hwang et al. (2003) also made another relevant and interesting statement: “While high-revenue companies were generally able to provide more functionality at their Web sites than were low-revenue companies, there is some evidence that the Web could actually help to level

the playing field for smaller companies” (Summary section, ¶ 3). If true for cities, this could be an important finding. Thus, one hypothesis addresses the typology-interactivity relationship.

H<sub>5</sub>: Cities classified as large will have more interactive web sites than cities classified as small.

In addition to the five hypotheses, this study incorporates eleven additional research questions. These questions pertain to issues that were not incorporated within the hypotheses.

RQ<sub>1</sub>: What message strategies will medium-sized cities most likely use within their web sites?

RQ<sub>2</sub>: What message strategies will central/regional cities most likely use within their web sites?

RQ<sub>3</sub>: What message strategies will suburban/edge cities most likely use within their web sites?

RQ<sub>4</sub>: What message strategies will cities in each geographic region most likely use within their web sites?

RQ<sub>5</sub>: Are there any relationships between city minority population percentages and message strategies used within municipal web sites?

RQ<sub>6</sub>: Does city size classification likely affect the number of message strategies used within municipal web sites?

RQ<sub>7</sub>: Does geographic region classification likely affect the number of message strategies used within municipal web sites?

RQ<sub>8</sub>: What spatial relationship classification will most likely contain cities with more interactive web sites?

RQ<sub>9</sub>: What dominant industry classifications will most likely contain cities with more interactive municipal web sites?

RQ<sub>10</sub>: What geographic region classifications will most likely contain cities with more interactive municipal web sites?

RQ<sub>11</sub>: Are there any relationships between city minority percentages and interactive features within municipal web sites?

## CHAPTER 2 METHODOLOGY

The use of a content analysis was an appropriate design to measure message strategies, content, functions, and interactive features of web sites (Ha & James, 1998; Hwang et al., 2003; Kim et al., 2005; Moon, 2002; Stowers, 1999). Within this study, the content analysis analyzed two elements, interactive features and message strategies, of official government or municipal web sites. The researcher additionally wanted to find if relationships between these elements and city typology exist. Before executing the content analysis, the researcher developed a sample of American municipal web sites, determined which aspects of these web sites to analyze and trained two individuals to complete the coding process of the analysis.

### **2.1 Sample**

To obtain the sample, the researcher used the 2000 U.S. Census Bureau (n.d. c) to locate all cities with an incorporated population of 20,000 or greater. There were 1,076 cities with this categorization. A total of 240 cities were selected for the sample, which was 22.3% of this population (1,076 cities). This study required some variance between the sample's cities to analyze for existing relationships between city typology and their uses of interactive features and message strategies within their web sites. To ensure diversity within the sample, a stratified sampling method was used to guarantee the inclusion of small, medium, and large cities, based on their populations.

The sample selection process first included the 80 most populated and least populated cities from the selected population. Next, the author wanted to extract 80 cities from the interior section of the selected population. Unsurprisingly, the researcher noticed that the number of cities greatly increased as the population decreased. Thus an unequal distribution of cities existed, based on their population size, within the selected population of 1,067 cities. As a result, the researcher opted not to use the median (54,531) as a selection method because the

populations of the 80 cities located around the median were fairly similar to the populations of the smallest 80 cities. Instead, the mean for the entire selected population of 1,076 cities (107,722) was used. The author extracted the next 40 cities immediately above and below the mean population. Following the selection of these 240 cities, their web sites addresses were retrieved. There was, however, difficulty finding web sites for two cities in the lower populated group. Consequently, the next two cities from the selected population replaced them, which completed the sample.

Following the completion of the sample, the researcher created five city categorizations based on typologies of previous studies (Archer, 1969; Cohen-Blankshtain et al., 2004; Hill et al., 1998; Iyer, 2003; Jones & Jones, 1970; Magnusson & Turner, 2003). The five categories were city size, spatial relationship with surrounding cities, dominant industry, regional location, and the city's minority percentage. These categorizations were used to understand the sample's composition and to explore various relationships between city typology and their web sites uses of interactive features and message strategies after the content analysis.

The first category was city size, which reflected the total population within an incorporated city. The 2000 U.S. Census Bureau (n.d. c) provided a list of American Metropolitan Statistical Areas, counties and cities, which provided the population for each city within the sample. The study then used three classifications of city size: small, medium, and large. Large cities had more than 500,000 citizens. Medium cities had between 499,999 and 200,000 citizens, while small cities had less than 200,000 citizens. Using these classifications, the sample contained 160 (66.7%) small cities, 51 (21.3%) medium cities, and 29 (12.1%) large cities.

The second category accounted for spatial relationships with surrounding communities (Archer, 1969; Rehfluss, 1977; Scheer & Petkov, 1998). The spatial relationship category

contained two classifications, which were central/regional cities and suburban/edge cities. The researcher used the same 2000 U.S. Census Bureau (n.d. c) list that determined city size to classify cities' spatial relationships with surrounding cities. If the U.S. Census Bureau designated a city as the central city within a Metropolitan Statistical Area (MSA), then the city received a central/regional city designation by the census. If two central cities existed within a single MSA then both received central/regional city classifications. Examples include Dallas and Fort Worth, Texas, San Francisco and Oakland, California, Newark, New Jersey and New York City, Jersey City, New Jersey and New York City, and Gary, Indiana and Chicago, Illinois. Any additional outlying cities and towns within an MSA received suburban/edge city classifications. Using these classifications, the sample contained 137 (57.1%) central/regional cities and 103 (42.9%) suburban/edge cities.

The third category, dominant industry, accounted for the city population's largest working sector, which reflected one aspect of the city's socioeconomic structure (Hill et al., 1998; Jones & Jones, 1970). The 2000 U.S. Census Bureau (n.d. d) provided a list of 13 industry sectors, which accounted for the category's classifications. The list of industry classifications included the following 13 sectors: (a) Agriculture, forestry, fishing and hunting, and mining; (b) construction; (c) manufacturing; (d) wholesale trade; (e) retail trade; (f) transportation and warehousing, and utilities; (g) information; (h) finance, insurance, real estate, and rental and leasing; (i) professional, scientific, management, administrative, and waste management services; (j) educational, health, and social services; (k) arts, entertainment, recreation, accommodation, and food services; (l) other services (not including public administration); and (m) public administration.

With these classifications, the researcher noticed that educational, health, and social services accounted for a large percentage of the sample. Thus the researcher decided to divide

educational, health, and social services into two classifications to increase the sample's diversity, which created a total of 14 classifications. The two new classifications were educational services and health and social services. Using the 2000 U.S. Census Bureau (n.d. e) to explore the sample's industrial framework, Table 1 reveals the presence of dominant industry classifications within the sample.

The fourth category, regional location, had nine classifications. Regional classifications, or divisions, of the 2000 U.S. Census Bureau (n.d. f) accounted for the classification of the regional location category. (Table 2 lists the occurrence and its percent of each regional location classification within the sample.) The Census also grouped the nine divisions into four larger regions: Northeast (New England and Middle Atlantic), Midwest (East North Central and West North Central), South (South Atlantic, East South Central, and West South Central), and West (Mountain and Pacific). The researcher used the four larger regions to group the nine smaller divisions together during the data analysis process. The grouped regions provided additional classifications within the regional location category.

The last category accounted for minority percentage within a city population. Again, the 2000 U.S. Census Bureau (n.d. b) accounted for minority percentage statistics. The researcher specifically included all races that were not listed as white only within minority percentage classification, which included Hispanic and Latino races. Each city retained its specific minority percentage. For the entire sample, the percentages ranged from 3% to 97% with a mean of 40.22%, median of 36.90%, and modes of 35%, 38%, 49%, and 65%. All four of the modes had frequencies of three, which meant that most of the sample's minority percentages had frequencies of one. With so many frequencies of one, post hoc tests could not be performed. As a result, the researcher created an additional variable that grouped the minority percentages into percentage. For the entire sample, the percentages ranged from 3% to 97% with a mean of

Table 1:

Presence of Dominant Industry Classifications within the Sample

| Dominant Industry   | <i>f</i>          | <i>P</i>          |
|---|-------------------|-------------------|
|   | ( <i>N</i> = 240) | ( <i>N</i> = 240) |
| Manufacturing   | 91                | 37.9%             |
| Healthcare and social services  | 42                | 17.5%             |
| Professional, scientific, management, administrative, and waste management services | 35                | 14.6%             |
| Retail trade  | 28                | 11.7%             |
| Educational services  | 22                | 9.2%              |
| Arts, entertainment, recreation, accommodation, and food services                   | 10                | 4.2%              |
| Public administration   | 5                 | 2.1%              |
| Finance, insurance, real estate, and rental and leasing                             | 4                 | 1.7%              |
| Agriculture, forestry, fishing and hunting, and mining                              | 2                 | 0.8%              |
| Information   | 1                 | 0.4%              |

40.22%, median of 36.90%, and modes of 35%, 38%, 49%, and 65%. All four of the modes had frequencies of three, which meant that most of the sample's minority percentages had frequencies of one. With so many frequencies of one, post hoc tests could not be performed. As a result, the researcher created an additional variable that grouped the minority percentages into five classifications to allow post hoc tests when necessary. Thus the five sequential classifications contained intervals of 20% (e.g., 0 – .19, .20 - .39, .40 - .59, etc).

Table 2:

Presence of Regional Location Classifications within the Sample

| Geographic Division | <i>f</i>          | <i>P</i>          |
|---------------------|-------------------|-------------------|
|                     | ( <i>N</i> = 240) | ( <i>N</i> = 240) |
| Pacific             | 54                | 22.5%             |
| East North Central  | 37                | 15.4%             |
| South Atlantic      | 28                | 11.7%             |
| West South Central  | 28                | 11.7%             |
| Middle Atlantic     | 24                | 10.0%             |
| West North Central  | 21                | 8.8%              |
| Mountain            | 20                | 8.3%              |
| East South Central  | 14                | 5.8%              |
| New England         | 14                | 5.8%              |

To conclude, the sample's 240 cities represented a diverse mix of city types as illustrated within the sample's five categories. This sample's diversity allowed the researcher to analyze for significant findings between city typology and the uses of message strategies and interactive features of municipal web sites following the completion of the content analysis.

## **2.2 Unit of Analysis**

The unit of analysis for the study consisted of municipal web sites. Specifically, the study focused on elements within municipal home pages (Hwang et al., 2003). The home page is

an introductory page for the entire web site, which will likely shape the user's initial perception and determine whether the user will progress further into the web site (Ha & James, 1998). As a result, the home page is a common unit of analysis among Web content analyses. Furthermore, the home page is a suitable unit of analysis because of the varying sizes of web sites, which can create inconsistencies in the analysis (Ha & James, 1998; Hwang et al., 2003; Kim et al., 2005). Based on previous studies, the analysis of message strategies and interactive features within a web site's home page was a suitable unit of analysis for this study.

Within municipal home pages, the focuses of analysis were content, texts, pictures, hyperlinks, and graphics. For the analysis of message strategies, the researcher used primary pictures, graphics, and texts. For example, most municipal web sites contained pictures near the top of their home pages. Coders always analyzed these pictures. Additionally, many municipal home pages contained short, descriptive statements about their city, which were also analyzed. For the analysis of interactive features, the coders primarily analyzed text and content for features such as available phone numbers and e-mail addresses, while they analyzed hyperlinks and navigational bars for features such as online services and feedback functions. When necessary, the coders used hyperlinks on the home page to navigate to different pages only to verify features. For example, if a hyperlink labeled "weather" existed on the home page, the coder could follow the link to confirm that it was a weather information feature. All message strategies and interactive features from the municipal home pages were coded onto coding sheets. Within the Appendices, an example coding sheet exists (See Appendix B).

### **2.3 Pre-test**

Prior to the creation of a coding sheet and coder training, the researcher, similar to one previous study, analyzed 51 municipal web sites as a pre-test to identify design tendencies and reoccurring themes among interactive features and message strategies (Hwang et al., 2003). The

pre-test's findings helped the researcher understand the general framework found within many municipal web sites. With this understanding, the researcher prepared an effective coding sheet for the content analysis.

One result of the pre-test was the development of categories used to analyze interactivity within municipal web sites. The researcher placed interactive features into five categories based on their nature and functionality: (a) "One-way communication/information dissemination;" (b) "two-way communication and service/financial transaction;" (c) "connectedness;" (d) "multimedia capabilities;" and (e) "two-way real-time communication." The first category, "one-way communication/information dissemination," contained nine categories of interactive features. The second category, "two-way communication and service/financial transaction," contained 23 categories of interactive features. The level of "connectedness" was the third category. The "connectedness" category contained four options that measured the frequency of hyperlinks present within a home page. The fourth category, "multimedia capabilities," contained nine categories of interactive features. The final category, "two-way real-time communication," contained three categories of interactive features. For a visual example of the coding sheet refer to the Appendices (See Appendix B).

## **2.4 Coder Training**

Two coders participated within this study to analyze the sample's web sites. Neither coder specialized in advertising or Internet research. As a result, the coders undertook a substantial amount of training before the final content analysis. Both coders read Taylor's (1999) study that introduced his model. Additionally, they read the studies of Hwang et al. (2003) and Kim et al. (2005), which provided background information on both message strategy and interactivity theories. These two studies also allowed the coders to visualize the execution of content analysis within both message strategy and interactivity research.

After they read these studies, the coders received additional training to prepare them for the analysis of web sites. The researcher ensured that the coders understood what to look for within each message strategy. The coders received a coder's guide to direct them through the analysis of message strategies, which can be found in the Appendices (See Appendix C). The coder's guide was nearly identical to the one used by Kim et al. (2005) during their analysis of television and web site advertising. The primary difference between the coder's guide used within this study and in Kim et al.'s was the wording of the instructions. Kim et al. analyzed corporate advertising, whereas, this study analyzed advertising and communication within municipal web sites. As a result, the coder's guide used within this study essentially replaced words such as corporate, consumers, and purchase with cities, publics, and investments (Kim et al., Appendix 2, Message Strategy section). The researcher also removed instructions that directly related to the use of corporate web sites.

Training along with a system of coding helped with consistency and reliability between the two coders' decisions. Using the coder's guide, the researcher and the coders agreed upon a system to assist with the identification of various message strategies because of the subjectivity involved within this analysis. Pictures, for example, provided ambiguity for the coders. Several agreements were decided upon regarding the analysis of pictures. Pictures that contained the American flag or its stars and stripes communicated patriotism, which characterizes a fulfilled internal need for some individuals. Thus the use of the American flag in pictures indicated the use of an ego strategy. Another ego strategy involved the use of yachts and lavish country clubs in pictures to communicate luxury, which reflected another "appeal to vanity" (Kim et al., 2005, Appendix 2, Message Strategy section).

Pictures of social and community interaction between groups of people, such as crowds of shoppers in a mall or a group of apparent friends socializing, indicated uses of social

strategies. Pictures, such as colorful botanical gardens or sunsets over the ocean, that touched any of the five senses indicated uses of sensory strategies. Pictures or illustrations intended to serve “as a cue or reminder” to gradually increase the chances for “habitual” investments into the city indicated uses of routine strategies (Kim et al., 2005, Appendix 2, Message Strategy section). An example of a cue or image builder was the picture of an identifiable skyline, such as New York City, which reinforced the city’s image as a premier business, cultural, and financial center. Images of a city skyline establish and remind residents and businesses that their city is an active place to continually conduct weekly business and regularly participate in recreational activities. For visitors, especially within nearby communities, the uses of skylines might remind them to frequently visit or return to the city’s bustling cultural center for day trips or weekend vacations. Additional examples of routine strategies within pictures were the uses of recognizable icons and landmarks such as Seattle’s Space Needle, San Francisco’s Golden Gate Bridge, Washington D.C.’s Lincoln Memorial, and New Orleans’ recognizable French Quarter architecture. All of these examples provide cues, especially for visitors, to inspire frequent visits.

To prepare the coders for the analysis of interactivity, the researcher went through the list of features provided in the coding sheet. The coders were familiar with most of the features. Similar to the preparation for message strategy analysis, the researcher and coders agreed on descriptions of each interactive feature to ensure accuracy and reliability during the analysis. For example, the coders received instructions to analyze all hyperlinks within the home page. To locate all available hyperlinks, the coders had to move their pointing devices all over the web pages. The coders were instructed to refrain from using the links unless they believed a hyperlink was an interactive feature, and they wanted to confirm its function as previously stated. In this case, the researcher instructed the coder to navigate into the connecting web page to

verify if the interactive feature existed. Additionally, the coders were required to analyze home pages for navigation bars with enhanced features. Some navigation bars with enhanced features allowed drop down menus with additional links. Hyperlinks found on any drop down menu from navigation bars and within drop boxes were included within the analysis as well. Furthermore, the coders also received instruction to classify manually controlled photo slideshows and photo libraries together, while they classified any series of uncontrolled flashing pictures or slideshows as graphic animation. Finally, the last step of coder training involved the analysis of eight web sites for practice. The researcher analyzed the practice web sites with each coder.

## **2.5 Gathering of Data**

Following the completion of the coding sheet and the coder training process, the coders participated in three individual practice tests that analyzed 25 cities each. The final practice test ensured accuracy and reliability within the coders' interpretations and made a final confirmation that the coding sheet was adequate and understandable. With this confirmation, the coders began their analyses of the 240 municipal web sites within the sample. The coders divided the sample but analyzed identical web sites for 25 cities (10.0%) to test for intercoder reliability. The coders had to analyze the 25 identical web sites during the same 24-hour period to eliminate variations in content and message strategy (McMillan, 2000b). The analysis revealed an average intercoder reliability of 90.2% using Holsti's (1969) method.

The final content analysis occurred between April 18 and May 3, 2006. Both coders received a Microsoft Excel spreadsheet that contained a list of coding sheets. The list contained coding sheets for each city within the sample, along with a matching identification number and the Web address to its corresponding home page. Thus the coding sheet allowed the coder to directly link to the home page of every city.

The coding process involved two primary steps. The first step was to analyze the web site's use of message strategies, which closely followed the processes used by Hwang et al. (2003) and Kim et al. (2005). Each city web site potentially could use more than one message strategy (Taylor, 1999). Thus, after spending some time viewing the web site's use of message strategies, the coder recorded into the coding sheet all message strategies used within the site (See Appendix C, Fig. 1). After the coder recorded all message strategies used within the web site, he or she had to determine the overall message strategy. The overall message strategy addressed whether the web site's use of strategies was more informational or transformational. The coder used a 3-point scale to determine the overall message strategy (See Appendix C, Fig. 2). The scale provided the following sequential categories: (a) More transformational (category 1); (b) equally informational and transformational (category 2); and (c) more informational (category 3). The coders were allowed to choose only one category for each site.

Unlike the previous analysis that determined whether each strategy existed (at least one occurrence) within the city's home page, the overall strategy measured the entire composition of strategies used within the home page. While the presence of specific message strategies influenced the coder's decision to analyze overall strategy, the overall strategy reflected the presence and pervasiveness of all strategies used within the web site.

As an example, a web site might have two small pictures located near the edge of its layout. One picture uses sensory strategies and the other uses social strategies. The web site does not use any ego, routine, or acute need strategies. The remainder and majority of the web site uses ration strategies. In this example, more specific transformational strategies existed. The overall strategy, however, would be more informational because the presence and pervasiveness of the ration strategies throughout the entire web site. Another example, using the same situation as before except that ration strategies are equally present and pervasive as the

social and sensory strategies, would yield a different overall strategy. In the case of this example, the web site's overall strategy was equally information and transformational. If the use of ration strategies within this example web site decreased more and the social and sensory strategies became present and pervasive, then the web site's overall strategy would be more transformational (See Appendix C, Fig. 2).

Following the conclusion of the content analysis, the researcher created a variable using the six specific message strategies, which was labeled, "the sum of all strategies." The "sum of all strategies" variable incorporated whether each of the six message strategies were present within a web site. Thus the variable's coding ranged from zero to six. The variable, however, did not measure the actual frequency of each message strategy within a web page. As a result, "the sum of all strategies" measured the number of strategies used within a web site.

After the first step of the coding process (message strategy analysis), the coder analyzed web sites uses of interactive features, based on previous research of interactivity within the features paradigm (Ha & James, 1998; Moon, 2002; Stowers, 1999). Thus the coders searched for the existence or nonexistence of each interactive feature in the code sheet. The availability of e-mail addresses, phone numbers, chat rooms, forums, user choices, web site search functions, podcasts, video conferencing options, photo galleries, games, and service requests were examples of interactive features. Additionally, the coding sheet provided options to code features not listed, which allowed the coders to find any additional interactive features (See the Appendices for a sample coding sheet of interactive features (See Appendix B).

Following the completion of the content analysis, the researcher created a variable, labeled "interactive feature total," that measured the total number of interactive feature categories used within each web site. The variable revealed a moderate Cronbach's Alpha,  $\alpha (N = 41) = .731$ . Thus more features present indicated that the site was more interactive, which

reflected measurements of interactivity within several previous studies (Hwang et al., 2003; Sundar et al., 2003). Theoretically, the more interactive two-way real-time and reciprocal communication (higher level) features also indicated a more interactive site (Ha & James, 1998; Moon, 2002).

## CHAPTER 3 RESULTS

Two coders analyzed the 240-web site sample. The coders analyzed each web site for approximately 10 minutes. The coders shared 25 (10.42%) identical web sites to test for intercoder reliability. Holsti's formula (1969) was the method used to test intercoder reliability. Intercoder reliability ranged between 52.0% and 100.0% for all variables with an average of 90.2%. Intercoder reliability among the message strategy variables ranged between 76.0% and 100% with an average of 85.7%. Intercoder reliability for the interactivity variables ranged between 52.0% and 100.0% with an average of 90.9%. Specifically, two variables revealed intercoder reliability below .70, which were e-mail hyperlinks (mailtos) used for feedback (52.0%) and permit application of renewal functions (64.0%). When disagreements existed between the two coders, the researcher intervened and worked to resolve the discrepancies. The majority of the variables, however, received at least an 80.0% reliability rating.

### **3.1 Classification of Message Strategies**

The coders found 508 total message strategies used within the sample's 240 web sites. Of the 508 strategies, 289 were informational, while 219 were transformational. (Table 3 presents the frequency of each message strategy used within the sample and the percentage of the sample that contained the message strategy.)

Among the sample's web sites, routine strategies were the most frequently used message strategy within nearly every city size, spatial relation, dominant industry, geographical division, and minority percentage classifications. Sensory strategies were the second most frequently used strategy within nearly every city classification. (Table 4 presents the percentages of every message strategy used within each city classification.)

Overall message strategy allowed the coders to analyze for overall composition of message strategies used within the web site, which reflected the presence and pervasiveness of

Table 3:

Frequencies of Strategies and their Percentages within the Sample

| Message Strategy | <i>f</i><br>( <i>N</i> = 240) | <i>P</i><br>( <i>N</i> = 240) |
|------------------|-------------------------------|-------------------------------|
| Routine          | 219                           | 91.3%                         |
| Sensory          | 123                           | 51.3%                         |
| Rational         | 63                            | 26.3%                         |
| Social           | 57                            | 23.8%                         |
| Ego              | 39                            | 16.3%                         |
| Acute Need       | 7                             | 2.9%                          |

all six specific message strategies used. Of the sample's 240 web sites, the coders found that overall message strategies were "more informational" within 108 (45.0%) of the web sites. The coders also found that overall message strategies were "equally informational and transformational" within 101 (42.1%) web sites, while the remaining 31 (12.9%) were "more transformational."

Among the city size classifications, large cities (48.3%) and small cities (48.3%) most frequently used "more informational" overall strategies, while "equally informational and transformational" overall strategies were most frequently used among medium-sized cities (43.1%). Both suburban (45.6%) and central (44.5%) city classifications used "more informational" overall strategies most frequently. Of the dominant industry classifications that contained more than 10 cities, "retail trade" (60.7%), "arts, entertainment, recreation,

Table 4:

Percentages of Message Strategies Used within Each City Classification

| City Classifications  | <i>N</i> | Message Strategies |               |         |       |        |         |
|---|----------|--------------------|---------------|---------|-------|--------|---------|
|   |          | Rational           | Acute<br>Need | Routine | Ego   | Social | Sensory |
| <b>City Size</b>  |          |                    |               |         |       |        |         |
| Small   | 160      | 23.8%              | 1.3%          | 88.8%   | 16.3% | 21.9%  | 44.4%   |
| Medium  | 51       | 37.3%              | 9.8%          | 96.1%   | 23.5% | 25.5%  | 68.6%   |
| Large   | 29       | 20.7%              | 0.0%          | 96.6%   | 3.4%  | 31.0%  | 58.6%   |
| <b>Spatial Relation</b>   |          |                    |               |         |       |        |         |
| Central   | 137      | 27.0%              | 2.9%          | 90.5%   | 12.4% | 25.5%  | 55.5%   |
| Suburban  | 103      | 25.2%              | 2.9%          | 92.2%   | 21.4% | 21.4%  | 45.6%   |
| <b>Dominant Industry</b>  |          |                    |               |         |       |        |         |
| Manufacturing   | 91       | 26.4%              | 1.1%          | 93.4%   | 14.3% | 26.4%  | 48.4%   |
| Health/Social Services  | 42       | 28.6%              | 0.0%          | 88.1%   | 21.4% | 23.8%  | 59.5%   |
| Professional, Scientific, Management, etc.                        | 35       | 28.6%              | 8.6%          | 88.6%   | 14.3% | 22.9%  | 45.7%   |
| Retail Trade  | 28       | 32.1%              | 10.7%         | 85.7%   | 7.1%  | 17.9%  | 42.9%   |
| Educational Services  | 22       | 18.2%              | 0.0%          | 95.5%   | 18.2% | 27.3%  | 50.0%   |
| Arts, Entertainment, Recreation, Accommodation, and Food Services | 10       | 30.0%              | 0.0%          | 90.0%   | 20.0% | 10.0%  | 60.0%   |
| Public Administration   | 5        | 20.0%              | 0.0%          | 100.0%  | 20.0% | 40.0%  | 60.0%   |

(table continued)

|   |    |       |       |        |        |       |        |
|---|----|-------|-------|--------|--------|-------|--------|
| Finance, Insurance,<br>Real Estate, and<br>Rental and Leasing   | 4  | 0.0%  | 0.0%  | 100.0% | 25.0%  | 25.0% | 75.0%  |
| Agriculture,<br>Forestry, Fishing,<br>and Hunting and<br>Mining | 2  | 0.0%  | 0.0%  | 100.0% | 50.0%  | 0.0%  | 100.0% |
| Information   | 1  | 0.0%  | 0.0%  | 100.0% | 100.0% | 0.0%  | 100.0% |
| Geographic Divisions  |    |       |       |        |        |       |        |
| Pacific   | 54 | 22.2% | 1.9%  | 90.7%  | 29.6%  | 20.4% | 63.0%  |
| East North Central  | 37 | 24.3% | 0.0%  | 89.2%  | 13.5%  | 27.0% | 40.5%  |
| West South Central  | 28 | 35.7% | 3.6%  | 92.9%  | 10.7%  | 39.3% | 46.4%  |
| South Atlantic  | 28 | 25.0% | 10.7% | 92.9%  | 17.9%  | 14.3% | 53.6%  |
| Middle Atlantic   | 24 | 20.8% | 0.0%  | 91.7%  | 12.5%  | 20.8% | 37.5%  |
| West North Central  | 21 | 23.8% | 0.0%  | 85.7%  | 9.5%   | 23.8% | 47.6%  |
| Mountain  | 20 | 20.0% | 10.0% | 90.0%  | 15.0%  | 30.0% | 70.0%  |
| East South Central  | 14 | 42.9% | 0.0%  | 92.9%  | 7.1%   | 7.1%  | 57.1%  |
| New England   | 14 | 35.7% | 0.0%  | 100.0% | 7.1%   | 28.6% | 35.7%  |
| Minority Percentage   |    |       |       |        |        |       |        |
| 0.0 – 19.99%  | 61 | 23.0% | 0.0%  | 83.6%  | 13.1%  | 16.4% | 37.7%  |
| 20.0 – 39.99%   | 75 | 29.3% | 1.7%  | 93.3%  | 18.7%  | 22.7% | 50.7%  |
| 40.0 – 59.99%   | 52 | 26.9% | 1.3%  | 92.3%  | 7.7%   | 32.7% | 59.6%  |
| 60.0 – 79.99%   | 33 | 24.2% | 0.0%  | 97.0%  | 21.2%  | 30.3% | 72.7%  |
| 80.0 – 100.0%   | 19 | 26.3% | 0.0%  | 94.7%  | 31.6%  | 15.8% | 36.8%  |

accommodation, and food services” (60.0%), “professional, scientific, management, administrative, and waste management services” (48.6%), and “manufacturing” (45.1%) classifications used “more informational” overall strategies most frequently. The “health and social services” (50.0%) classification used “equally informational and transformational” overall strategies most frequently, while the “educational services” classification used “more informational” (45.5%) and “equally informational and transformational” (45.5%) overall strategies most frequently.

Among the geographic division classifications, the New England (64.3%), Middle Atlantic (62.5%), West North Central (52.4%), and East North Central (45.9%) divisions most frequently used “more informational” overall strategies. The East South Central (57.1%), West South Central (50.0%), South Atlantic (50.0%), Mountain (45.0%), and Pacific (42.6%) divisions most frequently used “equally informational and transformational” overall strategies. Among the minority population percentage classifications, cities with minority population percentages between 80.0% and 100.0% (57.9%), between 0.0% and 19.99% (52.5%), between 20.0% and 39.99% (45.3%), and between 40.0% and 59.99% (44.2%) most frequently used “more informational” overall strategies, while cities with a minority population percentage between 60.0% and 79.99% (54.5%) most frequently used “equally informational and transformational” overall strategies. (Table 5 presents the percentages of every overall strategy used within each city classification.)

### **3.2 Classification of Interactive Features**

This study also analyzed the use of interactive features within municipal web sites. To analyze the sample, the coders used the 45 categories of interactive features within the coding sheet, which included the “other” (any additional features) categories. From the analysis, the coders located 51 available interactive features and functions from the sample’s web sites.

Table 5:

Percentages of Overall Strategies Used within Each City Classification

| City Classifications  | <i>N</i> | Overall Strategies |  |                       |
|---|----------|--------------------|--|-----------------------|
|   |          | More Informational | Equally Informational and Transformational | More Transformational |
| <b>City Size</b>  |          |                    |  |                       |
| Small   | 160      | 48.3%              | 43.1%                                      | 10.6%                 |
| Medium  | 51       | 39.2%              | 43.1%                                      | 17.6%                 |
| Large   | 29       | 48.3%              | 34.5%                                      | 17.2%                 |
| <b>Spatial Relation</b>   |          |                    |  |                       |
| Central   | 137      | 44.5%              | 42.3%                                      | 13.1%                 |
| Suburban  | 103      | 45.6%              | 41.7%                                      | 12.6%                 |
| <b>Dominant Industry</b>  |          |                    |  |                       |
| Manufacturing   | 91       | 45.1%              | 44.0%                                      | 11.0%                 |
| Health/Social Services  | 42       | 33.3%              | 50.0%                                      | 16.7%                 |
| Professional, Scientific, Management, etc.                        | 35       | 48.6%              | 37.1%                                      | 14.3%                 |
| Retail Trade  | 28       | 60.7%              | 32.1%                                      | 7.1%                  |
| Educational Services  | 22       | 45.5%              | 45.5%                                      | 9.1%                  |
| Arts, Entertainment, Recreation, Accommodation, and Food Services | 10       | 60.0%              | 20.0%                                      | 20.0%                 |
| Public Administration   | 5        | 40.0%              | 20.0%                                      | 40.0%                 |

(table continued)

|   |    |       |        |        |
|---|----|-------|--------|--------|
| Finance, Insurance,<br>Real Estate, and<br>Rental and Leasing | 4  | 25.0% | 75.0%  | 0.0%   |
| Agriculture, Forestry,<br>Fishing, and Hunting<br>and Mining  | 2  | 0.0%  | 100.0% | 0.0%   |
| Information   | 1  | 0.0%  | 0.0%   | 100.0% |
| Geographic Divisions  |    |       |        |        |
| Pacific   | 54 | 35.2% | 42.6%  | 22.2%  |
| East North Central  | 37 | 45.9% | 35.1%  | 18.9%  |
| West South Central  | 28 | 46.4% | 50.0%  | 3.6%   |
| South Atlantic  | 28 | 42.9% | 50.0%  | 7.1%   |
| Middle Atlantic   | 24 | 62.5% | 29.2%  | 8.3%   |
| West North Central  | 21 | 52.4% | 38.1%  | 9.5%   |
| Mountain  | 20 | 35.0% | 45.0%  | 20.0%  |
| East South Central  | 14 | 35.7% | 57.1%  | 7.1%   |
| New England   | 14 | 64.3% | 35.7%  | 0.0%   |
| Minority Percentage   |    |       |        |        |
| 0.0 – 19.99%  | 61 | 52.5% | 39.3%  | 8.2%   |
| 20.0 – 39.99%   | 75 | 45.3% | 42.7%  | 12.0%  |
| 40.0 – 59.99%   | 52 | 44.2% | 40.4%  | 15.4%  |
| 60.0 – 79.99%   | 33 | 24.2% | 54.5%  | 21.2%  |
| 80.0 – 100.0%   | 19 | 57.9% | 31.6%  | 10.5%  |

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Of the sample's 240 web sites, the mean frequency of interactive features for a single municipal web site was 14.52 features ( $SD = 4.40$ ). The mode and median both were 14 as well. Web sites within the sample, contained between 3 and 29 interactive features and/or functions. Approximately 75% of the sample used 17 or fewer interactive features and 90.8% used 20 or fewer features. (Table 6 lists the frequencies of all interactive features found, along with their corresponding percentages, within the sample's web sites.)

Among the city classifications, web sites of small cities (46.9%) and large cities (41.4%) most frequently used between 11 and 15 interactive features, while web sites of medium-sized cities most frequently used between 16 and 20 interactive features (45.1%). Web sites of both suburban (45.6%) and central (44.5%) city classifications most frequently used between 11 and 15 interactive features. Of the dominant industry classifications that contained more than 10 cities, "arts, entertainment, recreation, accommodation, and food services" (50.0%), "manufacturing" (42.9%), "health and social services" (42.9%), and "educational services" (40.9%) classifications most frequently used between 11 and 15 interactive features within their web sites. The "professional, scientific, management, administrative and waste management services" (45.7%) classification most frequently used between 16 and 20 interactive features within their web sites. The "retail trade" classification most frequently used between 11 and 15 (35.7%) and 16 and 20 (35.7%) interactive features within their web sites.

Among the geographic division classifications, the Pacific (53.7%), New England (50.0%), Middle Atlantic (50.0%), and East North Central (45.9%) divisions most frequently used between 11 and 15 interactive features within their web sites. Additionally, the West South Central (46.4%), Mountain (45.0%), South Atlantic (42.9%), and West North Central (33.3%) divisions most frequently used between 16 and 20 interactive features within their web sites. The East South Central division most frequently used between 11 and 15 (35.7%) and 16 and 20

Table 6:

Frequencies and Percentages of Interactive Features within the Sample

| Interactive Features                          | <i>f</i>          | <i>P</i> |
|---|-------------------|----------|
|   | ( <i>N</i> = 240) |          |
| Graphics                                      | 234               | 97.5%    |
| Information posting                           | 232               | 96.7%    |
| More than thirty hyperlinks                   | 209               | 87.1%    |
| Enhanced navigational bars                    | 197               | 82.1%    |
| Search help and site map functions            | 192               | 80.0%    |
| City maps available                           | 146               | 60.8%    |
| Phone number                                  | 130               | 54.2%    |
| E-mail hyperlinks available                   | 116               | 48.3%    |
| Application for permit                        | 114               | 47.5%    |
| Request weather information                   | 106               | 44.2%    |
| Request city services                         | 90                | 37.5%    |
| Comment box and feedback features (not Email) | 80                | 33.3%    |
| FAQ   | 75                | 31.3%    |
| Application for business license              | 72                | 30.0%    |
| Pay fines online                              | 69                | 28.8%    |
| Drop box                                      | 69                | 28.8%    |
| Graphic animation                             | 67                | 27.9%    |
| Advertising                                   | 64                | 26.7%    |
| Pay utility bills online                      | 63                | 26.3%    |

(table continued)

|   |    |       |
|---|----|-------|
| Audio-video clips and archived webcasts   | 62 | 25.8% |
| Live television and webcasts              | 55 | 22.9% |
| Access to government records              | 54 | 22.5% |
| E-procurement                             | 49 | 20.4% |
| User web site choices and options         | 47 | 19.6% |
| Pay taxes online                          | 39 | 16.3% |
| Photo slide shows and photo libraries     | 36 | 15.0% |
| Surveys                                   | 33 | 13.8% |
| Program registration                      | 22 | 9.2%  |
| Web cameras                               | 21 | 8.8%  |
| Between twenty and twenty-nine hyperlinks | 20 | 8.3%  |
| Sign-in and log-in feature                | 19 | 7.9%  |
| Pay license or permit online              | 10 | 4.2%  |
| Between ten and nineteen hyperlinks       | 9  | 3.8%  |
| Property registration                     | 8  | 3.3%  |
| Audio clips                               | 5  | 2.1%  |
| Live radio                                | 5  | 2.1%  |
| Live chat                                 | 4  | 1.7%  |
| Web log (blog)                            | 4  | 1.7%  |
| E-card and postcards                      | 4  | 1.7%  |
| Forums                                    | 3  | 1.3%  |
| Guestbook                                 | 2  | 0.8%  |

(table continued)

|  |   |      |
|--|---|------|
| Wallpaper and screensavers to download | 2 | 0.8% |
| Flight updates                         | 2 | 0.8% |
| Less than ten hyperlinks               | 2 | 0.8% |
| Virtual tour                           | 2 | 0.8% |
| Update of sports scores                | 1 | 0.4% |
| Trading cards to download              | 1 | 0.4% |
| Coupons to download                    | 1 | 0.4% |
| E-mail without a hyperlink             | 1 | 0.4% |
| Podcasts                               | 1 | 0.4% |
| Power point presentation               | 1 | 0.4% |
| Background music                       | 0 | 0.0% |
| Live video conferencing                | 0 | 0.0% |
| Live phone conferencing                | 0 | 0.0% |

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(35.7%) interactive features within their web sites. Among the minority population percentage classifications, cities with minority population percentages between 80.0% and 100.0% (57.9%) most frequently used between 6 and 10 interactive features within their web sites. Cities with minority population percentages between 0.0% and 19.99% (44.3%), between 20.0% and 39.99% (41.3%), and between 40.0% and 59.99% (44.2%) most frequently used between 11 and 15 interactive features within their web sites. Cities with minority population percentages between 60.0% and 79.99% most frequently used between 11 and 15 (42.4%) and 16 and 20

(42.4%) interactive features within their web sites. (Table 7 presents the percentages of every overall strategy used within each city classification.)

Table 7:

Means and the Frequency Ranges of Interactive Features Used within Each City Classification

| City Classifications  | <i>N</i> | <i>M</i> | Number of Interactive Features |        |         |         |         |         |
|---|----------|----------|--------------------------------|--------|---------|---------|---------|---------|
|   |          |          | 0 – 5                          | 6 – 10 | 11 – 15 | 16 – 20 | 21 – 25 | 26 – 30 |
| <b>City Size</b>  |          |          |                                |        |         |         |         |         |
| Small   | 160      | 13.44    | 1.9%                           | 22.5%  | 46.9%   | 24.4%   | 3.8%    | 0.6%    |
| Medium  | 51       | 16.63    | 0.0%                           | 7.8%   | 29.4%   | 45.1%   | 11.8%   | 5.9%    |
| Large   | 29       | 16.76    | 0.0%                           | 0.0%   | 41.4%   | 37.9%   | 20.7%   | 0.0%    |
| <b>Spatial Relation</b>   |          |          |                                |        |         |         |         |         |
| Central   | 137      | 15.18    | 1.5%                           | 10.9%  | 40.1%   | 35.8%   | 10.2%   | 1.5%    |
| Suburban  | 103      | 13.63    | 1.0%                           | 24.3%  | 45.6%   | 23.3%   | 3.9%    | 1.9%    |
| <b>Dominant Industry</b>  |          |          |                                |        |         |         |         |         |
| Manufacturing   | 91       | 13.54    | 1.1%                           | 26.4%  | 42.9%   | 20.9%   | 9.9%    | 1.1%    |
| Health/Social Services  | 42       | 14.83    | 0.0%                           | 14.3%  | 42.9%   | 35.7%   | 4.8%    | 2.4%    |
| Professional, Scientific, Management, Administrative, and Waste Management Services | 35       | 16.06    | 0.0%                           | 8.6%   | 34.3%   | 45.7%   | 5.7%    | 5.7%    |
| Retail Trade  | 28       | 15.57    | 3.6%                           | 10.7%  | 35.7%   | 35.7%   | 14.3%   | 0.0%    |
| Educational Services  | 22       | 15.55    | 0.0%                           | 9.1%   | 40.9%   | 40.9%   | 9.1%    | 0.0%    |

(table continued)

|   |    |       |       |       |        |       |       |      |
|---|----|-------|-------|-------|--------|-------|-------|------|
| Arts, Entertainment, Recreation, Accommodation, and Food Services | 10 | 12.90 | 0.0%  | 20.0% | 50.0%  | 20.0% | 10.0% | 0.0% |
| Public Administration   | 5  | 11.60 | 20.0% | 80.0% | 0.0%   | 0.0%  | 0.0%  | 0.0% |
| Finance, Insurance, Real Estate, and Rental and Leasing           | 4  | 15.00 | 0.0%  | 0.0%  | 75.0%  | 25.0% | 0.0%  | 0.0% |
| Agriculture, Forestry, Fishing, and Hunting and Mining            | 2  | 15.50 | 0.0%  | 0.0%  | 50.0%  | 50.0% | 0.0%  | 0.0% |
| Information   | 1  | 11.00 | 0.0%  | 0.0%  | 100.0% | 0.0%  | 0.0%  | 0.0% |
| Geographic Divisions  |    |       |       |       |        |       |       |      |
| Pacific   | 54 | 14.31 | 0.0%  | 13.0% | 53.7%  | 25.9% | 5.6%  | 1.9% |
| East North Central  | 37 | 13.24 | 0.0%  | 32.4% | 45.9%  | 13.5% | 8.1%  | 0.0% |
| West South Central  | 28 | 16.11 | 0.0%  | 14.3% | 25.0%  | 46.4% | 7.1%  | 7.1% |
| South Atlantic  | 28 | 15.79 | 0.0%  | 10.7% | 39.3%  | 42.9% | 7.1%  | 0.0% |
| Middle Atlantic   | 24 | 13.38 | 4.2%  | 20.8% | 50.0%  | 12.5% | 8.3%  | 4.2% |
| West North Central  | 21 | 14.67 | 4.8%  | 19.0% | 28.6%  | 33.3% | 14.3% | 0.0% |
| Mountain  | 20 | 16.50 | 0.0%  | 0.0%  | 40.0%  | 45.0% | 15%   | 0.0% |
| East South Central  | 14 | 12.79 | 0.0%  | 21.4% | 35.7%  | 35.7% | 0.0%  | 0.0% |
| New England   | 14 | 13.57 | 0.0%  | 14.3% | 50.0%  | 35.7% | 0.0%  | 0.0% |
| Minority Percentage   |    |       |       |       |        |       |       |      |
| 0.0 – 19.99%  | 61 | 13.03 | 4.9%  | 26.2% | 44.3%  | 16.4% | 8.2%  | 0.0% |
| 20.0 – 39.99%   | 75 | 14.97 | 0.0%  | 14.7% | 41.3%  | 33.3% | 8.0%  | 2.7% |

(table continued)

|               |    |       |      |       |       |       |      |      |
|---------------|----|-------|------|-------|-------|-------|------|------|
| 40.0 – 59.99% | 52 | 15.58 | 0.0% | 7.7%  | 44.2% | 40.4% | 5.8% | 1.9% |
| 60.0 – 79.99% | 33 | 15.82 | 0.0% | 3.0%  | 42.4% | 42.4% | 9.1% | 3.0% |
| 80.0 – 100.0% | 19 | 12.32 | 0.0% | 42.1% | 36.8% | 15.8% | 5.3% | 0.0% |

### 3.3 Hypothesis Testing

3.3.1 Hypothesis Testing Involving Message Strategies. H<sub>1</sub> stated that cities classified as large will more likely use transformational strategies within their web sites.

A 3 x 3 chi-square analysis revealed that this difference was not significant ( $\chi^2(4, N = 240) = 2.91, p > .05$ ), suggesting that there was no relationship between city size and overall strategy. Additionally, a series of 2 x 3 chi-square tests between ego ( $\chi^2(2, N = 240) = 5.48, p > .05$ ), social ( $\chi^2(2, N = 240) = 1.25, p > .05$ ), and sensory ( $\chi^2(2, N = 240) = 9.82, p = .007$ ) strategies and city size revealed no significant findings to support H<sub>1</sub>. While the findings revealed a significant relationship between sensory strategy and city size, a further post hoc analysis revealed no significant relationship (standardized residuals less than 2.0) originating from large cities.

H<sub>2</sub> stated that cities classified as small will more likely use informational strategies within their web sites.

A 3 x 3 chi-square analysis found no significant relationship between overall strategy and city size,  $\chi^2(4, N = 240) = 2.91, p > .05$ . In addition, a series of 2 x 3 chi-square tests between rational ( $\chi^2(2, N = 240) = 4.17, p > .05$ ), acute need ( $\chi^2(2, N = 240) = 10.98, p = .004$  (50.0% of the cells have an expected count less than 5), and routine ( $\chi^2(2, N = 240) = 3.76, p > .05$ ) message strategies and city size showed no significant relationships that supported H<sub>2</sub> as well.

H<sub>3</sub> predicted cities that are classified as manufacturing-dominant will more likely use informational strategies within their web sites.

A 3 x 10 chi-square analysis indicated dominant industry and overall strategy were not related,  $\chi^2(18, N = 240) = 23.16, p > .05$ . Additionally, a series of 2 x 10 chi-square analyses revealed no relationship between dominant industry and the three informational strategies: (a) rational ( $\chi^2(9, N = 240) = 4.12, p > .05$ ); (b) acute need ( $\chi^2(9, N = 240) = 13.61, p > .05$ ); and (c) routine message strategies ( $\chi^2(9, N = 240) = 4.10, p > .05$ ). Thus, H<sub>3</sub> was not supported.

H<sub>4</sub> predicted cities that are classified as education services-dominant will more likely use transformational strategies within their web sites.

A 3 x 10 chi-square analysis revealed that dominant industry and overall message strategy were not related ( $\chi^2(18, N = 240) = 23.16, p > .05$ ). Three 2 x 10 chi-square tests also revealed no relationship between dominant industry and the three transformational message strategies: (a) ego ( $\chi^2(9, N = 240) = 10.16, p > .05$ ); (b) social ( $\chi^2(9, N = 240) = 3.76, p > .05$ ); and (c) sensory ( $\chi^2(9, N = 240) = 6.91, p > .05$ ). Thus, H<sub>4</sub> was not supported.

3.3.2 Hypothesis Testing Involving Interactivity. H<sub>5</sub> suggested that cities classified as large will have more interactive web sites than cities classified as small.

Results of a one-way analysis of variance found that web sites of large cities ( $\underline{M} = 16.76$ ) used significantly more interactive features than web sites of small cities ( $\underline{M} = 13.44$ ) ( $p = .000$ ), ( $F(2, 237) = 16.28, p = .000$ ). Thus, H<sub>5</sub> was supported.

Additionally, ANOVAs revealed significant differences between city size and the use of interactive features within two of its categories: “Two-way communication and service/financial transactions” ( $F(2, 237) = 17.84, p = .000$ ) and “multi-media capabilities” ( $F(2, 237) = 9.59, p = .000$ ) categories. A post hoc Tukey analysis revealed that web sites of large cities used significantly more interactive features containing “two-way communication and/or

service/financial transactions” ( $\underline{M} = 7.07$ ) than web sites of small cities ( $\underline{M} = 4.89$ ) ( $p = 0.001$ ). Web sites of large cities also used significantly more multi-media interactive features ( $\underline{M} = 1.62$ ) than web sites of small cities ( $\underline{M} = 0.85$ ) ( $p = 0.002$ ).

Among the 45 individual categories of interactive features analyzed from the coding sheet, a series of 2 x 3 chi-square analyses revealed significant relationships between city size and 15 of the interactive features. Further post hoc analyses of the standardized residuals greater than 2.0 revealed that eight interactive features were more likely to exist within web sites of large cities rather than web sites of small cities. A listing of these eight interactive features in support of H<sub>5</sub> that were more likely to exist within web sites of large cities rather than web sites of small cities along with their Pearson Chi-Square test results, their frequencies and their percentages within their city size categories, are provided in Table 8.

Additionally, a Pearson correlation test to measure the relationship between city size and the total number of interactive features within each web site indicated a significant relationship ( $r = -.32, p = .000$ ). The test suggested that larger cities used more interactive features, which further supported H<sub>5</sub>. Significant relationships also existed between city size and “two-way communication and service/financial transactions” ( $r = -.32, p = .000$ ) and city size and “multi-media capabilities” ( $r = -.27, p = .000$ ). The tests suggested that larger cities used more two-way communication and service/financial transactions” and “multi-media capabilities” than smaller cities. (Table 9 provides the Pearson correlation test results.)

### **3.4 Research Questions**

3.4.1 Research Questions Involving Message Strategy. RQ<sub>1</sub> asked what message strategies will medium-sized cities most likely use within their web sites?

A 3 x 3 Chi-Square analysis revealed no significant relationship between overall strategy and city size, ( $\chi^2(4, N = 240) = 2.91, p > .05$ ). However, 2 x 3 chi square tests revealed

Table 8:

List of Interactive Features that Supported H<sub>5</sub>

| Interactive Features     | $\chi^2$ | <i>P</i> | <i>f</i>                  |       |       |       |
|--------------------------|----------|----------|---------------------------|-------|-------|-------|
|                          |          |          | <i>P</i> Within City Size |       |       |       |
|                          |          |          | ( <i>N</i> = 240)         |       |       |       |
|                          |          |          | Large                     | Small | Large | Small |
| User choice              | 40.05    | .000     | 12                        | 13    | 41.4% | 8.1%  |
| Pay fines online         | 37.61    | .000     | 21                        | 29    | 72.4% | 18.1% |
| Advertising              | 30.28    | .000     | 13                        | 25    | 44.8% | 15.6% |
| Pay taxes online         | 27.84    | .000     | 14                        | 15    | 48.3% | 9.4%  |
| Pay utility bills online | 21.79    | .000     | 13                        | 27    | 44.8% | 16.9% |
| Audio-video clips        | 20.13    | .000     | 13                        | 27    | 44.8% | 16.9% |
| City services            | 13.98    | .001     | 17                        | 47    | 58.6% | 29.4% |
| Drop box                 | 11.59    | .003     | 15                        | 36    | 51.7% | 22.5% |

significant relationships between the uses of sensory strategies and different city sizes ( $\chi^2(2, N = 240) = 9.82, p = .007$ ). A further post hoc analysis of the standardized residuals greater than 1.7 showed the significance originating from the web sites of middle-sized cities (68.6%) being more likely to use sensory strategies than web sites of large (58.6%) and small (44.4%) cities.

RQ<sub>2</sub> asked what message strategies will central/regional cities most likely use within their web sites?

A 2 x 3 chi-square analysis of the overall message strategy and spatial relationship revealed no significant relationship ( $\chi^2(2, N = 240) = 0.03, p > .05$ ). Additionally, a series of 2 x 2 chi-square analyses revealed no significant relationship between spatial relations and any of the

Table 9:

Pearson Correlation Test Results of Interactive Features and City Size Classifications

|   | City Size               | Interactive Features (Total) | Two-way Communication; Service/Financial Transactions | Multi-Media Features    |
|---|-------------------------|------------------------------|---|-------------------------|
| City Size   | 1.00                    | -.32<br><i>p</i> = .000      | -.32<br><i>p</i> = .000                               | -.27<br><i>p</i> = .000 |
| Interactive Features (Total)                          | -.32<br><i>p</i> = .000 | 1.00                         | .93<br><i>p</i> = .000                                | .61<br><i>p</i> = .000  |
| Two-way communication; service/financial transactions | -.32<br><i>p</i> = .000 | .93<br><i>p</i> = .000       | 1.00  | .41<br><i>p</i> = .000  |
| Multi-Media Features                                  | -.27<br><i>p</i> = .000 | .61<br><i>p</i> = .000       | .41<br><i>p</i> = .000                                | 1.00                    |

six message strategies within web sites of central/regional cities.

RQ<sub>3</sub> asked what message strategies will suburban/edge cities most likely use within their web sites?

A 2 x 3 chi-square analysis of the overall message strategy and spatial relationship revealed no significant relationship ( $\chi^2(2, N = 240) = 0.03, p > .05$ ). Additionally, a series of 2 x 2 chi-square analyses revealed no significant relationships between spatial relations and any of the six message strategies within web sites of suburban/edge cities.

RQ<sub>4</sub> asked what message strategies will cities in each geographic region most likely use within their web sites?

An initial 3 x 9 chi-square analysis revealed no significant relationship between geographic region and the overall message strategy, ( $\chi^2 (16, N = 240) = 18.98, p > .05$ ). Additionally, none of the initial chi-square tests indicated any relationships between the six message strategies and geographic regions.

With the South Atlantic, East South Central, West South Central, Mountain, and Pacific divisions grouped together (West and South Regions) and New England, Middle Atlantic, East North Central, and West North Central divisions grouped together (Midwest and Northeast Regions), a chi-square test revealed a significant relationship between the grouped geographic regions and their uses of sensory strategies within their web sites ( $\chi^2 (1, N = 240) = 7.23, p = .007$ ). A further post hoc analysis of the standardized residuals greater than 1.5 showed the significance originating from municipal web sites of the South/West grouped region (58.3%) being more likely to use sensory strategies than municipal web sites of the Midwest/Northeast grouped region (40.6%).

RQ<sub>5</sub> asked if there are any relationships between city minority population percentages and message strategies used within municipal web sites?

Based on minority population percentages, the researcher grouped cities into five classifications with sequential intervals of 20% each. A chi-square analysis revealed that grouped minority percentage and overall strategy had no significant relationship ( $\chi^2 (8, N = 240) = 9.68, p > .05$ ).

Results of an ANOVA found that municipal web sites with minority population percentages between 0.0% and 19.99% used significantly less message strategies ( $\underline{M} = 1.74$ ) than cities with minority percentages between 20.0% and 39.99% ( $\underline{M} = 2.20, p = .043$ ), percentages between 40.0% and 59.99% ( $\underline{M} = 2.25, p = .039$ ), and percentages between 60.0% and 79.99% ( $\underline{M} = 2.45, p = .006$ ),  $F (4, 235) = 3.51, p = .005$ .

RQ<sub>6</sub> asked does city size classification likely affect the number of message strategies used within municipal web sites?

Results of a one-way analysis of variance revealed that web sites of medium-sized cities used significantly more message strategies ( $\underline{M} = 2.61$ ) than web sites of small cities ( $\underline{M} = 1.96$ ,  $p = .000$ ), ( $F(2, 237) = 8.98$ ,  $p = .000$ ).

RQ<sub>7</sub> asked does geographic region classification likely affect the number of message strategies used within municipal web sites?

Results of a one-way analysis of variance revealed no significant difference between geographic classification and the number of message strategies used within a web site ( $F(8, 231) = 0.95$ ,  $p > .05$ ). Results of a one-way analysis of variance, however, revealed that municipal web sites of the South and West adjusted geographical region used significantly more message strategies ( $\underline{M} = 2.24$ ) than municipal web sites of the Northeast and Midwest adjusted geographical region ( $\underline{M} = 1.93$ ),  $F(1, 238) = 6.14$ ,  $p = .014$ .

3.4.2 Research Questions Involving Interactivity. RQ<sub>8</sub> asked what spatial relationship classification will most likely contain cities with more interactive web sites?

Results of a one-way analysis of variance found that web sites of central/regional cities used significantly more interactive features ( $\underline{M} = 15.18$ ) than web sites of suburban/edge cities ( $\underline{M} = 13.63$ ),  $F(1, 238) = 7.50$ ,  $p = .007$ .

Among the 45 individual categories of interactive features analyzed from the coding sheet, 2 x 2 chi-square analyses revealed a significant relationship between city spatial relationship and the presence of advertising ( $\chi^2(1, N = 240) = 11.44$ ,  $p = .001$ ) and features to pay fines ( $\chi^2(1, N = 240) = 11.20$ ,  $p = .001$ ) and to pay taxes online ( $\chi^2(1, N = 240) = 17.22$ ,  $p = .000$ ).

Further post hoc analyses of the standardized residuals greater than 2.0 indicated that advertising (75.0%), features to pay fines online (73.9%), and features to pay taxes online (87.2%) were more likely to exist within web sites of central/regional cities than web sites of suburban/edge cities (25.0%, 26.1%, 12.8% respectively).

RQ<sub>9</sub> asked what dominant industry classifications will most likely contain cities with more interactive municipal web sites?

Results of a one-way analysis of variance found that the total use of interactive features within web sites and the dominant industry variable lacked a significant relationship ( $F(9, 230) = 1.85, p > .05$ , although, the differences between the two variables approached significance ( $p = .06$ ). For a listing of all the mean scores, refer to Table 10.

RQ<sub>10</sub> asked what geographic region classifications will most likely contain cities with more interactive municipal web sites?

Results of a one-way analysis of variance found a significant relationship between the total uses of interactive features within web sites of the nine geographic divisions ( $F(8, 231) = 2.31, p = .021$ ). A post hoc Tukey analysis, however, revealed no significant relationship between the nine geographic divisions and the total uses of interactive features within their municipal web sites. On the other hand, after the nine geographic divisions were grouped into two geographic region categories, results of a one-way analysis of variance revealed that municipal web sites of the South and West grouped geographical region used significantly more interactive features ( $\underline{M} = 15.10$ ) than municipal web sites of the Northeast and Midwest grouped geographical region ( $\underline{M} = 13.64$ ), ( $F(1, 238) = 6.56, p = .011$ ).

RQ<sub>11</sub> asked if there were any relationships between city minority percentages and interactive features within municipal web sites?

Results of a one-way analysis of variance revealed that cities with minority population

Table 10:

Mean Scores of Interactive Features within the Dominant Industry Classifications

| Dominant Industry Classification  | <i>N</i>          | <i>M</i>                              |
|---|-------------------|---------------------------------------|
|   | ( <i>N</i> = 240) | ( <i>M</i> = 14.52; <i>SD</i> = 4.40) |
| Professional, Scientific, Management, Administrative, and Waste Management Services | 35                | 16.06                                 |
| Retail Trade  | 28                | 15.57                                 |
| Educational Services  | 22                | 15.55                                 |
| Agriculture, Forestry, Fishing, and Hunting and Mining                              | 2                 | 15.50                                 |
| Finance, Insurance, Real Estate, and Rental and Leasing                             | 4                 | 15.00                                 |
| Health/Social Services  | 42                | 14.83                                 |
| Manufacturing   | 91                | 13.54                                 |
| Arts, Entertainment, Recreation, Accommodation, and Food Services                   | 10                | 12.90                                 |
| Public Administration   | 5                 | 11.60                                 |
| Information   | 1                 | 11.00                                 |

percentages between 40.0% and 59.99% used significantly more interactive features ( $\underline{M} = 15.58$ ) within their web sites than cities with minority percentage between 0.0% and 19.99% ( $\underline{M} = 13.03, p = .015$ ) and cities with minority percentages between 80.0% and 100.0% ( $\underline{M} = 12.32, p = .038$ ),  $F(4, 235) = 4.90, p = .001$ . Additionally, cities with minority percentages between 60.0% and 79.99% significantly used more interactive features ( $\underline{M} = 15.82$ ) within their web sites than cities with minority percentages between 0.0% and 19.99% ( $\underline{M} = 13.03, p = .023$ ) and cities with minority percentages between 80.0% and 100.0% ( $\underline{M} = 12.32, p = .038$ ).

## CHAPTER 4 DISCUSSION

### 4.1 Conclusions

This study analyzed three different elements associated with municipal web sites: the physical framework and typology of cities, advertising and communication message strategies, and structural web site interactivity. This study provided the first attempt to explore the relationship between advertising message strategy and city typology, while the study updated previous outdated attempts to explore the relationship between interactivity and city typology. Additionally, this study's analysis of municipal government web sites was the first attempt to successfully apply Taylor's model to advertising and public relations communications from web sites of non-corporate entities. The study's results indicated that marginal relationships existed between municipal web site's message strategies and city typologies, whereas the relationships between city typologies and the uses of interactive features within municipal web sites were more prominent.

Overall, municipal web sites relied more on informational message strategies than transformational message strategies regardless of the city category. Routine strategies, specifically, were the most frequently used message strategies within nearly all classifications. Furthermore, municipal web sites most frequently used "more informational" overall strategies than "equally informational and transformational" and "more transformational" overall strategies. Frequent uses of informational strategies within municipal web sites reflected the "information-driven nature of the Web" (Hwang et al., 2003, Summary, ¶ 2). Whether a municipal advertiser identifies his or her city as a market, commodity, or enterprise, a city is undoubtedly a complex entity (Corsico, 1994). Thus, frequent uses of informational overall strategies and routine message strategies also likely exist within municipal web sites because of their need to communicate wide ranges of information to large and diverse publics. As a result,

municipal web administrators likely use the Web for the dissemination of important information and less engaging advertisement strategies as defined by Taylor's (1999) model. If strategically planned, frequent uses of routine strategies likely indicate that Web administrators emphasized the importance of developing name recognition and identification of new visitors and interested businesses, while reminding previous visitors to return to their cities and reinforcing attitudes of current residents and businesses.

The presence of more informational message strategies than transformational message strategies found within this study reflected the findings of previous studies (Hwang et al., 2003; Kim et al., 2005). Similar to other previous studies, routine strategies were the most frequently used message strategies. Compared to previous studies, however, rational, acute need, and ego strategies were not used as frequently, and sensory strategies were used much more frequently than in previous studies. Again, municipal Web administrators likely focused more on essential information dissemination and branding than on engaging advertisements and more involving message strategies according to Taylor's model. Potentially, Web administrators lacked personnel resources for strategic advertising direction, which justifies lower frequencies of rational, social, and ego message strategies within municipal web sites compared to corporate and business web sites.

Understandably, cities used acute need strategies within their web sites much less frequently than corporate web sites because city advertisers and Web administrators likely anticipated target publics, especially relocating businesses and residents, to spend lengthy amounts of time deliberating over their investment decisions. Thus, uses of acute need message strategies would be less appropriate for municipal web sites compared to business and corporate web sites that strive to sell tangible products that require less consumer involvement and deliberation time. The coders found that municipalities primarily used acute need strategies to

inform their publics about urgent information or situations such as city flood warnings or hurricane preparation information.

While previous studies showed corporate web sites using more acute need strategies than municipal web sites (Hwang et al., 2003; Kim et al., 2005), the low occurrences of rational, ego, and social strategies within municipal web sites could arguably be a strategic problem. This study found that web sites of cities used routine and sensory strategies most frequently. Both routine and sensory strategies are low-involvement strategies within Taylor's (1999) model that marginally engage municipal publics. Taylor stated that routine strategies should advertise products that consumers purchase habitually such as grocery items and personal care products, while sensory strategies should advertise products that provide temporary pleasure to any of the five senses such as music albums and fragrances. With the size and complexity of cities and their operations, city advertisers should have seemingly used more message strategies that required their publics to be more involved and engaged with their message encoding and decision-making.

Hwang et al. (2003) found that corporate web sites, especially from low-revenue companies, frequently used routine strategies like corporate brand logos to achieve short-term, tactical and sales goals. Comparing their findings and assumptions to this study, large cities that have economical advantages over medium and small cities (Clark, 2000) and already established brand and name recognition specifically should have used more rational, ego, and social strategies. According to Taylor's (1999) model, rational, ego, and social message strategies engage the Web user more than both sensory and routine message strategies. Specifically, the use of rational strategies, based on Taylor's study, would be the most logical message strategy used because of the complex nature of municipalities. The use of rational strategies would provide more concrete and factual information about the city. Factual information could be

useful for target publics interested in relocating their businesses or residences. Additionally, communities of residents and businesses compose the framework of cities. One might expect to find more uses of social message strategies because of the community environment associated with cities. Thus, large cities with greater revenues and resources should attempt to use more rational message strategies within their web sites, along with ego and social message strategies.

Routine and sensory message strategies within municipal web sites were not necessarily inappropriate strategies. Uses of routine and sensory strategies were likely suitable for attracting new visitors, reminding previous visitors to return, and reinforcing attitudes of current residents and businesses. As mentioned, routine strategies were more appropriate for developing name recognition. On the other hand, many of the sample's cities, specifically the small and large cities, lacked message strategies to target potential residents and businesses. Based on Taylor's (1999) model and message strategy theory, web sites of large and small cities needed more rational strategies that provided information about their competitive advantages to attract future residents and businesses. Routine and sensory message strategies, alone, likely would not persuade individuals and businesses to relocate. Moreover, web sites of small and large cities needed more ego and social strategies to engage the publics' emotions that appeal to vanity and group identification. The uses of routine and sensory message strategies, essentially, were positive, but overall increases of strategies were necessary, which included increases in rational, ego, and social message strategies.

Hwang et al. (2003) also found that high-revenue companies were more likely to use transformational message strategies than low-revenue companies, while low-revenue companies were more likely to use informational message strategies than high-revenue companies, which contradicted the findings of this study. This study found large cities more frequently used informational message strategies and "more informational" overall strategies than

transformational strategies. Large cities were less likely to use ego strategies than both small and medium-sized cities. Furthermore, medium-sized cities were more likely to use sensory strategies, which are transformational message strategies, than small and large cities. Small cities were also the least likely to use sensory strategies within their web sites, while Hwang et al. found low-revenue companies more frequently used sensory strategies. Small cities typically used their web sites to communicate basic information and were less likely to use vivid images and descriptive statements, which likely resulted in their lower frequency of sensory strategies. This behavior likely reflected a lack of web strategies, experience by their web administrators, or available resources.

While some findings from this study reinforced findings from previous studies (Hwang et al., 2003; Kim et al., 2005), this study undeniably illustrated that web sites of cities used advertising message strategies differently than web sites of corporations based on company and city sizes. Corporations, especially high-revenue companies, likely have more available resources than municipalities, which potentially influence the inconsistencies between their advertising strategies. Specifically, corporations likely had more advertising dollars to spend and more skilled advertisers and communications experts to develop and maintain their web sites than municipalities. Strategic and tactical factors may have influenced the development of advertising strategies of municipal web sites as well.

Hwang et al. (2003) suggested that web sites of low-revenue companies focused more on short-term tactics and sales goals for survival through uses of brand or corporate logos, rather than long-term, strategic successes through uses of high-involvement strategies from Taylor's (1999) model. Perhaps municipalities, especially, smaller cities with fewer resources, focused more on short-term, tactical successes rather than long-term strategic development. Frequently the sample's small cities marginally used message strategies such as pictures of city skylines and

city logos, crests, and slogans to create brand awareness but often lacked high-involvement strategies such as ego and rational. In fact, on many occasions, web sites of small cities contained only a crest and/or a slogan along with minimal text and various links to assist with their audiences' needs. Small cities, as a result, used the fewest message strategies, and often used the Web for marginal advertising purposes. Developers of web sites for small cities should use the Web for further advertising and public relations purposes because, as Hwang et al. (2003) suggested, the Web provides additional opportunities to offset economic and strategic disadvantages.

The sample's large cities similarly had several pictures and used many links within their web sites to assist with inquiries and to provide available services and functions to their numerous publics. Consequently, web sites of large cities often lacked large quantities and varieties of text and message strategies, which included high-involvement strategies from Taylor's (1999) model. On average, however, the coders found web sites of large cities used more message strategies than web sites of small cities. Large cities likely had more resources and capabilities than small cities (Clark, 2000), which resulted in more message strategies found within their web sites compared to web sites of small cities. With much higher populations than medium and small cities, large cities most likely focused their web sites to assist the demands and inquiries of their numerous stakeholders and publics as well. Thus, large cities likely used their web sites as public relations tools, rather than media to communicate and advertise competitive advantages.

Surprisingly, this study found that more medium-sized cities used "equally informational and transformational" overall strategies unlike the other two city sizes that more frequently used "more informational" overall strategies within their web sites. This study also found that medium-sized cities were more likely than small and large cities to use sensory strategies within

their web sites, which likely influenced their overall strategies. As a result, medium-sized cities were more likely to use the most message strategies within their web sites. Medium-sized cities had fewer publics to address than large cities and more resources available than small cities. Perhaps, medium-sized cities had more space and time to address their fewer stakeholders and publics and enough resources to strategically develop more appropriate advertising strategies. Again, small and large cities should take advantage of the unlimited time and space to use more message strategies. Perhaps large cities should use more drop boxes and enhanced navigation bars to eliminate clutter so that more empty space exists for additional message strategies. Small cities should follow Taylor's (1999) wheel as a strategic model, and use their limited resources to emphasize more uses of rational message strategies within their web sites because of the complexities involved with cities.

Additionally, cities within the Northeast and Midwest Regions were less likely than the South and West Regions to use sensory strategies and more likely to use "more informational" overall strategies within their web sites. Perhaps, this discovery reflects the findings involving city size. Interestingly, the South and West Regions contain a much greater percentage of large and medium-sized cities than the Northeast and Midwest Regions. Medium-sized cities, as already stated, were more likely to use sensory strategies.

The findings also suggested that municipalities with racially diverse populations were likely to use more message strategies. Cities with Caucasian populations greater than 80.0% had web sites that were likely to contain fewer message strategies than cities with Caucasian populations between 20.0% and 79.99%. Perhaps municipalities used more strategies within their web sites to communicate with more diverse audiences. Racial diversity potentially influenced the findings involved with city size and message strategies as well. Larger cities typically contained more diverse racial populations.

Because the Internet is free of time and space constraints (Hwang et al., 2003), it allows web sites to use several message strategies at once. Additionally, the Web has the capability to influence selling and engage the public (McMillan et al., 2003). This study, however, found that the mean for different strategies used within a single web site was much lower than the mean scores of message strategies used within corporate web sites in 2001 (Hwang et al), corporate television commercials during the 2003 Super Bowl (Kim et al, 2005), and corporate web sites of the same companies during the 2003 Super Bowl. Furthermore, previous studies illustrated that corporate web sites more suitably used higher numbers of more engaging message strategies than municipal web sites, which indicated that corporations sought more involvement from their publics (Hwang et al., 2003; Kim et al., 2005). Thus, municipal advertisers seemingly exploited the unlimited time and space advantages of the Web less than corporate advertisers, while corporate web sites were more likely to influence selling and engage their publics than municipal web sites.

To develop and maintain an influential and engaging web site more like corporate sites, municipalities must use more overt advertising strategies. A web site with too much information can confuse a Web user, but not enough information or an insufficient use of messages can be worse. Thus web sites of municipalities should take advantage of the unlimited time and space of the Web and increase the number of engaging message strategies especially for their home pages.

The results also show that municipal web sites overwhelmingly used more “equally informational and transformational” overall strategies than corporate web sites (Hwang et al., 2003). While, municipal web sites used more routine and sensory strategies than corporate web sites, corporations used more rational, acute need, ego, and social message strategies within their web sites. Perhaps frequent uses of routine and sensory strategies within municipal web sites

influenced the coders to frequently score web sites' overall strategies as "equally informational and transformational." As already stated, routine and sensory strategies required the lowest level of involvement among all message strategies within Taylor's (1999) model. In many cases, the coders acknowledged the presence of routine and sensory strategies, but the sample's web sites failed to effectively involve or engage the coders enough for the web site to be "more informational" or "more transformational." To ensure that overall messages are distinguishable, municipalities need to employ more high-involvement strategies within their web sites especially if their sites continue to use low numbers of strategies.

Many city web sites, additionally, provide portals on their home pages to direct their different publics, such as businesses, visitors, residents, and even employees, to separate areas of their web sites to directly address their specific needs and concerns. Areas of municipal web sites that target specified publics undoubtedly need to incorporate specific goals and message strategies necessary to effectively communicate with these publics.

While municipal web sites should strategically increase their uses of high-level strategies to provide more engaging messages, they should also ensure that their web sites actively communicate and advertise their goals and competitive advantages. For example, cities that heavily rely on their tourism industries should directly engage potential visitors and tourists with messages communicating their advantages related to tourism. As already illustrated, many cities have defining characteristics and qualities that distinguish them from competing cities (Paddison, 1993). Strategic uses of messages to communicate goals and competitive advantages would likely leverage cities over competing cities with insufficient message strategies.

The second component to this study was the role of interactivity within municipal web sites. The researcher successfully found relationships between specific interactive features of web sites and city size. Web sites of large cities were more likely to have user choice features,

features to pay fines, taxes, and utility bills online, advertising for external companies or entities, online city services, drop boxes, and audio-video options than medium and small cities. Web sites of medium-sized cities were more likely to have business license and permit applications and e-procurement features than large and small cities. Web sites of small cities were more likely to have phone numbers available and hyperlinked e-mail addresses than large and medium cities.

With more individual interactive features existing within their sites, web sites of larger cities appeared to be more interactive. Furthermore, web sites of large and medium cities used significantly more interactive features within the “two-way communication and/or service/financial transactions” and multimedia categories than small cities. Web sites of large and medium-sized cities seemingly provided features that were more interactive to allow users to execute transactions, complete tasks, and ease navigation. Whereas, small cities relied more on features that were less interactive such as phone numbers and e-mail hyperlinks. E-mail is a form of two-way communication but is less instantaneous. Phone numbers only provide users with contact information that can be used through telephone access.

With more audiences to target, large and medium cities likely favored the uses of features that were more interactive to efficiently address more needs and inquiries. Phone numbers and e-mail hyperlinks would promote more direct and personal communication, which would be more inefficient for larger cities. Smaller cities with fewer publics are more adept to handle personalized, but timely, direct communication because they likely have fewer questions and inquiries to address than larger cities.

Moreover, the coders found that small cities contained significantly less categories of interactive features than medium and large cities. Perhaps, larger cities needed more features to

address the needs of their larger populations. Additionally, larger cities likely had more financial and human resources than smaller cities to maintain and support more interactive features.

The study also revealed that web sites of central/regional cities used significantly more interactive features than web sites of suburban/edge cities. The same factors that influenced the uses of interactive features within web sites of various city sizes likely influenced the uses of interactive features within web sites of various spatial relations. All large cities along with the majority of medium-sized cities were classified as central/regional cities. On the other hand, the majority of small cities were classified as suburban/edge cities. Many central/regional cities also contained suburban/edge cities within their metropolitan area. Thus, central/regional cities likely had more publics, which included those within nearby cities, to address with their web sites. As a result, central/regional cities likely used more interactive features to address needs and inquiries than suburban/edge cities.

Interestingly, cities with more racial diversity appeared to use more interactive features within their web sites, which reinforced an earlier finding that web design and minority population shared a relationship (Ho, 2002). The researcher found cities with Caucasian populations between 20.0% and 59.99% used more interactive features within their web sites than cities with Caucasian populations between 0.0% and 19.99% and 80.0% and 100.0%. Perhaps various races demand different interactive features. Thus, more racially diverse cities would employ more interactive features within their web sites. For example, many cities in the South and West Regions were racially diverse with large Hispanic and Latino populations in areas of these regions. The South and West Regions were also more likely to have user choice options within their web sites. One of the most frequently found user choice options was a language option for the web site's text. Thus, high levels of Hispanic and Latino populations potentially could influence the existence of user options.

The analysis also provided a list of all features found within municipal web sites and their frequencies. For the entire sample, the coders found available graphics and pictures, information postings, 30 or more hyperlinks, enhanced navigation bars, search/help and site map functions, available city maps, and phone number listings within at least half of the municipal web sites. The frequencies of interactive features illustrated the transformation of interactivity within municipal web sites over the last ten years. For example, compared to a previous study, the presence of contact information, such as phone numbers and e-mail addresses, within web sites decreased (Stowers, 1999). Many cities likely replaced e-mail addresses and telephone numbers with features that are more interactive and more efficiently address their publics' needs and inquiries.

The researcher also found several increases in interactive features within the “two-way communication and/or service/financial transactions” and multimedia categories from previous studies. Search and help functions, city service requests, online renewal or application forms for city permits, and online payments of utility bills, fines, and taxes were examples of interactive features that experienced significant increases from previous studies (Moon, 2002; Stowers, 1999). Meanwhile, some interactive features, such as property registration features, forums, chat rooms, conferencing features, and feedback features to make comments, have remained fairly similar over the last ten years. The findings seemingly revealed that real-time communication interactive features have not progressed as much as two-way communication interactive features that involve transactions and task completions. Finally, several interactive features, such as podcasts and web blogs (blogs), existed scarcely within current municipal web sites but were nonexistent within the Web ten years ago.

Cities undoubtedly have increased their uses of interactive features over the last 10 years. More specifically, cities seemingly increased their uses of interactive features within the “two-

way communication and/or service/financial transactions” category that allowed for increases in online payment and request functions among others. These transformations were appropriate adjustments to municipal web sites because they provided users more control over Web navigation, which further engages and retains users to their sites (McMillan & Hwang, 2002). Furthermore, web users tend to process information more efficiently when web sites are more interactive (Sicilia, Ruiz, & Munuera, 2005). Effective uses of interactive features should thus compliment municipal web sites uses of message strategies. Municipal web sites should continue to strategically increase their uses of interactive features and further adopt real-time two-way communication elements to establish instantaneous communication. On the other hand, some municipal web sites need to limit their uses of hyperlinks. Some cities had too many hyperlinks on their home pages. Previous studies already suggested that interactivity has an upper limit beyond which interactivity negatively influences users (Sundar & Kim, 2005). As a result, municipal web sites should limit and even, in some cases, decrease their uses of hyperlinks.

#### **4.2 Limitations**

The study contained several limitations. The first and possibly greatest limitation was the abstract nature of advertising message strategies defined by Taylor’s Model. Each web site’s message strategy was subject to coder bias and stereotype. The coders participated in three pre-tests and multiple coding sessions to train the coders and eliminate as much bias and confusion. The author made several adjustments to the coding sheet as a result to improve reliability. During the analysis of the sample’s intercoder reliability section, the presence of changing web sites became an issue. Some pictures within municipal web sites changed upon every visit. The author had to check for blatant errors to ensure intercoder reliability after the two coders completed their 25 identical city sites.

One limitation concerned the use of the created scale for measuring level of interactivity. This was an experimental scale of measurement, and it failed to establish a high level of reliability. In addition, the scale's five subcategories showed poor reliability. As a result, any findings that used the "interactive feature total" may be questionable. This difficult attempt to create an interactivity index illustrated the inability for researchers in the field of mass media to successfully quantify and standardize interactivity. On the other hand, the scale allowed the researcher to partake in, at least, exploratory analysis. Moreover, the findings from this research were descriptive. Thus the findings cannot be applied to the entire population of municipal web sites.

Another potential limitation was the method used to classify a city. As seen during the literature research phase, there were numerous ways to measure and classify cities. This study's method used information drawn from the 2000 Census, which was just one possible way. Each classification change could result in different findings.

The sample's cities may not be representative of the entire population of cities. There are thousands of cities, and it would take a large amount of time to analyze each. Another limitation to the makeup of the sample is the uneven distribution of cities based on their populations. Only 29 cities had populations large enough to exist within the sample's large classification, whereas, 160 small cities existed. While this imbalance affects the study's statistics, this sample still reflects the realistic makeup of America's system of urban centers. When analyzing cities in the United States, there are many more cities with smaller populations than cities with larger populations.

### **4.3 Future Research**

Research within advertising message strategy theory and interactivity has many theoretical gaps available for researchers to fill. Researchers could attempt to analyze

advertising message strategies of municipal advertising within other media and between media. In the future, surveys could even identify users' perceptions of advertising message strategies. An analysis of creative strategies used within municipal web sites would also advance advertising strategy theory and the improvement of municipal web sites. Similar message strategy analyses could also examine auxiliary sites such as tourism web sites.

Future studies could analyze interactivity of municipal web sites from the perceptual approach with the completion of this study's analysis of structural interactivity. Researchers could analyze Web users' perceptions after visiting municipal sites. Measuring the perceptual characteristics of municipal web pages would likely add another dimension to those found within this study.

A similar study of state government web sites would also be interesting for comparison. In a few years, the execution of this same study would also likely yield different results. Thus, a longitudinal study may provide interesting and useful research. Cities continually engage in new technologies. Wi-Fi, the establishment of local wireless broadband networks within a community or area, is one new innovation (Flint, 2005). It is likely that more mayors and government officials will use web logs, and cities will broadcast important meetings or programs through podcasts.

Future research could also be channeled to the establishment of a standard tool to measure online interactivity. Perhaps several scales could even be developed to measure the various types of interactive features. This study could have benefited from a standardized and operational measuring instrument. One final idea for future research would be to explore the web site from the perspective of the cities' publics. This study analyzed municipal web sites under the assumption that their target publics referred to them for information. Thus, future research must explore how their publics respond, use, and interact with municipal web sites.

This information would alter the standards and practices for municipal web design. Many web sites become clustered with interactive features, pictures, articles and news releases. The public would benefit more from the web site if the city knew exactly what the public desires.

This study provided an empirical analysis of advertising message strategies and interactive features used within a variety of government web sites. The research illustrated that many combinations of typologies and categories exist within American cities. Of the many combinations and typologies, this study focused on relationships between message strategies and interactive features used within municipal web sites and five basic city category types. The findings of this study will provide researchers and professionals in advertising, mass media, information systems, and public administration with descriptions of existing municipal web sites along with additional knowledge covering new areas of message strategy and interactivity research.

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APPENDIX A: DIAGRAMS OF MODELS APPLIED TO TAYLOR'S MODEL

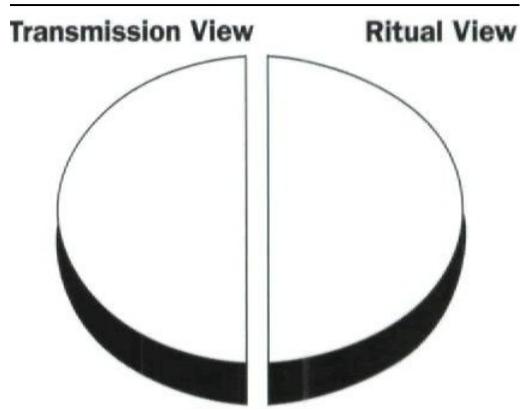


Fig. 1 First Subdivision of Taylor's Model

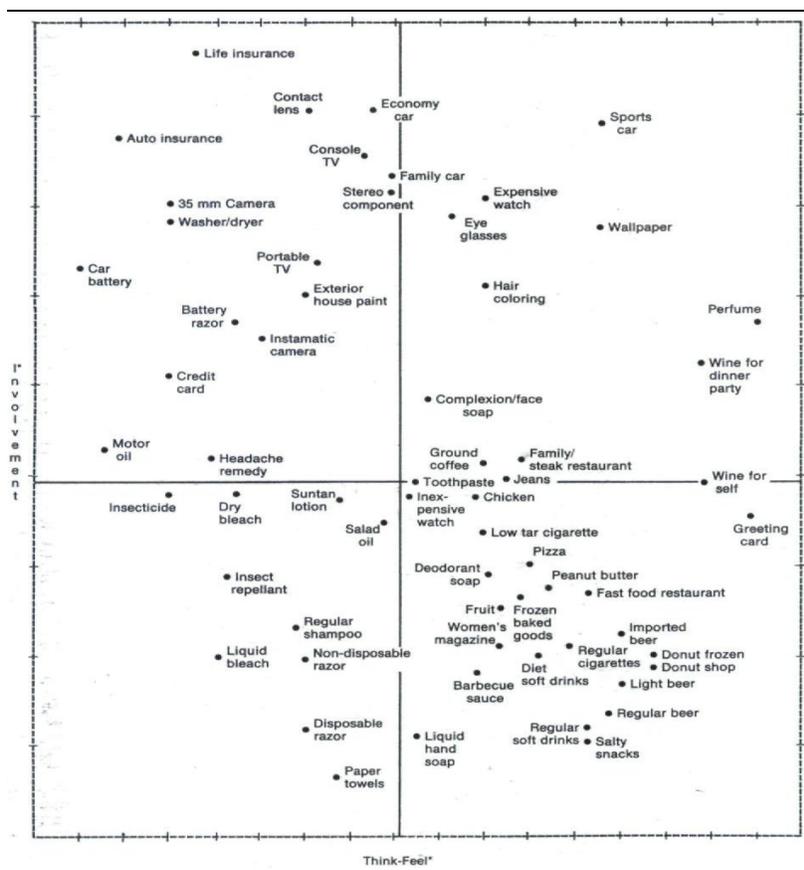


Fig. 2 Example of the FCD Grid, Provided by Taylor (1999)

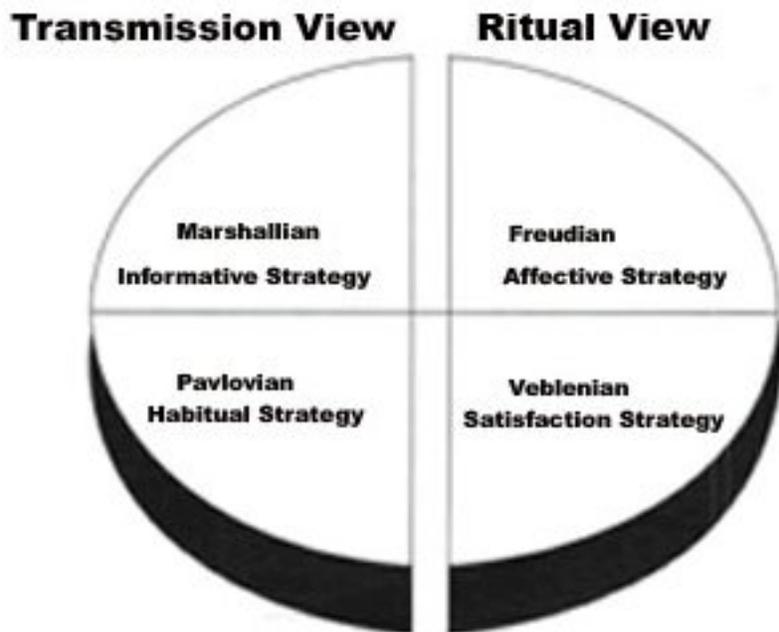


Fig. 3 Taylor's (1999) Second Division Containing Kotler's (1965) Strategies

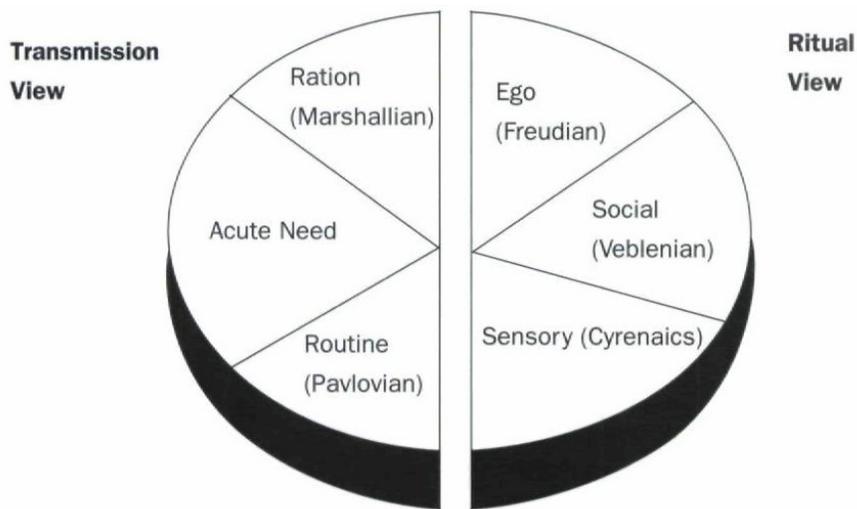


Fig. 4 Taylor's (1999) Six-Segment Strategy Wheel Model after Applying all Models

## APPENDIX B: CODING SHEET

|   |  |  |                |
|---|--|--|----------------|
| <b>ID Number</b>  |  |  |                |
| <b>City Name</b>  |  |  |                |
| <b>URL</b>  |  |  |                |
| <b>Date</b>   |  |  |                |
| <b>Start Time</b>   |  |  |                |
| <b>End Time</b>   |  |  |                |
| <b>Message Strategy</b>   |  |  |                |
|   | Specific Message Strategy (Place an "x" for all that apply - AT LEAST ONE) |  |                |
| 1   | <b>Ration</b>  |  | <b>Ego</b>     |
|   | <b>Acute Needs</b>   |  | <b>Social</b>  |
|   | <b>Routine</b>   |  | <b>Sensory</b> |
| <b>Overall Creative and Message Strategy (Check ONLY One)</b>     |  |  |                |
| 2   | <b>More Transformational</b>   |  |                |
|   | <b>Equally Transformational and Informational</b>                          |  |                |
|   | <b>More Informational</b>  |  |                |
| <b>Interactive Features</b>                                       |  |  |                |
| Place an "x" for all features that are present                    |  |  |                |
| <b>One-way Communication/Information Dissemination</b>            |  | Please remember to look for interactive features linked within enhanced navigational bars (which includes both bars on top and side) |                |
| <input type="checkbox"/>  | Information Posting  |  |                |
| <input type="checkbox"/>  | Advertising for external entities or companies                             |  |                |
| <input type="checkbox"/>  | E-mail addresses provided without hyperlink                                |  |                |
| <input type="checkbox"/>  | Phone numbers provided   |  |                |
| <input type="checkbox"/>  | FAQ  |  |                |
| <input type="checkbox"/>  | Graphics and Pictures  |  |                |
| <input type="checkbox"/>  | Enhanced Navigation Bars   |  |                |
| <input type="checkbox"/>  | Drop Boxes   |  |                |
| <input type="checkbox"/>  | Music (Make sure sound is on)  |  |                |
| <input type="checkbox"/>  | Other: (if applicable, please explain)                                     |  |                |
| <b>Two-way Communication &amp; Service/Financial Transactions</b> |  |  |                |
| <input type="checkbox"/>  | Sign-In or Registration function   |  |                |
| <input type="checkbox"/>  | User choices   |  |                |
| <input type="checkbox"/>  | Online survey or poll  |  |                |
| <input type="checkbox"/>  | Requests for government records  |  |                |
| <input type="checkbox"/>  | Requests for city services (street light, pothole repairs, etc.)           |  |                |
| <input type="checkbox"/>  | Request for city maps (or city maps available)                             |  |                |
| <input type="checkbox"/>  | Requests for weather information (or present)                              |  |                |
| <input type="checkbox"/>  | Guestbooks   |  |                |
| <input type="checkbox"/>  | E-mail hyperlink   |  |                |
| <input type="checkbox"/>  | Search (Boxes, Links or site maps, etc)                                    |  |                |
| <input type="checkbox"/>  | User Comment features such as inquiry mailboxes                            |  |                |
| <input type="checkbox"/>  | Blog features  |  |                |
| <input type="checkbox"/>  | Forums   |  |                |
| <input type="checkbox"/>  | Registration for city program  |  |                |
| <input type="checkbox"/>  | Registration for property  |  |                |
| <input type="checkbox"/>  | Business license application or renewal                                    |  |                |
| <input type="checkbox"/>  | Permit application or renewal  |  |                |
| <input type="checkbox"/>  | Online payment of fines  |  |                |
| <input type="checkbox"/>  | Online payment of taxes  |  |                |
| <input type="checkbox"/>  | Online payment of utility bills  |  |                |
| <input type="checkbox"/>  | Online payment of license/permit fees                                      |  |                |
| <input type="checkbox"/>  | E-Procurements   |  |                |
| <input type="checkbox"/>  | Other: (if applicable, please explain)                                     |  |                |
| <b>Connectedness (Check ONLY ONE in this Section )</b>            |  |  |                |
| <input type="checkbox"/>  | Site has less than 10 hyperlinks   |  |                |
| <input type="checkbox"/>  | Site has 10 or more hyperlinks but less than 20                            |  |                |
| <input type="checkbox"/>  | Site has 20 or more hyperlinks but less than 30                            |  |                |
| <input type="checkbox"/>  | Site has 30 or more hyperlinks   |  |                |
| <b>Multimedia Capabilities</b>                                    |  |  |                |
| <input type="checkbox"/>  | Podcasts   |  |                |
| <input type="checkbox"/>  | Audio clips  |  |                |
| <input type="checkbox"/>  | Audio-video clips  |  |                |
| <input type="checkbox"/>  | Photo slideshows or Photo library  |  |                |
| <input type="checkbox"/>  | Graphic animation (include flash pictures)                                 |  |                |
| <input type="checkbox"/>  | Live Radio   |  |                |
| <input type="checkbox"/>  | Web Camera   |  |                |
| <input type="checkbox"/>  | Other: (if applicable, please explain)                                     |  |                |
| <b>Two-way Real-time Communication</b>                            |  |  |                |
| <input type="checkbox"/>  | Live chat  |  |                |
| <input type="checkbox"/>  | Live video conferencing  |  |                |
| <input type="checkbox"/>  | Live phone conferencing  |  |                |
| <input type="checkbox"/>  | Other: (if applicable, please explain)                                     |  |                |

Based on previous studies' content analyses and level classifications (Ha & James, 1998; Moon, 2002; Stowers, 1999).

## APPENDIX C: CODER'S GUIDE

General direction: Mainly examine the main visual and texts but links including buttons.

To get consistence, code the specific strategy first followed by overall strategy.

---

### **Ego**

---

- Appeal to vanity, self-actualization (Not city's image but Web user's image)
- Emotional needs relating to self are fulfilled
- Image based executions (visual dominance) with little or no factual information
- Unstructured and ambiguous enough so each person can fit him/herself into the communicated message
- Example\*: A city for the professional.

---

### **Social**

---

- Valuing on others' (thoughts, opinions, evaluations, etc.)
- Stating to others, not to self
- Showing social situation motivating Web users (Group identification)
- Showing target public member as socially important to others
- Example\*: Our friendly community welcomes you!

---

### **Sensory**

---

- Five senses emphasized
- Sensory gratification
- Pleasurable moments
- Example\*: The beautiful Appalachian Mountains that surround the city provide great scenery.

---

### **Routine**

---

- Habitual investments into the city/Don't need to deliberate
  - Serving a cue or reminder (City icon, brand mark, logo or crest emphasized)
-

---

-Appeal to convenience and trivial interests

-Example\*: Welcome to New Orleans, The Big Easy!

---

### **Acute Needs**

---

-Limited time to make decision (timely decision)

-Serving a cue or a reminder in an urgent situation (Can also provide city icon, brand mark, logo or crest)

-Requiring immediate action

-Example\*: The city currently has immediate housing for Hurricane Katrina evacuees.

---

### **Ration**

---

-Rational Web users, city stakeholders and target audience assumed

-Needs a large amount of deliberation (lots of city information)

-Problem solving offered

-Emphasizing the differences or competitive advantages

-Example\*: The city offers a plenty of tax incentives for businesses looking to relocate.

---

\*Examples here are text-based messages only, but coders should consider the visual as well as texts. For instance, pictures of people interacting within the city may indicate a social strategy. A picture of a popularly, identifiable landmark such as Seattle's Space Needle or New York City's Empire State Building likely would indicate Routine depending on the context. When coding pictures, think about the context of why the city is using that particular one.

---

### **Fig.1 Specific message strategy.**

---

General direction: This three-point scale needs to be somewhat qualitative. The decision needs to be made based on the result of specific message strategies (See Appendix C.1.1) and the overall use of the strategies. For example, if no transformational strategy (e.g., Ego, Social, or Sensory) is found in the precedent step, the decision on this item should be “More informational.” If the coder evaluates that both transformational and informational strategies are equally employed, “Equally transformational and informational” should be coded. Both “more informational” and “more transformational” needs to be coded when all specific strategies coded prior to this step are on one-side (either transformational or informational) of the wheel. If a mix of informational and transformational strategies exists but an equal occurrence does not, determine whether the site, overall, is more transformational or informational and provide the site that code. (Basic assumption: Six message strategies can cover all message strategies.)

---

### **Transformational**

-Associates the experience of investing in a city, visiting a city or residing in a city with a set of psychological characteristics, etc

-Focuses on the Web user’s interest or relationship to the city and its brand image and their lifestyle, focuses on developing a communication about the city’s brand image

---

### **Informational**

-Provides with factual resource or statistical information about the city and its brand

-Provides with relevant city data in a clear and logical manner

-Show competing cities (either generically or specifically), focuses on claims of uniqueness, and provides nature of city to reinforce the claim

---

### **Fig. 2 Informational/ transformational strategy.**

## VITA

Jeremy John Starr is from Jefferson, Louisiana. He received his Bachelor of Science in marketing from Louisiana State University in 2003. While an undergraduate student, at Louisiana State University, he was a member of numerous organizations such as Pi Sigma Epsilon, Mu Kappa Tau, Student Government, Millennium Volunteers of LSU, and Circle K International. His involvement with Pi Sigma Epsilon, the national professional fraternity in marketing, selling, and management, influenced him to explore several options following the completion of his bachelor's degree, which included graduate school. After exploring several opportunities, Jeremy decided to take graduate classes within the Manship School of Mass Communication. In the spring of 2005, he officially began pursuing his Master of Mass Communication degree.

His background and interest in marketing influenced him to research advertising and public relations theory. Upon completion of his degree, Jeremy plans to pursue a career in marketing and advertising in the great city of New Orleans.