

CHAPTER FIVE – The Normative and Aesthetic Dimensions of E-Government Architecture: Citizen Reactions

The qualitative analysis mode used to further explore the human implications of e-government employed focus groups and a questionnaire. The focus groups and questionnaire were used to refine, distill, challenge and or illuminate the exploratory observations and preliminary conclusions emerging from the systematic web site analysis. We begin by looking at the focus group results and then move on to the discussion of the questionnaire results.

Two focus groups were used to determine if group outcomes could be replicated. Each one consisted of seven members. In each case they included (1) academic faculty, (2) graduates of or graduate students enrolled in a public administration program leading to employment in the public sector, (3) established public administration practitioners with varying levels of organizational and administrative discretion, and (4) university employees. All of the focus-group participants either worked for or were affiliated with Virginia Tech, were computer literate and had used the Internet, and had heard of e-government. Participants' ages ranged from the 18-24 year old category up to and including the 60-64 year old age category.

The focus group sessions were conducted on July 10 and 22, 2003, with the assistance of a skilled moderator obtained to lead the discussions and record the outcomes. Approximately an hour to an hour and one-half was allocated for each focus group session. Each one was organized around three discrete activities: (1) an initial word association exercise and discussion, (2) a review and critique of selected web sites taking most of the time, and (3) completion of a short ten question questionnaire at the end. In the pages below I discuss the outcomes of each focus group separately. Analysis of the questionnaire data will be handled separately after the presentation of each group's data for both the word association exercise and web site critique.

Focus Group Results: July 10

Word Association Data

After they gathered, focus group members were asked by the moderator to verbalize the immediate thoughts that came to mind when they heard the expression “e-government.” No definition of e-government had been either discussed or otherwise provided to the focus group prior to the exercise. The moderator encouraged the group to freely discuss their thoughts and elaborate. Upon reflecting on their comments later, I realized that the focus group had, in effect, addressed normative, aesthetic, and utilitarian considerations which I had been studying. Consequently I describe the members’ reactions in these terms.

Normative and Aesthetic Dimensions

The e-government reflections of the July 10th focus group interestingly enough somewhat mirrored the utopian and dystopian extremes of public opinion regarding the potential positive or negative effects of the Internet and/or e-government upon society that I briefly discussed in the first chapter. Several group members expressed concerns about issues that I previously categorized in this research under equity. The recorded equity concerns were: lack of privacy protections, whether accessibility for people with disabilities was available, who is and is not accessing the pages, whether firewalls¹ are in place, and whether web pages and e-government support elites and the societal status quo.

Some focus group members characterized e-government as “disappointing,” “vague and not helpful,” and as a “disconnect.” Another participant commented that e-government presents “citizens as consumers,” a perceived diminution of the role of the citizen within government. Two group members speculated on the nature of e-government access. They wondered “Do you really have better access” or “Is access real or illusion?”

¹ A security system intended to protect an organization's network against external threats, such as hackers, coming from another network, such as the Internet. A firewall prevents computers in the organization's network from communicating directly with computers external to the network and vice versa. Instead, all communication is routed through a proxy server outside of the organization's network, and the proxy server decides whether it is safe to let a particular message or file pass through to the organization's network. Source: (2001) Microsoft Encarta World English Dictionary.

Other comments focused on the benefits of e-government. Several stated how much they enjoyed the state of Virginia's Department of Motor Vehicle web site. Other comments addressed the perceived benefits of e-government such as fast and easier access to services, the availability of large amounts of data and background information for research purposes, the availability of online court opinions, greater access to legislation, the ability to both find out how a legislator voted and correspond with him/her by e-mail.

One group member compared the vision of e-government to the movie *Brazil*. The movie in question was a 1985 science-fiction drama about an individual trapped in a dystopian state where everything is very bad. The protagonist of the movie daydreamed endlessly about escaping from both his job in an incomprehensible bureaucracy and from a city filled with decrepit machinery in constant need of repair. Yet another group member commented about feeling like a crew member in the movie *2001 A Space Odyssey*. In this film, HAL, a supercomputer and the protagonist of the picture, became damaged. The result was idiosyncratic responses to crew members' requests for information, frustrating them no end. The HAL metaphor was used to express similar frustration about the dynamic nature of web sites. The group member opined that "You learn the (web page) links and they change."

One person commented that e-government is ephemeral because it has no physical manifestation. Others expressed concern about a perceived "lack of organization" of e-government web sites they had visited (no sites were identified). Still another member posed the conceptual question, "Is e-government more holistic as a result or is it the opposite?" Holistic, as used in the question, was a proxy for an integrated service delivery approach as opposed to a fragmentary one. In other words, could citizens obtain all services online or would they have to move back and forth between the e-government web site and the organization's physical offices?

The remaining e-government-related comments did not fit into either the normative or aesthetic categories but fell more within the bounds of what I categorize as organizational concerns. For example, one group member observed that information technology (IT) and e-government changed the nature of personnel needs, creating the necessity for technology oriented personnel or "techies," and the overall need for an organization chief information officer or CIO. Several

discussed contracting-out the creation of web sites and a related perceived loss of control and organization-wide coordination. Others observed that the language of the web site environment conveys interesting and perhaps contradictory organizational messages with respect to the roles of individuals who create and/or maintain web sites, generally referred to as “webmaster,” “webmistress,” or “webweaver.”

Aesthetic word association and web site critique comments for this group and the July 22 one were more numerous and richer than the normative. I speculate that two factors account for most of the observed difference. The design of the focus group exercises purposefully excluded any discussion of either aesthetic or normative web site dimensions with members. Secondly, aesthetic dimensions expressed through web site architecture have the ability to shape the user’s initial sensory perceptions in a manner analogous to a Rorschach test—independent of written context and background.

Critiquing Web Sites

Each focus group was asked to view a total of twelve web sites—six state portal sites, five federal agency home pages, and one federal portal. The twelve web sites were drawn from the same sample used in the web site analysis reported earlier. Also included were sites representative of West’s highest, average, and lowest rankings for 2002.

The web sites were projected onto a beaded screen using a laptop computer connected to the Internet and configured with a projection device. How West or I rated them was neither disclosed at the beginning nor at the end of the focus group session. Nothing was said about web site analysis factors such as site organization, use of colors, text readability, ease of finding information or potential messages conveyed by site organization.

Focus-group participants were asked either to jot down their initial reactions to the sites they viewed and/or to comment so the moderator could record their responses on chart paper. In both groups, members elected to have the moderator record their thoughts. I discuss these with respect to state portals first followed by federal web sites. Refer to Appendices J and K for summaries of the critiques.

State Portals

The state portals used in the critique, in the order of their viewing (with West's ranking of them parenthetically noted for our purposes), were as follows: Tennessee (1), New Hampshire (14), Virginia (15), Illinois (16), New Mexico (31), and Alabama (49). Although, the group did criticize the absence of accessibility and privacy statements in two states, most comments were decidedly aesthetic in nature. I categorize them using the aesthetic constructs employed in the earlier analysis of web sites.

We recall that *starkness* addresses whether or not too much text is placed on the computer screen, thereby generating an overly crowded and/or multi-colored presentation. The group critique of the Tennessee state portal was that it was "too busy, wordy" and that the "user's eye wanders in the process." Members wondered how many times they would have to (mouse) click, revealing a perceived lack of ease in locating information on the site. Similarly, the group critique for the Illinois state portal was that it contained "too much information" and that it was difficult to find anything. These reactions suggest that the concept of starkness has a practical application and validity.

The concept of *purpose*, we remember, identifies whether or not the web site has incorporated graphic images to aid the citizen in both identifying the site as a government one and in articulating either the purpose or mission of the organization. The group addressed this aesthetic consideration for Virginia and New Mexico. The critique of the Virginia portal was that it did not say anything about Virginia government, and that of New Mexico was that it did not look like a government web site.

Density, as noted earlier, arises from the fact that the computer screen can display less text than a printed page. As a result designers, in attempting to avoid the starkness issue will often resort to expanding the web page to two or more pages. The group critique of the Illinois state portal was that it was "gigantic," a comment that emerged after the group observed that it was necessary to scroll through two pages of information to view its entire content.

The *emotive* aesthetic is a determinant of the extent to which color has been appropriately used in web site design, with some researchers favoring colors found in nature, such as blues, grays, and yellow. The group critique of the New Hampshire state portal gives credence to the emotive aesthetic. Its members observed that the seasonal (fall) photograph and other similar colors used on the New Hampshire site made it appear “friendlier and more inviting,” mirroring this researcher’s assessment of it mentioned earlier. However, the group’s critique of the New Mexico state portal did not include any reference to the dominant red background of the site that this researcher thought was inappropriate. The critique of the Alabama portal was that it had “too much white space,” was “hard on the eyes,” “too bright,” and that it looked like a cartoon. This seemed to be a reference to the dominant white background color rather than the use of white space to organize site content.

Organization is a documented design consideration in the presentation of information. It is achieved by the appropriate use of blank or so called white space (Fleming & Levie, 1993; Tufte, 1990; Wurman, 1990). Embedded in the group’s critique of the Virginia portal was the comment that the links there are “too close and confusing,” verifying concern for that factor.

Human agency relates to the inclusion of pictures of people. The group’s critiques of the New Hampshire and Illinois state portals show how pictures are not always helpful. In the case of New Hampshire, the group commented that the photograph of the governor was a “glamour shot” and that it did not otherwise add anything to the site. An Illinois portal photograph was criticized as not making it clear whether it was of a state official or citizen.

As noted earlier, the architectural styles of government buildings are sometimes intended to reflect their function or values of service or *stability*. Reactions to the New Hampshire, Virginia, and New Mexico portals lent some credence to this researcher’s argument for inclusion of a symbol or photograph of a government building. A group comment on New Hampshire was that the inclusion of the capitol dome was a nice touch. The New Hampshire portal site had incorporated a partial photograph of its capitol dome. The Virginia site was faulted for not having a single symbol of its government such as a building or state bird—or indeed anything about Virginia. The New Mexico portal was said not to look like a government web site at all, as

it contained no capitol dome (the drum-shaped New Mexico capitol has none). We now turn to this group's critique of federal web sites.

Federal Web Sites

The federal web sites used in the critique, in the order of their viewing and with West's ranking of them parenthetically noted, are as follows: FirstGov (7), Federal Communications Commission (1), Department of Justice (20), 4th Circuit Court of Appeals (47), Supreme Court (50), and the Securities and Exchange Commission (29).

The focus group's critique of these sites included some equity issues, which I will address first. As for the availability of foreign language translation, the group praised the FirstGov portal and the Securities and Exchange Commission (SEC) sites for clearly displaying their language translation capability. The group did however take the SEC web site to task for including a link for foreign country access and then only providing Spanish translation capability. Other comments related to charges of elitism. The group's critiques of both the 4th Circuit Court of Appeals and SEC web sites addressed a perceived attempt to limit access to them. In the court's site, an individual could not access the main web site area without first logging into the site, and this was seen as elitist. The SEC site was criticized for its use of jargon or "technical speak." This too was perceived as elitist and a failure to distinguish or acknowledge audience differences.

Turning now to the discussion of the group's aesthetic critiques of federal web sites, its perception of the FirstGov site was that it contained "too much information," i.e., too much text on the page and spillage over onto other pages (technically, an issue of density). This researcher had observed that the First Gov portal site did, in point of fact, violate the starkness standard, with a marginal spillover problem. The group similarly critiqued the Federal Communications Commission (FCC) site for having too much text, making it difficult for a user to find things.

The concept of *purpose* identifies whether or not the web site has incorporated graphic images to aid the citizen in both identifying the site as a government one and in articulating either the purpose or mission of the organization. The group's comment on the FCC and Department of

Justice site was that they did not indicate what they did or incorporate a mission statement. Yet also, paradoxically, the statement was made that the Department of Justice site “screams law and order.” One can conclude from this that personal bias should not be the determining factors in the citizen’s assessment of a government web site’s mission and/or purpose. It is far better for the institution to clearly and succinctly articulate both its mission and purpose in order to limit confusion.

The group’s *emotive* related critique of the Department of Justice web site, which extensively used varied shades of yellow in its graphic and text content, was harsh. One group member characterized the bright yellow “as hideous” because it appeared harsh and cold. “Too much white background” was a criticism of the FCC site; one person commented that it looks like a legal brief.

On images of *stability*, the group critique of the Supreme Court web site was that it appeared “dignified, inviting, warm, well thought out.” The group noted that they liked use of the Supreme Court seal and picture of the Court building. The site was characterized as “majestic and inviting.” This reaction is in marked contrast to its rating by West in his 2002 study, where the Supreme Court site was ranked 50th among the 59 federal web sites evaluated.

We now turn to the examination of the July 22, 2003 focus group data to determine if any of the findings emerging from the July 10, 2003 focus group data can be replicated.

Focus Group Results: July 22

Word Association Data

The word association exercise for the July 22 focus group was conducted in the same manner as that of the July 10, 2003 group. Focus group members were asked by the moderator to verbalize the immediate thoughts that came to mind when they heard the expression “e-government.” No definition of the term had been discussed or otherwise provided. The moderator encouraged those present to discuss their thoughts and elaborate. The following reflections of the focus group address normative, aesthetic, and utilitarian considerations.

Normative and Aesthetic Dimensions

Compared to the July 10 group, this group expressed more concerns over personal privacy issues, feelings about having access to large quantities of information, the accuracy of information, and implications of e-government for local government.

Several group members expressed concerns about e-government access for the disabled and for those who spoke a language other than English. One wondered about the functionally illiterate user and the relevance of e-government to that category of citizen. Another wondered whether or not some e-government sites are solely designed for government elites such as the federal Senior Executive Service.

Multiple concerns with regard to e-government privacy were raised. These generally involved the security of the web site and of the user's personal information. Concerns about being monitored while on a web site were expressed, as was worry about the ready availability of one's personal information over the Internet. Related concerns were how one might go about correcting a mistake in one's electronic records or preventing the unauthorized disclosure of confidential information such as a sealed juvenile court record.

Several participants observed that e-government provides a variety of benefits to citizens as well as a perception that government is more accessible. They commented that when they thought about e-government they thought about the Internet and its use by government to deliver services such as paying taxes and accessing records.

Other group comments focused on e-government access to services that they previously may not have used such as park reservations. One member stated that e-government provides a faster means for completing basic transactions such as renewing one's automobile registration online or checking on driving conditions. Another noted that e-government makes it easier to communicate with government officials while another said e-government facilitated job searches.

Some noted that e-government also brought to mind personal anonymity, the elimination of personal interactions for transactions, and identity theft. The feeling of personal anonymity was tied to the need to interact with the computer rather than an individual. Identity theft was raised as a concern by individuals who personally knew people who had been victimized.

Group members raised questions about both verifying the accuracy of information and managing the large quantities of information obtainable on government web sites. One member commented that it is not uncommon to find “old data on local government web sites.” Another member noted that, in general, “information is not always accurate or current.” One posed the question of what to do when the web site information does not address the question you have, and another commented that it took the FCC three and one-half months to respond to an e-mail request for information.

Several members stated that the sheer volume and immediacy of information available on government web sites made them feel stressed. That was because they found it both difficult and time consuming to separate the information “wheat and chaff.” This feeling, members articulated when combined with their “wheat and chaff” information evaluation, I would argue is symptomatic of Wurman’s concept of information anxiety discussed in Chapter 3.

Critiquing Web Sites

This focus group viewed the same twelve web sites evaluated by the first group, albeit 12 days later. The order of presentation of the web sites was the same as earlier.

State Portals

We recall that the state portals (and their West rankings) were those of: Tennessee (1), New Hampshire (14), Virginia (15), Illinois (16), New Mexico (31), and Alabama (49). The focus group’s critiques of the state portals were decidedly aesthetic in character. However, the group did make several normative critiques which I summarize first.

Tennessee’s portal was faulted for not having a readily apparent privacy policy or a Spanish language link. The New Hampshire and Virginia portals were complimented for their easy-to-

locate privacy policy links and the New Mexico portal was praised for the honesty of its privacy policy. Alabama's portal was observed not to have links for the visually impaired such as a text-only version to facilitate the use of web site reading software.

Turning to the aesthetic dimension, excessive crowdedness was perceived by the group in two state portals and one federal site. The Tennessee portal was seen as containing so much information that it was difficult to figure out where to begin on the web site. Similarly, the Illinois portal was said to look like a newspaper. One person exclaimed that "I am not going to look through something like this!"

The group's critique of the Department of Justice (DOJ) web site also touched on *starkness* concerns. The group noted that the DOJ site content was in long paragraphs that are difficult to follow. The web site text was said to look as if it had been dumped onto the site. Both comments speak to the perception of an overly crowded and less than professional presentation.

On the concept of *purpose*, which relates to whether or not the web site has incorporated graphic images to aid the citizen in both identifying the site as a government one, the Tennessee state portal met with criticism. Participants noted that they had difficulty distinguishing whether the Tennessee portal was a government site or a chamber of commerce one.

The Tennessee portal was also chastised because the page did not fit on the screen and it was impossible to see the bottom of the web page (a *density* issue). The Illinois state portal was also critiqued as being visually assaulting for a variety of reasons, among which was the fact that its content did not fit on one screen.

On *legibility*, the group critique of the Virginia portal was that the print is too small. Alabama's portal was also faulted for having small print at the top and bottom of the site.

The group critique of the New Hampshire state portal gives credence to the *emotive* aesthetic which has to do with use of color. As with the first focus group, New Hampshire's portal was seen as pleasant to look at, with its seasonal (fall) photograph containing blues, grays, and

subdued yellows. The group's critique of the New Mexico portal was mixed. Most group members were unfavorably struck by the site's extreme use of white and red but one group member opined that the flowers on the site were pretty.

The issue of organization, which pertains to the use of white or blank space to visually separate and/or categorize information, was not directly addressed (Tufte, 1990; Wurman, 1990). However, the inference could be made from one of the comments embedded in the group's critique of the Alabama portal. Participants commented that white space was a design issue for this site because the bulk of its content was surrounded by a wide expanse of wide space. The organization of links on the Alabama portal was also perceived as a problem. Perhaps an appropriate use of white space to separate, organize, and balance the links over the entire page could have solved both problems noted by the group.

Human agency, or the inclusion of pictures of people in instructional and/or informational material, was commented on with respect to Tennessee state portal. A photograph of the governor on the site was seen as disturbing, probably because of the group's related difficulty in identifying the portal as a government web site.

We next turn to the group's critique of federal web sites.

Federal Web Sites

As before, the federal web sites used in the critique, in the order of their viewing and with West's ranking of them parenthetically noted, were: FirstGov (7), Federal Communications Commission (1), Department of Justice (20), 4th Circuit Court of Appeals (47), Supreme Court (50), and the Securities and Exchange Commission (29). Also as before, the group had comments on several equity issues even though most were aesthetic in nature.

The value of equity, we recall, was operationalized by the presence or absence of certain web site features such as TTY or TDD capability for the speech or hearing impaired individual, the availability of a text version for the sight impaired or for individuals with low speed modem connections, and the availability of foreign language translation capability for those individuals

who speak a language other than English. The group's critique of the FCC site was that there were no language options other than English. Other observations, though not specifically linked to an equity feature nonetheless had an equity cast to them. The 4th Circuit Court of Appeals site was perceived as attempting to limit access to the site by two means: one could not access the main web site area without a password and a charge of 7 cents per page of information retrieved was assessed. Group members thought this was both inappropriate and elitist. The FirstGov web site was seen as at fault by the way in which audiences were categorized. It was unclear why separate categories were provided for citizens and federal employees. We next turn to the discussion of the group's aesthetic critiques of the federal web sites. These critique's tended to be briefer than those of the state portal sites.

Moving on to aesthetic considerations, the FCC web site contained "lots of communication," an observation that can be interpreted to address the issue of *starkness*, i.e., too much text on the page, as well as density, or page spillage. This researcher agreed that the FCC portal site did, in point of fact, violate both considerations.

The concept of *purpose*, whether or not the web site has incorporated graphic images, was the subject of group comments on the FCC web site. The group wondered what audience(s) the FCC site was targeting and whether or not the site was a public relations presentation. The latter point was a byproduct of the group's observation that headlines seemed to dominate site content.

The question of who is the intended audience also surfaced in the group's critique of the 4th Circuit Court of Appeals web site. This site's use of extensive building imagery made the group speculate as to whether the site is an architectural one. The overuse of building imagery, without much (or any) informative text to place the imagery in context, obscured the institution's mission and/or purpose rather than clearly conveying it.

As discussed several times already, evidence abounds that the appropriate use of color does make a difference. The group's reaction to the Supreme Court site was that they liked the blue background used. The Department of Justice web site's yellow background was seen as a bad

choice, however, FirstGov's use of yellow on a white background made it difficult to read, participants believed.

In conclusion, we see that, overall, a fair amount of consonance exists between the two groups' with respect to both the word association exercise and the critique of state portals. There was not quite as much agreement on the federal sites, however. Possibly this can be attributed to time limitations on this review or the fact that several focus group members had meetings to attend immediately following the session. We cannot know whether a more leisurely examination of the federal sites would have more confluence—or more disagreement. We now turn to the questionnaire results.

Questionnaire Data Analysis

As stated, at the end of each session a short questionnaire was handed out. Its results were treated as one set of data. It consisted of 14 participants, 8 of whom were female and 6 male. All participants were White. Approximately 43 percent were in the 18-34 year consolidated age range, 36% in the 35-39 year age range and the remaining participants evenly distributed across the 45-64 age ranges. As noted earlier, participants included (1) academic faculty, (2) graduate students, (3) public administration practitioners, and (4) university employees. All participants either worked for or were affiliated with Virginia Tech, were computer literate and had used the Internet, and had heard of e-government.

A ten question questionnaire employing Likert scale and forced-ranking questions was used to collect nominal level data to measure citizen perceptions and attitudes about e-government. The questionnaire was adapted in part from two 2001 surveys of bureaucrats and citizens conducted by the Hart-Teeter polling organization for the Council for Excellence in Government (Hart-Teeter, 2002a; Hart-Teeter, 2002b). See Appendix C for a facsimile of the questionnaire.

The questions were designed to further explore the propositions and preliminary findings emerging from both the researcher's web site analysis and the focus group exercises. As stated in Chapter Three, the questions fell into four categories (1) familiarity with E-Government (2)

general attitudes towards e-government (3) attitudes toward web site features and (4) demographics. The discussion of questionnaire data is organized around these categories.

A key criterion used in selecting focus group participants was the assumption that the participants had some degree of familiarity with e-government. This question sought to validate that assumption and to elicit the respondents' opinion of their degree of familiarity. Approximately 43% of respondents indicated that they were *very familiar* with e-government while 50% responded that they were *fairly familiar*. Only one participant indicated being just *somewhat familiar* with e-government.

General Attitudes Towards E-Government

The first attitudinal question, the second in the survey asks "Overall, what effect would you say e-government is having on the way government operates?" This question sought to determine whether: (1) access to e-government web sites and related services/information translates into positive attitudes about government operation in general and (2) whether e-government is possibly a perceived proxy for better government.

The perception of just under eighty percent of the respondents (78.6%) was that e-government was having a *somewhat positive* effect on the way government operates. This figure roughly corresponds with the percentage of respondents (93%) who indicated that they were *very or fairly familiar* with e-government.

The next attitudinal question: "And, looking ahead three to five years what effect do you think e-government will have on the way that government operates?" This question probes user attitudes on e-government's long-term effect on government in general. A positive attitude could indicate an expectation that whatever problems confronting e-government will be resolved, that e-government services will likely expand and that government as a whole will be improved as a result. A negative attitude could speak to a latent or explicit belief that neither e-government or any other reform initiative can substantively change the way government operates—for the better or reflect a negative attitude about potential long-term adverse consequences to government operation that could arise from the expansion of e-government.

Approximately eighty-six percent, or 12 of the 14 respondents, had a positive attitude about the future effects of e-government on the way that government operates. Two of the 12 respondents expressed *very positive* attitudes and the remaining ten respondents indicated a *somewhat positive* attitude. Only one respondent held a *somewhat negative* attitude and one respondent was *not sure*.

The next attitudinal question was “In your view, how high a priority should it be for government to invest tax dollars in making information and services available over the Internet?”

This question sought to determine (1) the extent to which the attitudes of users of e-government signal an endorsement and commitment to funding e-government and (2) whether e-government service delivery is viewed as a complement to or substitute for traditional direct service provision.

The participant responses were almost evenly distributed among the priority options.

Approximately thirty-six percent (35.7%) or five respondents indicated that investing tax dollars to make information and services available over the Internet should be a *very high* or *high priority* for government, another 35.7% responded that it should be a *medium priority*, and 28.5% felt that it should be a *low priority* or were *not sure*. This distribution of tax investing priorities for e-government may mirror both the evolving nature of this dynamic medium and its still as yet inchoate institutional and governance implications.

Attitudes Toward Web Site Features

Following the general attitude questions, respondents are asked to rank several specific features of government web sites, assigning none the same value. (See Appendix C).

The first question was designed to examine whether (1) user attitudes toward e-government web sites reflect concerns about functional deficiencies in site design, i.e., legibility, organization and so forth; (2) if they do, then what issue elicits the most concern, (3) how do these issues compare

with the focus group feedback in both the word association exercises and web site critiques and (4) how do these issues compare with this researcher's aesthetic web site analysis component?

Overall, 78.6% or 11 in 14 respondents indicated that making government web sites easier to understand should be the *most important* or *important priority* for government web sites. The same percentage of respondents indicated that the *less* or *least important* priority for government web sites should be efforts to include more information and services.

Participant responses were ambivalent with respect to the remaining two issues of (a) making web sites more secure for conducting business and (b) making it easier to find the site you need. In both cases the responses were evenly distributed with 50% of respondents indicating that the issues were *most important* or *important* while 50% indicated they were *less* or *least* important.

The dominant priority for government web sites expressed by participants was that sites should be made both easier to use and understand. Some of the word association exercise responses for the two focus groups also addressed the issues of making e-government web sites easier to use and understand. Several comments of the July 10th focus group addressed a perceived "lack of organization" of web site content, frustration with continual changes in the organization of web site information "You learn the (web page) links and they change," and web sites as "vague and not helpful." The July 22nd focus group comments with respect to the difficulty and time consuming aspect of sorting through the large volume of information present on web sites to locate accurate, current, and relevant data also speaks to making web sites easier to use and understand.

Focus group web site critiques also touched upon improving the ease of use and understandability of e-government web sites. The state portals for Tennessee and Illinois were critiqued for a perceived difficulty in locating information. While the Virginia portal was critiqued for having links that were "too close and confusing." Similar focus group critiques were made of some of the federal web sites such as the FirstGov site for containing "too much information."

My aesthetic web site analysis of state portals and federal web sites highlighted successes and failures in achieving the twin objectives of making web sites easier to use and understand. We recall, that eight aesthetic constructs were developed and used to, in part, gauge the overall coherence of a web site's artistic and content presentations. A 100 point index derived from these constructs and their related scoring was used to rank the overall aesthetic character of state portals and federal web sites. I suggest that my aesthetic index also may be viewed as a meaningful proxy for a web site's ease of use and understandability. The mean aesthetic index scores for state portals and federal web sites were 63 for state portals ($N = 50$) and 50 for federal web sites ($N = 59$). If one were to convert these mean aesthetic index scores to letter grades, state portals and federal web sites would receive grades of D and F respectively. It is important to note again that there were successes among both state portal and federal government web sites in the incorporation of aesthetic considerations. However, more work is needed.

The next question called upon respondents to rank another set of priorities listed for government web sites. This one is related to site access. My assumption here was that public administration students and practitioners should have some level of familiarity with and a related concern about social equity issues relative to the delivery of government services. This forced-ranking question was intended to validate the above assumption and examine whether (1) user attitudes in prioritizing specific feature requirements for e-government web sites reflect a consideration of social equity issues and related values and (2) how or if these attitudes compare with the comments and discussions arising from the focus group word association exercise and web site critiques.

Approximately 85.7% or 12 in 14 respondents indicated that protecting user privacy should be the *most important* or *important* priority feature for government web sites. The respondents were evenly split with respect to features providing an opportunity to speak with a public official. Fifty percent indicated that it was *most important* or *important* while 50% felt it was *less* or *least* important. The remaining two features and their perceived priority were significantly lower. Less than half of the respondents, or 42.9%, indicated that provision of access for disabled users should be the *most important* or *important* priority while only 21.4%

indicated that the provision of services in a language other than English should be an *important* priority for government web sites.²

The preceding results point to a dominant concern with protecting user privacy first. Concerns for social equity issues such as providing access for the disabled user and/or the provision of web site content in languages other than English, though present, are nonetheless trumped by privacy concerns. This data somewhat mirrored the comments emerging from both the focus group word association exercises and web site critiques. In both instances recurring concerns were expressed with respect to protecting the user's personal information, being monitored while visiting a web site, and the desire to have a prominent policy statement link on the web site. Concerns about language however were far more prevalent than those regarding access for the disabled.

Question No. 7 asks for rankings of possible positive things that may result from e-government. This forced-ranking question was intended to examine: (1) whether user attitudes in prioritizing expected e-government benefits mirror in whole or in part the dominant rationale for e-government implementation—that it is more efficient and cost effective government, (2) whether such an attitude implies that traditional government therefore cannot be as efficient or cost-effective, (3) beliefs related to whether e-government can be more accountable to citizens than traditional government and (4) is there any consonance between these attitudes and the comments and discussions emerging from the focus group word association exercises?

Less than one fourth, or 21.4%, of respondents ranked more efficient and cost-effective government as the *most important* or *important* positive effect of e-government. Greater public access to information was by far the most positive perceived effect of e-government with 78.6% or 11 in 14 respondents indicating that it was *most important* or *important*.

Participant responses were ambivalent with respect to the remaining two potential positive effects of (1) more convenient government services and (2) government that is more accountable to its citizens. In both instances the responses were evenly distributed with 50% of respondents

² Note that all the participants completing the questionnaire were well educated, White, English speaking and that these findings may not be considered to be a representative cross-section of the user population.

indicating that the issues were *most important* or *important* while 50% indicated that they were *less* or *least* important. The ambivalent response data for these two potential positive effects could be a reflection of the uncertainty surrounding the evolving character and architecture of e-government as well as its overall place within our systems of governance.

There was no consonance between the above data and the data emerging from the focus group word association exercises. By and large, the focus group data highlighted concerns about too much information and its poor organization and presentation on e-government web sites. Greater public access to information may be a proxy for an as yet undetermined latent concept or alternatively a proxy for government accountability.

Question No. 8 lists the potential negative things that may result from e-government. Respondents were asked to indicate how big a concern each one was to them on a scale of one to ten. This question focused on six areas of potential concern: (1) government employees potential misuse of personal information; (2) government impersonality; (3) hackers; (4) the potential for difficulty in obtaining information; (5) loss of privacy; and (6) inequality of access to public services. The respondent numbers assigned to each of these potential concerns were used by the researcher to validate the respondents' expressed attitudes in questions 4, 5 and 6 and to determine: (a) what values these concerns might reflect (b) whether these attitudes and concerns replicated the e-government focus group word association exercise results and (c) if these values mirror or differ from those analyzed in the web site research component. A response of 6 was interpreted as an expression of moderate concern and values above that of increasing levels of concern peaking at 10 or extremely concerned.

Privacy and related concerns about it have been a recurring theme emerging from both the focus group word association exercises and the broader analysis of web site normative dimensions. Three of the six areas in question number eight were privacy oriented: (a) government employees misusing personal information, (b) hackers breaking into government computers, and (c) less personal privacy. Slightly more than half or 57.1% of the respondents expressed *moderate* to *extreme concern* about the potential misuse of their personal information by government

employees while 71.4% expressed *moderate to extreme concern* with respect to both hackers breaking into government computers and having less personal privacy.

The remaining three areas of the question focused on the potential negative effects of e-government on the personal encounter and equitable access to government services. Overall, just under eighty percent or 78.6% of respondents indicated *moderate to extreme concern* that people without Internet access would receive less government service while 64.3% expressed *moderate to extreme concern* that government would become more impersonal. The expressed concerns regarding it becoming harder for an individual to obtain an answer were equally distributed with 50% being moderately to extremely concerned and 50% less so.

The preceding reported responses relative to privacy and to people without Internet access are also value expressions. Privacy and equity were two of the four values underpinning the normative examination of web sites in this exploratory study. The expressed concerns regarding these values mirror those previously discussed in both the focus group word association exercise results and those analyzed and discussed in the overall normative web site analysis component. However, mixed results were obtained by this researcher in his attempts to use the foregoing responses to validate the respondents' expressed attitudes in questions 4, 5, and 6 which were discussed earlier.

Generally speaking a willingness to spend tax dollars to implement a specific policy and/or program is a strong indicator of a related commitment. Responses were more or less evenly distributed in question number four which dealt with establishing a priority level for the expenditure of tax dollars to make information and services available over the Internet. Overall, a little more than seventy percent or 71.4% indicated that the investing of tax dollars in e-government should be a medium to very high priority. What is unknown however is the extent to which this indicated commitment to invest tax dollars may or may not have been perceived by respondents as also addressing e-government privacy concerns.

The privacy concerns expressed in this question with respect to the misuse of personal information by government employees, computer hackers, and that of less personal privacy

validated the respondents' top priority response in question number six of protecting users' privacy.

The top priority response in question number five was to make government web sites easier to use and understand. Expressed concerns about government becoming more impersonal and it becoming harder to get an answer are two of the potential negative effects of not making government web sites easier to use and understand. These concerns do, in part, validate the response in question number six.

The last question asked whether respondents favor or oppose e-government as the primary means for obtaining information and services from government. This Likert scale question contained implicit queries such as (1) what vision of government can be inferred from a strong user preference for e-government as the primary means for obtaining information and services from government, (2) would this be an endorsement solely of the information function of government and (3) how does this preference compare with the comments and suggestions elicited in the focus group word association exercises.

Only one respondent indicated that he or she *strongly favored* e-government as the primary means for obtaining information and services from government. Four respondents indicated that they *strongly opposed* the measure and another three *somewhat opposed* it. Another six respondents *somewhat favored* the measure. The preceding responses can be viewed as ambivalent with 50% favoring and 50% opposing the measure. Closer scrutiny of these responses along gender and age range categories revealed that these two factors were unrelated to a respondent's preference in this area. Responses were evenly distributed among the age and gender categories.

Overall Findings

To sum up, two focus groups and the administration of a questionnaire were used to refine or illuminate the exploratory findings and preliminary conclusions emerging from the web site analysis. Overall, a nexus was found between the web site analysis component and the focus

group and questionnaire aspects of this study. The web site analysis highlighted that state and federal web site privacy and equity features needed improvement. Focus group observations and questionnaire responses indicated much interest in the privacy issue, but they differed with respect to access (equity) and the manner and extent of information provision.

Both focus groups expressed more positive perceptions of e-government in the abstract consideration of specific issues raised in the questionnaire than in their word association comments and critiques of web sites. In the latter two instances, the comments and critiques provided broadly mirrored the observations of the web site analysis component which identified e-government architecture shortcomings in most state portals and federal web sites but also acknowledged design successes.

Questionnaire respondents generally expressed positive attitudes regarding e-government's effect on both current and future government operations and ambivalence with respect to investing additional tax dollars in it. Respondent attitudes toward specific web site features were consonant with some of the word association comments on making web sites easier to use and understand. This was a recurring theme in all three analysis modes. However, it is particularly interesting when viewed against the backdrop of respondents' expressed attitudes on funding e-government and the importance of e-government efficiency and cost-effectiveness.

Only 21.4% of respondents felt efficiency and cost-effectiveness were important positive effects of e-government. We recall that the incubator for e-government was the confluence of e-commerce, the reinvention of government movement, and the Clinton administration's National Performance Review Project. The catalyst for all three initiatives, and e-government, was achieving greater efficiency and cost-effectiveness of operation.

The disjunction between desired improvements in e-government and relatively little concern for efficiency and cost-effectiveness recasts the longstanding dilemma of citizen requests for increased services absent a willingness to fund them. This is yet another instance of consonance between the virtual new civic space e-government represents and its real world counterpart.

The next chapter will revisit the questions raised in Chapter One and discuss the implications of e-government for the citizen in this new civic space. It also contains selected prescriptions for the public administration community.