

Secretaries of State Online

Politics 2.0 and the World Wide Web

An honors thesis for the Department of Political Science

Emily Hellman

Tufts University, 2010

TABLE OF CONTENTS

List of Figures.....	iii
List of Tables.....	iv
Chapter 1: Introduction	1
Chapter 2: The Development of Government 2.0.....	6
Chapter 3: Research Challenges.....	26
Chapter 4: Methodology.....	35
Chapter 5: Features, Functions, and Web 2.0 Tools.....	48
Chapter 6: Comparisons and Case Studies.....	66
Chapter 7: Conclusion.....	91
Appendix I: List of State Score.....	106
Appendix II: List of On-The-Record Interviews.....	109
Appendix III: List of State Scores.....	110
Works Cited.....	112

LIST OF FIGURES

Figure 4-1: Underlying Model Guiding Analysis of Secretaries of State Websites.....	36
Figure 5-1: Distribution of Feature Scores.....	49
Figure 5-2: Distribution of Function Scores	58
Figure 5-3: Distribution of Web 2.0 Scores.....	62

LIST OF TABLES

Table 4-1: Website Features Coded in the Analysis, and Their Definitions.....	37
Table 4-2: Web 2.0 Technologies and Their Applications.....	43
Table 5-1: Online Information.....	50
Table 5-2: Public Outreach.....	53
Table 5-3: Accessibility and Security Policies and Practices.....	53
Table 5-4: Content Navigatability.....	56
Table 5-5: Number of Services Use.....	59
Table 5-6 Interaction versus Transaction Use.....	60
Table 5-7: Top Five Services.....	61
Table 5-8: Web 2.0 Tools Use.....	63
Table 5-9: Pearson Correlation with Web 2.0 Scores.....	64
Table 6-1: Web 2.0 Users Scores and Rankings.....	67
Table 6-2: Non-Web 2.0 Users Scores and Rankings.....	67
Table 6-3: Secretary of State Technology Experience.....	69
Table 6-4: Secretary of State Number of Terms.....	72
Table 6-5: Recent Redesign.....	74
Table 6-6: Maintenance.....	76
Table 6-7: Budget.....	78
Table 6-8: Time Problems.....	80
Table 6-9: Review Process.....	81
Table 6-10: Recent Accolade Received.....	82
Table 6-11: Willing to Adopt Web 2.0 Tools.....	83
Table 6-12: Cuts Money.....	85
Table 6-13: Decrease Staff Work.....	86
Table 6-14: Positive Feedback.....	88

CHAPTER ONE

Introduction

In August of 2006, a new website called Twitter was publically launched. The concept was simple; creator Jack Dorsey simply thought it would be nice to know what his friends were doing at multiple points in the day, and Twitter was born, a website that allowed users to share and update their current statuses with their friends and followers. Since then, the website and its millions of users have helped pioneer the web 2.0 innovation of microblogging, the posting of smaller web logs that appear in reverse chronological order for other users to read (Twitter, 2009). On October 6, 2008, over two years after Jack Dorsey's idea took off, Nancy Scola and Allison Fine posted an idea of their own on the Personal Democracy Forum blog (Scola & Fine, 2008). They believed, with its ability to quickly communicate small individual pieces of information to many users at once, Twitter had the capability to help alleviate the information asymmetry that causes voter suppression in the upcoming Presidential election. If voters were facing problems at the polls, they could post it on Twitter and promptly get tips and advice. If multiple people were having the same problem, organizers could assemble experts to resolve the issue. By November 4, 2008, the blog post had grown into a full movement with multiple organizations ranging from Rock the Vote to the Election Protection Coalition working together to create the Twitter Vote Report service, helping people throughout the country successfully make every vote count (Twitter Vote Report, 2008).

The Twitter Vote Report is just one story among many which illustrate how the Internet's potential to harness collective intelligence is changing the shape of our country. During the 2008 election, the Internet, particularly web 2.0 tools, made waves. In President Barack Obama's campaign alone, over \$500 million in donations, and 13 million email addresses were

accrued(Blue State Digital). However, government is slowly realizing the potential of the Internet outside of campaigns. For the past 20 years, as the Internet has grown, the government's ideas have grown, too. When he entered office, Obama began an open government initiative with web 2.0 tools at the forefront. Websites from AIDS.gov to the EPA have started their own blogs, and the USA.gov portal even has a special section entitled Government 2.0. NASA has created a professional network called Spacebook, so members can communicate more easily, and Data.gov was recently created to provide the public with a "citizen-friendly platform that provides access to Federal datasets"(White House Open Government Initiative). Slowly but surely, various agencies and officials are realizing the potential of what the Internet can share.

Nonetheless, the strides the public sector has made in Internet innovation is still far behind those reached by the private sector. According to studies done by Darrell M. West, the United States has done an excellent job of creating an online presence compared to other countries, obtaining a ranking of 3rd in his 2008 study of 1,667 national government websites in 198 nations. However, compared to the private sector, both federal and state government websites' progress leave much to be desired, particularly in the areas of interactivity, multimedia implementation, and personalization(West, 2008). For instance, 98 percent of corporate websites had audio clips, compared to 40 percent of state websites and 70 percent of federal websites analyzed in West's study. Additionally, 82 percent of corporate websites had video clips compared to 48 percent of state websites and 72 percent of federal websites(West, 2009). The implication of these findings is equally concerning. Highly ranked corporations in West's study such as Home Depot and Walgreens use websites to enhance services to users to increase profits, but government websites are obligated to provide services because it is their responsibility to citizens. The Internet allows citizens to have 24 hour, 7 day a week access to information that

they do not stop needing after federal employees leave the office for the night. Consequently, it is imperative for the government to understand the Internet and its capabilities as a tool.

However, the Internet is an intricately faceted instrument, and new ideas are launched every day. Moreover, unlike corporations, government websites have much more constrained budgets, and because they are working on tax payer's dollars, they do not have the luxury of investing in the latest gimmick, unless benefits are guaranteed. Additionally, with the expanse of information online, it is hard for any government website to choose which tools are worthwhile. As a result, the purpose of this thesis is to analyze a microcosm of what is occurring in e-government, by critically examining the use of websites and web 2.0 tools by Secretaries of State, thereby providing a clearer picture of how best to implement these new advancements.

At first, Secretaries of State websites seem to be a strange focus of analysis, instead of investigating more visited webpages such as the ones created by Senators or Governors, but this focus serves an important function. Currently, 47 states have a Secretary of State. Jobs for Secretaries of State vary by location, but often involve administrating elections, overseeing state archives, and registering businesses. This number of officials who serve similar purposes but do not work together provides a large pool of distinct websites to compare. Even more importantly, Secretary of State websites are service oriented. Higher profile officials such as Governors and Senators are often advocates for policies, and their websites are platforms in which they can try to advance their positions. Although it is important to know what the Governor is doing with the budget, much research on this portion of web 2.0 exists, and with national figures, such as the President, using the Internet to improve transparency, these websites receive more press, so more is known about them. Furthermore, these high profile figures often create their websites with reelection campaigns in mind, and as a result, web 2.0 tools are not only used to enhance

information but also to persuade future voters that they are doing a good job. In contrast, although 35 states have citizens elect their Secretaries of State, these are rarely high profile elections, and in the other 12 states, the Governor or the State Legislature appoints an individual, not the voters. The Secretary of State rarely is trying to convince citizens to agree with a position but instead deals with less partisan issues like voting or registering businesses. Although these services can sometimes have partisan undertones, they still remain fairly universal. For instance, most people agree that every vote in an election should be counted equally. Therefore, an analysis of Secretary of State websites will help provide a better understanding of how web 2.0 tools can help not only persuade but also serve citizen's needs.

In this thesis, I plan to address the following questions. What web 2.0 and Internet services are being implemented by Secretaries of State? How effectively are these services being implemented, particularly web 2.0 tools? Based upon current e-government research, and past content analyses of State websites, I hypothesize that Secretary of State websites have not used the full potential of e-government solutions, but by using Internet tools to increase transparency, communication, and participation, the quality and efficiency of services offered to constituents would noticeably improve. To evaluate the validity of my hypothesis, I analyzed and ranked the 47 Secretary of State websites' function, feature, and web 2.0 presences. Then, through interviews, and public information, I created case studies of five states using web 2.0 tools and five states not using web 2.0 tools to develop a better understanding of the effect and limitations of these services.

In Chapter 2 of the thesis, I summarize the background of the Internet and web 2.0 in government to provide a basis of knowledge for the rest of the paper. In Chapter 3, I evaluate current scholarly research, and the different strategies scholars have used to assess e-government

to date. I conclude that a more broad approach involving both a perspective from citizens and government, as well as a full identification of the features being assessed, is necessary to truly comprehend the value of Internet services. In Chapter 4, I develop and describe such an inclusive methodology. This methodology involves two major components, a survey and ranking of Secretary of State websites, and then the creation of case studies which evaluate the significance of web 2.0 and non-web 2.0 presences. Chapter 5 describes the ranking results and the larger trends found among the 47 webpages. Chapter 6 provides descriptions of the major themes discovered while comparing the five states that use web 2.0 tools and the five states that do not. In Chapter 7, I conclude with a summary of findings, finish with what the trends found on the specific webpages mean for the future of e-government, and discuss how to best research upcoming developments.

CHAPTER TWO

The Development of Government 2.0

Introduction

According to Pew Internet & American Life Project September 2009 survey, 77 percent of American adults use the Internet, and not just for simple activities such as sending emails anymore(Online Activities, 2009). Today, Americans engage in virtual worlds like Second Life, and read celebrity's status updates on Twitter. They buy and sell goods on eBay and Amazon, and donate money with PayPal to charities online, they would have never heard about without the email from their niece Susie. When they wake up in the morning, Americans can check the news on their favorite webpages with their cup of coffee, or watch a television show they missed the night before on Hulu. They can find old friends from grade school on Facebook and compare their latest baby pictures on Flickr. When searching for a job, they can expand their professional connections using LinkedIn. Then the next month, there might be a new website, a new trend that their coworker convinces them they just have to check out.

The World Wide Web has become not only an integral part of America's culture but also an integral part of Americans' lives. For example, according to a June 2009 Pew report, 69 percent of all Americans have used the Internet to cope with the recession. The web provided them the means to search for bargains, jobs, investment strategies, housing options, and government benefits, in light of the economic crisis(Rainie & Smith, 2009). In short, as this example illustrates, the country is becoming dependent on the resources the Internet can provide, and this dependence is not necessarily a bad development. Unfortunately, for a variety of reasons, the government has been one of the most hesitant entities to hop on the bandwagon

when faced with the web revolution, particularly in light of web 2.0 developments. However, the government is slowly catching up. The following chapter will provide background on this growth to better understand e-government's development.

The Beginning: Before Web 2.0

Politics and the Net Begins

In 1985, the gov domain was first introduced as a means of communication, and in 1989, the World Wide Web was created at the European Particle Physics Laboratory in Geneva using Hypertext Markup Language(Eggers, 2005). In 1993, the creation of Mosaic, a graphic program which made the Web easier to use, brought in new users and helped the Internet reach a critical mass(Dijk, 2000). With the creation of this new technology, suddenly a wealth of seemingly unlimited information was accessible for nearly nothing. For those .gov websites it meant a new means of communication(Rash, 1997). Unfortunately, with limited knowledge, lack of perceived benefits, and competing requirements for funding, individual politicians were slow to embrace the Internet. In many ways they were right, Internet users often had poorly supported crude conversations, and additionally were hard to geographically track, but the potential existed(Rash, 1997). The Internet began to grow in popularity, and the different levels of government made different contributions, forever changing the landscape of politics.

Internet Makes Its Political Debut

In the 2000 election, Al Gore was lampooned by comedians and opponents alike for his supposed claim in a 1999 interview in which he said, "I invented the Internet." Taken out of context, this quote damaged his image, but in truth, the expansion of e-government and the Internet is one of former Vice President Gore's most noteworthy accomplishments. Even in his

first years in the House, Gore identified as one of the Atari Democrats, a champion of technology(Miles, 1998). In fact, as a Senator, it was his leadership that propelled the High Performance Computing and Communication Act of 1991, otherwise known as the Gore Bill, to pass(Campbell-Kelly & Aspray, 2004). The bill led to the development of the National Information Infrastructure and the funding of the National Research and Education Network, which stimulated many technological developments including the invention of Mosaic, the very web browser that brought the Internet to so many people's homes. With legislative victories such as this, by the time President Bill Clinton entered office, the moment was ripe to bring the Internet into government. In 1990, there were only 313,000 computers using the Internet, but by 1996, there were close to 10 million(Campbell-Kelly & Aspray, 2004). With such a growing audience and a leader such as Vice President Gore at the helm, the Internet became a key component to the administration's plan to reform government.

In 1993, President Clinton launched an ambitious new initiative to "reinvent government," and Al Gore was designated to lead the movement of shifting the current top-down bureaucracy into a more responsive private business model. The hope was these reforms would make the government not only more tailored to citizen's needs but also more efficient and effective(West, Digital Government, 2005). With its rising popularity and Gore's already established interest, the Internet became an important pillar of this change. Gore hoped that the Internet could act as a new vehicle to connect citizens with government services. This initiative became as the Access America project(Kamensky, 1999). An important component to these efforts was the 1996 passage of The Information Technology Management Reform Act which required all Federal Agencies to better structure their information technology operations,

including a provision for the mandatory appointment of Chief Information Officers(Kamensky, 1999). Additionally, the administration themselves made an effort to create an online presence.

During 1994, the Clinton administration created the first Whitehouse.gov. At the start, this new webpage had very limited features, but as a highly public branch of government, its growth foreshadowed the Internet expansion that would soon follow. In his first term, emails from the public began to be recognized as a legitimate form of communication, and President Clinton created a new position, the White House Director for E-mail and Electronic Publishing. By 1997, President Clinton was receiving an average of 1800 messages a day(Davis R. , 1999). In 1996, Al Gore was the first public official to hold a press conference online(Davis R. , 1999). By 2000, President Clinton's modest webpage had transformed to include press briefings, transcripts of radio addresses, a kid's guide to the White House, and contact information among other features. Following in the White House's footsteps, other Executive offices began to set up websites with their mission descriptions, press releases, and information about services(Davis R. , 1999).

At the same time the Clinton administration began to use the Internet, so did Congress. In 1995, when Newt Gingrich became speaker of the House of Representatives, he promised that "every amendment and every conference report" would be posted online. This transformation was not easy, but by 1995, the House website became a library of uploaded texts of bills. By the 103rd Congress, Representatives began to experiment using email. Meanwhile, the Senate also followed suit and went a step farther by setting up individual member websites. Eventually the House would do so, too(Davis R. , 1999). Websites, new access to information, and emails allowed Senators and Representatives to communicate better among themselves and develop a

new type of home style with their constituents. The feedback became extremely positive. In light of all these developments, state and local government bodies also began to use the Internet to communicate and provide services to their constituents. However, even on the local level, a certain degree of interactivity was missing. It would take political campaigns to pioneer these changes.

Campaigns and the Creation of Web 2.0

Before the Bubble Burst

Like concurrent e-government initiatives of those in office, online campaign efforts were very rudimentary in the nineties. During the 1996 election, the first campaign websites were released. These early websites could most aptly be compared to “electronic brochures.” Only allocated a small budget and run by young staffers with limited political experience, these websites did little to advance campaign strategy(Graf, 2008). At that time, there was limited interaction. Links were considered good networking. For example, during the 1996 presidential campaign, it was exciting that for the first time, all the major political parties linked to their candidate’s webpage(Rash, 1997). Nonetheless, although these webpages had little to offer, they set the stage for 2000, where there were high expectations for the Internet’s growth.

By 2000, there were more potential users and more potential tools. For the first time, the Internet became a vehicle for fundraising. For example, two days after Sen. John McCain (R-AZ) won the New Hampshire primary, online donors pledged more than \$ 1 million to his campaign(Graf, 2008). By May 2000, the Times reported there were almost 7,000 homegrown websites with either Bush or Gore mentioned(Davis, Elin, & Reeher, 2002). Chat rooms took off

discussing questions such as “Should John McCain run as an Independent?”(Davis, Elin, & Reeher, 2002) Particular attention was paid to young voters who had expressed the most interest in the Internet. Additionally, many people were supposedly tuned in. A May 2000 survey found one in eight American households had sent an email to a government official, and one in four Americans had visited a government website. The same survey found 12 percent of those questioned had visited a candidate’s webpage, and 26 percent of American households said they were more inclined to support a candidate who communicated with them via email(Davis, Elin, & Reeher, 2002). Nearly 60 percent of U.S. households had Internet access (Davis, Elin, & Reeher, 2002). However, despite all the excitement surrounding the election, most of it turned out to be hype. The 2000 election was not the Kennedy-Nixon debate of Internet. Although many webpages existed, the sites failed to have much of any impact on the campaign final results, proving them to be a rather ineffective governing tool. Just like other websites that popped with the dotcom bubble, these early campaign and government websites lacked practicality. The problem stemmed from a failure of parties and candidates to actually engage with citizens. In the online world, no dialogue, and no participation existed. This lack of two way communication would change with the rise of web 2.0

New Technology, New Possibilities

After the dotcom bubble burst several technological advances changed the way the Internet was approached. The first innovation that changed the nature of the Internet was the introduction of Internet Protocol (IP), a new way of transmitting packets of information that does not require any “intelligence” to allow messages switched through the network. With IP, services like the old AT&T and their advanced software became unnecessary leading to a power shift towards the user. No longer was there a limit to traffic on the network(Winograd & Hais,

2008). This paved the way for the next innovation, broadband, which allowed users to download larger files faster. The “always on” nature of broadband allowed users to integrate the Internet into their daily activity, instead of spending short disruptive spurts of time online (Winograd & Hais, 2008). As of April 2009, 63 percent of adult Americans had a broadband connection at home, but in 2001, despite broadband being present in less than 10 percent of households, the Internet had improved enough to begin a transition into an interactive world, and the term web 2.0 was coined (Online Activities, 2009).

Web 2.0 Definition and Tools

Today, people often use the phrase web 2.0 to describe the newest Internet gimmick but the term was originally created by Tim O’Reilly, self declared Internet innovator and CEO of O’Reilly Media, to describe the new platform of the Internet that arose after the dotcom bubble burst in 2001. Today, it tends to be synonymous with programs and websites that involve user generated content. Often, these tools will also be called “new media.” According to O’Reilly, a good web 2.0 company can be more specifically defined by the following seven competencies (O’Reilly, 2005):

- Services, not packaged software, with cost-effective scalability
- Control over unique, hard-to-recreate data sources that get richer as more people use them
- Trusting users as co-developers
- Harnessing collective intelligence
- Leveraging the long tail through customer self-service
- Software above the level of a single device
- Lightweight user interfaces, development models, AND business models

Basically, the world of web 2.0 is web programs, services, and sites which use user-generated content to create self-sustaining applications. These competencies can sometimes be understood more easily, by looking at examples of websites from the era of web 1.0 compared to

the new era of web 2.0. Below is a helpful chart created by O'Reilly Media which describes the web 2.0 movement(O'Reilly, 2005):

Web 1.0		Web 2.0
DoubleClick	→	Google AdSense
Ofoto	→	Flickr
Akamai	→	BitTorrent
mp3.com	→	Napster
Britannica Online	→	Wikipedia
personal websites	→	Blogging
evite	→	upcoming.org and EVDB
domain name speculation	→	search engine optimization
page views	→	cost per click
screen scraping	→	web services
publishing	→	Participation
content management systems	→	Wikis
directories (taxonomy)	→	tagging ("folksonomy")
stickiness	→	Syndication

The graph illustrates web 1.0 ideas that enhanced with user-generated content resulted in completely different products. The left side of the table provides examples of programs and tools of measurement, when the Internet was composed of packaged software. The right side of the table shows the web 2.0 equivalent of those measures or programs in the new user generated model. For instance, before 2001, Britannica Online was a place where an individual could find an encyclopedia on the web. This tool was extremely helpful. It made information more accessible. However, Wikipedia took this a step farther. The information on Britannica Online was static, provided by content managers, but the information on Wikipedia is ever changing, provided by open sources. Users publish and edit the information on the website to create a collaborative encyclopedia which attracts 65 million viewers monthly. As of November 19, 2009, this collective intelligence world of reference collected 3,098,648 articles, 18,600,085 pages, 347,604,694 edits, 869,039 uploaded files, and 11,022,605 registered users(Wikipedia:About, 2009). By November 20, these numbers grew. The plethora of sources allows Wikipedia to have information about a range of topics Britannica could never cover, from

the latest Obama speech to a synopsis of a new episode of Lost. On the other hand, there is a trade-off that occurs with the quantity of knowledge; user-generated content is based on trust and consequently is less reliable. This dependency on users is a problem any other web 2.0 tools encounter.

Web 2.0 Tool Box

There are many web 2.0 tools which will be eventually analyzed in this study but there are a few basic forms of new media that are particularly important to know. Blogs are one of the oldest web 2.0 tools and one of the most often used. In its most simple format, a blog can be defined as an online journal, or a web log, where periodic entries are posted in reverse chronological order. Often, these online journals, allow readers to respond to comments. Since their invention, as blogs have become more elaborate, they have become more important to the political scene. Political blogs can be as small as one person journaling his/her feelings or as large as a column on a national newspaper website.

Recently, the most press attracting web 2.0 tools are social networks. According to Danah M. Boyd and Nicole B. Ellison social network sites are defined as “web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system”(Boyd, 2007). Good examples of social networking sites include Facebook, MySpace, and Twitter. This type of website is one of the most useful new media tools for politicians. For instance, President Obama even created his own social networking site, MyBarackObama.com to organize supporters.

Other web 2.0 tools include video sharing and multimedia, photo-sharing, virtual worlds, syndicated web feeds, mashups, widgets, social bookmarks, news sharing/tagging sites, and microblogging. These less well referenced tools as well as blogs and social networks will be further explored and defined in Chapter 4. However, despite many of these new media tools' prevalence since 2001, they did not truly enter the political scene until the 2003 primaries.

Web 2.0 Tools and the Quest for Credibility

Howard Dean and Web 2.0 Potential

Before former Vermont Governor Howard Dean's 2003 bid for the Democratic Presidential nomination, the Internet was viewed as interesting but ultimately ineffectual tool, largely because the first campaign websites tried to attract new or swing voters, but Dean's campaign changed that. Most people who visit political websites are not swing voters but instead active citizens with existing views, therefore, they did not need to be convinced to vote for Howard Dean, instead Dean's campaign run by innovative campaign manager Joe Trippi found new ways to engage them(Hindman, 2009). Early in the campaign, Trippi realized the potential of trade-marking Dean as the candidate of Internet and personal empowerment, reviving democracy one individual at a time(Trippi, 2004). Dean's online campaign actually amassed 640,927 people as Dean Supporters. Additionally, 188,941 of those people signed up to receive notices about meetings from Meetup.com, and 40 percent of those people actually attended a Dean event(Hindman, 2009). From all the Internet excitement, the Dean campaign raised \$20 million, 40 percent of its total receipts, online(Boatright, 2008). In the end, Dean's campaign came to a disappointing finish in Iowa, and many political commentators called it a "dot-com bust," but Trippi viewed it differently. In his memoirs, he concludes, "An amazing

thing happened in the presidential contest of 2004:For the first time in my life, maybe the first time in history, a candidate lost but *his campaign won*“(Trippi, 2004).

Now in hindsight, Trippi’s optimistic view does not seem very far off the mark, the Dean campaign made several important contributions in bridging the gap between politics and the Internet. First, the Dean campaign created a new way to solicit donations with news-pegged fundraising appeals, as used by Moveon.org. By setting short term goals, the campaign was able to attain small repeated donations(Boatright, 2008). Dean also used blogs, more successfully than any candidate before him. In 2003, the Dean campaign posted 2,910 entries on its website and received 312,121 comments(Cornfield, 2005). Some of these comments were inane, but others prompted letter writing campaigns and new ideas such as the “Cheney Challenge” which raised \$500,000 in response to a Cheney fundraising event which only raised \$250,000(Cornfield, 2005). Even the most minor supporter had opportunities to stay connected. The campaign decided to use Meetup.com, an early social networking site, “to take the online campaign offline,” by creating volunteer and networking opportunities for supporters in areas that might not have a large campaign infrastructure(Boatright, 2008). Finally, the online campaign used decentralized decision making, in a hub to hub model letting local campaigns come up with their own unique ideas separate from the national strategy(Boatright, 2008).

All these Internet innovations grabbed the press’s attention. A simple Lexis-Nexis search yielded 1,325 stories in major papers that mentioned Dean’s Internet effort during the six months preceding the New Hampshire Primaries(Hindman, 2009). However, in the end, Dean’s strategy had several critical mistakes, most notably, too strong a focus on extreme party activists, despite more moderate primary voters and too little of centralized organization(Hindman, 2009). This extremism combined with several other political mistakes ended Dean’s run for President, but

not the legacy of his campaign. His campaign taught other candidates relevant new techniques. More importantly, it temporarily put a spotlight on web 2.0 tools that began to give government websites new ideas. Dean proved that the Internet could be more than just an electronic brochure. It could be a forum for participation, and more importantly, a tool to get jobs done. Dean's bid for President was a tipping point, because it did not just illustrate the importance of the Internet in campaigns, but also illustrated how web 2.0 tools and politics could go hand and hand to engage the public in a more interactive governing style. E-government was already well underway, but Dean brought national attention to the potential of e-government 2.0. In fact, even President Bush began to use web 2.0 tools by the time he left office. Clay Johnson, Director of Sunlight labs, co-founders of Blue State Digital, and former member of the Dean Web team, commented, "It was a transformative moment for politics"(Johnson, 2009).

Barack Obama and Web 2.0 Credibility

Howard Dean illustrated the potential web 2.0 tools could have but Barack Obama proved the credibility of such a strategy, by masterly using new technology to help win the 2008 election. Unlike Howard Dean, Obama employed a top down strategy, using the Internet to organize and train supporters in carefully planned strategies. The stronger organizational skills of his campaign reworked what it meant to use web 2.0. With 95 staffers and \$12 million for 2 years, the Obama campaign was able to assemble a new media dream team(Almacy, 2009). Quickly becoming known as Triple O, Obama's online operation made waves. Run by experienced online operative Joe Rospars, former member of the Dean web team and cofounder of Blue State Digital the online strategy firm which helped create the online department for the Democratic National Committee, the team contained many star players(Vargas, Meet the OPOs, 2007). Obama had Emmy winner, Kate Albright-Hanna, running his video team, and he had

Facebook cofounder, Chris Hughes, creating his own personal social networking site (Vargas, Obama's Wide Web, 2008).

The Obama web team took advantage of previously used Internet tools and creatively implemented them in new and exciting ways. In August 2008, Albright-Hanna's team had uploaded more almost 1,110 videos on Obama's YouTube channel, more than 4 times as much as John McCain had on his own video channel. In the end, people spent more than 14 million hours watching Obama campaign related videos on YouTube(Blue State Digital). On BarackObama.com, there was an organizing blog and a donation button, as well as schedules of events, but the gem in the web 2.0 crown was MyBarackObama.com, otherwise known as MyBo. Created by Chris Hughes, this social networking site allowed users to develop a sense of community while participating in the campaign by using blogs, setting fundraising goals, joining groups, planning events and volunteering. On the website, visitors created more than 2 million user profiles, wrote over 400,000 blog entries, posted over 200,000 campaign events for others to attend, and created over 35,000 Obama for America volunteer groups. In the last 4 days of the election alone, these volunteers made more than 3 million phone calls(Blue State Digital). Besides encouraging advocacy, and activism, the Internet movement helped Obama fundraise. The campaign managed to mobilize 3 million donors to make over 6.5 million donations online, raising over \$500 million in donations. Many of these donations were notably in increments of \$100 or less, illustrating the Internet's power to reach out to many small donors at once(Blue State Digital).

Just like Howard Dean's innovative campaign prompted innovative user-generated content for multiple government websites, Barack Obama's successful campaign has trickled into e-government strategy. His bid proved how web 2.0 tools are not only useful but may

eventually become necessary in the years to come. Now as Obama has entered office, he is becoming the first “social media” president, and is using new media to enhance his communication strategy. This press attention on web 2.0 has galvanized local, state, and federal websites that were already using new media tools, and driving government agencies that have not to begin thinking outside the box. Of course, it needs to be acknowledged using these web tools is much easier on the campaign trail than in an actual office.

Government 2.0 Logistical Challenges

The Constraints of Federal Regulations

Campaigns are often leaders in Internet innovation, particularly with web 2.0, because e-elections are much different than e-government. On the Federal level, legal restrictions have greatly stymied web 2.0 goals. Unfortunately, Johnson commented, “The government is using a process to regulate the Internet which was created before the Internet”(Johnson, 2009). The web 2.0 world is about expediency, interaction with multiple sources often with little overview, fast turnover, and the next new innovation. In contrast, the bureaucratic system in the government is about preservation, regulation, consistency, and certainly not the Internet. The Clinton administration helped pave the way for web 1.0 implementation, but the policy changes have not kept pace with the implementation of web 2.0

For instance, the most high profile illustration of this phenomenon can be seen with the difficulties the Obama tech team faced transitioning into the new administration. Government 2.0 is categorized by using many third party websites to provide different services. Before entering office, President Obama’s Internet arm had used software from Google, Blist, Facebook, YouTube, and Salesforce.com(Meritt, 2009). Regrettably upon entering office, using all these

sources was impossible. Many third party websites have legal positions that do not match up with federal law. Early in the transition, attention was gained when the administration had to temporarily stop using YouTube to show videos because of privacy concerns. The issue was that YouTube served long-term tracking cookies to every visitor to the president's blog, even those who did not watch the videos(Kee, 2009). This forced the web team to use services to show videos like Akamai which allowed the videos to come from the White House's own servers(Kee, 2009). With negotiations, the privacy concerns were worked out between YouTube and Whitehouse.gov, so now the White House still has their own YouTube channel, but the process took a while and illustrates how much more complicated using third party sources in government can become(Almacy, 2009). This is an improvement; in the Bush White House, for a long time no third party websites could be connected as a link on the webpage unless their URLs ended in .gov or .mil (Almacy, 2009).

For Federal websites, hiring these third party services can also be a complicated process. Privacy lawyer Mark McCreary explained, first when using third party websites, you need to decide who gets the contracts, which is complicated(McCreary, 2009). According to Almacy, if you are going to open it up to third party websites, you cannot show favoritism. For instance, you cannot just go and hire YouTube, you need to open up for at least three bids and if a company bidding is owned by a minority or a women bidding at the same price, you have to hire those individuals to give them the advantage(Almacy, 2009). Matching legal policies when negotiating contracts can be difficult, too. For instance, according to McCreary, one concern with YouTube the administration had was legal disputes with a Federal website could not be settled in California like YouTube's current terms of use would do(McCreary, 2009). Another concern is advertisements on sites. If YouTube has an advertisement on their website, by

putting their videos up, the White House, for example, is unintentionally endorsing them(Almacy, 2009). Of course, there are also privacy concerns. For instance, McCreary points out if a website is going to collect names, or email addresses, a certain level of security needs to be in place to ensure names do not get sold or disseminated(McCreary, 2009). More specifically according to Clay Johnson, “To ask people log in names, there needs to be a 6 month privacy audit. In a web 2.0 world that is a long time, so you might as well give up and try something else”(Johnson, 2009).

Other less well known laws need to be taken into account when designing a government website, too. According to Section 508 of the Rehabilitation Act, all federal public websites must be designed to make online information and services fully available to individuals with disabilities(Federal Web Managers Council, 2006). According to the Freedom of Information Act, there needs to be a page on all federal websites which includes information about how the public can request information under the Act(Federal Web Managers Council, 2006)(Office of Administration). Many similar requirements designed to ensure, privacy, security, and full disclosure of information for all citizens exist. Although important, these laws can cause problems for web designers.

State and Local Restrictions

Luckily, state and local governments are not obligated to follow all these laws when creating websites, but they face their own challenges. First, even if it is not in the books for every state, there is an expectation of accessibility. Second, without federal websites able to lead the way, smaller government bodies will be making a gamble by trying out new tools. Third, unlike in the private sector, where innovation can be encouraged more, any government website

advancement is being made on tax payers' dollars. The Internet arm of the Obama campaign had 95 web staffers and a budget of 12 million for 2 years, but states do not have the same opportunity. That kind of resources is not available, let alone justifiable in an agency like the North Dakota Department of Transportation. In a 2000 survey, a time when the private sector was putting the web 2.0 movement into motion, 70.3 percent of government officials interviewed claimed that funding was a substantial barrier to e-government implementation(West, Digital Government, 2005). Internet investments have high short term costs and long term pay-offs, but because politicians are only in office for a short period of time, they do not see the benefits.

Additionally, the benefits of web 2.0 interactivity come with costs. Just like federal websites, local websites find user-generated content to be less reliable. For instance, if a government website opens up a blog to comments from the public like many websites currently practice, they put themselves at risk for receiving inflammatory posts. Then, they need to debate what is appropriate to take down and what is inflammatory. Moreover, web 2.0 tools just work better for certain types of agencies than others. In many cases, it makes more sense for federal websites with large audiences to use web 2.0 as a communication tool than it is for a smaller more service oriented website such as a Department of Health webpage. Nonetheless, despite the challenges that all levels of government both big and small face, there have been many online accomplishments that should be acknowledged.

State of Web 2.0 and E-Government

Although America's federal, state, and local government bodies' Internet services are still behind those of many other countries and the private sector, indicating they have a long way to go, many recent strides have been made. Today, even the North Dakota Department of

Transportation website has a Facebook page. In fact, according to the Center for Digital Government 2008 State survey, states are really beginning to experiment with web 2.0 tools in earnest. Their findings summarize among states in 2008, 88 percent use RSS Feeds, 90 percent use webcasts, 73 percent use podcasts, 45 percent use blogs, 28 percent use wikis, 45 percent use mashups, and 50 percent use text messaging(Digital States Survey, 2008). On the Federal level, there are over 80 blogs in various agencies discussing issues ranging from open government to disability resources, and when analyzed these blogs were often found to be as high quality as many other private sector blogs(Mahler & Regan, 2009).

At the State level, some places are more ahead than others. For instance, in 2008, Utah had such an efficient web portal, with over 600 transactions possible online, that Governor Jon Huntsman felt comfortable creating a four day week for state employees as part of the state's sustainability program because even when business hours stopped the public could continue to conduct business. Today, the state's web presence includes 27 unique channels, hundreds of streaming videos, blogs and an online radio. Utah also uses a variety of social media to interact with citizens such as Swivel which connects users with visual charts of state data(Digital States Survey, 2008). The states creative online initiatives both helped the budget, and provide citizens with a new outlet of information and contact with the government.

Similarly, Michigan used e-government to streamline services as part of a recommendation by the Governor's emergency financial advisory. This work has been led by the Business Intelligence Competency Center and their successes have been particularly helpful in these economically trying times. For example, by comparing food stamp records for 429,000 kids against the student database, the government was able to qualify 337,000 children for school lunch assistance without filing a single form. Likewise, using data analysis, the Michigan team

found that many homeless were eligible for but not applying for program assistance. This lack of utilization prompted a homeless initiative, helping at risk families before they lost their homes. Additionally, by comparing day care benefits against wage records, \$17 million in fraud and abuse was detected and addressed(Digital States Survey, 2008).

Moreover, innovation is not just occurring at the state level but in smaller municipalities, too. In a Center for Digital Government 2008 City survey, among the cities which responded 82 percent had webcasts that feature streamed audio and video, 52 percent had RSS feeds, 47 percent had mashups, 31 percent had podcasts, 29 percent had blogs and 15 percent had wikis. Additionally, many of the participating cities took pride in providing transparency to their constituents. According to the results, 94 percent of respondents telecasted their city governing body's meetings. This number was a 14 percent improvement from the previous year's results. Furthermore, 61 percent have blogs that allow comments to entries done by the mayor or other city officials. This number is a 10 percent improvement from 2007(Digital Cities Survey, 2008).

The smaller setting of cities also provides an opportunity for creative initiatives that larger bodies of government such as the White House or even a state website portal might find more difficult to administer. For instance, Houston was "the first city in the country to give its citizens access to the global information highway" by providing SimDesk technology to all its citizens with a library card. With a library card, users could access SimHouston, a web-enabled virtual software application which allowed access to software programs over the Internet, including word processing, email accounts, spreadsheets, address books, calendars, and a file explorer. The program's success in equalizing access to computer services depended upon on a large investment of time and money by the local government. They purchased three million licenses to SimDesk so they could be given to citizens for free, and they spent a great deal of

time marketing and outreaching to the community. By 2003, almost 80,000 users had signed on(Blackstone, Bognanno, & Hakim, 2005). Because of their repsective sizes, where federal agencies often use web 2.0 tools to communicate policy postions and persauade citizens, local and state governments use these new tools to provide services and promote direct interaction.

E-Government and Secretaries of State

Good examples of state agencies which focus on services more than persuasion are the various Offices of Secretaries of State. Although, currently only a small amount of Secretaries are using web 2.0 tools, much of their websites have service components. In 2005, the National Association of Secretaries of State released a report about the status of the three most common Secretary of State services online: voter information, corporate information and UCC Filings(National Association of Secretaries of State, 2005). In it, they found that although many services were now made more accessible by having part of the paperwork online, the services still required mailing or visiting government offices to complete the process. However, a few states did provide full transaction services online. Nonetheless, there were not many who could make this claim, largely because of the legal concerns of the state, security issues, and budgetary restrictions.

CHAPTER 3

Research Challenges

The history of politics and the Internet is much clearer than the history of the evaluation of government websites. This disparity occurs for several reasons. Because web 2.0 and broad e-government citizen outreach initiatives have just begun to make significant advancements over the past few years in America, only limited scholarly research has been undertaken to study the effectiveness of these services. Additionally, researchers have faced the challenge of measuring effectiveness when many services have not been running long enough to create a significant enough body of evidence for analysis. Furthermore, the different types of websites that can be evaluated are too many to count, which limits the practicality of smaller studies. Consequently, there is no one accepted strategy for critically evaluating web services, but some strategies are more effective than others. There are two main approaches: content and comparison analyses and effectiveness analyses.

Comparison and Content Analysis Based Studies

The most simplistic method of analysis is a comparison of the services, or features provided on the website to other websites. For instance, the Center for Digital Government has been helping lead several intensive surveys for various levels of government such as states, counties, and cities, since 1997. In fact, the state surveys are considered important benchmarks for many governments' tech teams. By surveying State chief information officers and senior executives, the Center releases a top 25 list of States. The questions on the survey are designed to cover the gamut of e-government issues and consequently have a broad scope. Everything from green IT practices to web 2.0 services is addressed. These continuous surveys allow the

Center for Digital Government to monitor the progression of websites, as well as their progress compared to other government websites. Then, this information is used by the Center to develop suggestions for e-government best practices(Digital States Survey, 2008).

Darrell West's studies are also excellent examples of a strong comparative approach. Troubled by the multitude of studies on e-government that were too focused on specific websites, West created a set of criteria to score government websites that could be conducted in bulk. This was particularly practical because government websites have different needs than other webpages(Ceaparu & Shneiderman, 2002). For example, privacy, security and accessibility all need to be carefully addressed on government webpages. In his research, West has developed a set of standards for content analysis; this content analysis leads to a score which is a combination of points for features and points for services offered. These standards examine nearly two dozen features including, personalization, interactivity, transparency, PDA access, disability access, language translation, number of online services, privacy, security, and user feedback(West, Digital Government, 2005).

Using this point system, he makes several revealing comparisons. In one study, he compares leading U.S. corporations' websites to state and national government's websites. By doing so, he found U.S. corporation websites have more multimedia, interactivity and personalization features but government websites have stronger privacy policies and disability access(West, Comparing Technology Innovation in the Private and Public Sectors, 2009). In another study, West compares e-government in the United States to other countries and finds, despite being behind in innovation compared to corporations, the United States is ahead of most countries in the world with its Internet presence(West, Improving Technology Utilization in Electronic Government around the World, 2008). Nonetheless, he emphasizes that although the

United States does a good job providing information and to a certain degree services, overall government officials have not made much progress in using the Internet to enhance representation and accountability. In fact, in one of his more innovative tests, West found by sending out a standard question to different government websites and measuring the time of response, that from 2001 to 2003, instead of riding the wave of more interactive innovations online, government officials could not even keep up with emails.

Unfortunately, web 2.0 features are often overlooked in comparison studies. For example, creative tests, such as this email responsiveness experiment, helped West measure how much government makes interactivity a priority in their administration but does not reveal anything about web 2.0. Herein lays one of the biggest holes in West's work. He recommends that government websites need to make interactivity and responsiveness more of a priority but in his parameters for scoring fails to account for any web 2.0 features, the main means today of interactivity on the Internet. Some studies have compared web 2.0 features, but most of them have had smaller focuses which make the data less useful.

For instance, Julianne Mahler and Priscilla M. Regan compared 5 federal agency sponsored blogs to 5 similar non-agency sponsored blogs by looking at the content. They hypothesized that the agency blogs would be mostly used for PR purposes but by looking at the content on both types of blogs between October 2007 and March 2008, they were surprised to find agency-based blogs exhibiting more exchange and controversy than expected (Mahler & Regan, 2009). This study made good use of comparisons but unfortunately, although their findings reveal the potential of good blogs, the conclusions are of limited practicality because their sample was so specific. They only looked at 5 blogs and they were all federal. This leads one to ask several questions. For example, would Mahler and Regan's analysis prove true for a

blog on a city website instead of a federal one? Would their analysis prove true if they were analyzing social network sites instead of blogs? These questions cannot be answered without ore in-depth research. It is a dilemma of specificity that can partly be contributed to the age of web 2.0 tools; since they have not been around for long, not many samples exist for studies. Additionally, many of these studies like Mahler and Regan's work make statements about the amount of features but fail to discuss the effects, because time constrains the visibility of results.

Effectiveness Analysis Studies

The Mahler and Regan study begins to touch upon a second strategy for analyzing websites, effectiveness studies. In the study, Mahler and Regan begin to question what makes a blog useful. They frame the use of blogs for opinion as more positive than the use of blogs for persuasion by governments, but why? One of the biggest weaknesses of current e-government research is the assumption that more e-government services and web 2.0 tools are better. However, this is not always true. Moreover, scholars fail to indentify *who* is benefiting from e-government initiatives. For example in the blog study, citizens might benefit more with posts focusing on opinion than government persuasion, but do the agencies? There are two sides that can benefit from a technologically adept government: government or citizens (although it important to note they are not mutually exclusive).

Government Effectiveness

Some studies have analyzed the effectiveness of e-government from the government's perspective. Many advocates of the Internet believe using web services will not only enhance services but also save money and increase efficiency, but studies have shown this is not always the case. For example, according to a survey conducted by M. Jae Moon, IT practices seem to

only have a minimal effect on government. She found only 171 city governments out of 1,471 believed that e-government initiatives enhanced the overall efficiency of city management. Moreover, Moon noted municipal e-procurement practices seem to have had a minimal effect, too. Only 107 cities saw increased numbers of bids/proposals, only 47 saw improvement of the quality of bids/proposals, and only 28 experienced average cost savings(Moon, 2002).

On the other hand, many studies show optimistic results. For instance, using survey data from city managers in the “bellweather” states of Florida and Texas, Christopher G. Reddick and Howard A. Frank found the Internet seemed to benefit overall management. They write, “There was general agreement that e-government had a positive bearing on the ability of city managers to effectively manage, increase stakeholder involvement, impact needs and collaboration, and address procurement issues”(Reddick & Frank, 2006). However, despite their differences in conclusion both Moon and Reddick and Frank’s studies have a common thread. Even with their positive conclusions, Reddick and Frank found city managers to be concerned about the size of labor force, noting that the addition of e-government did not reduce the amount of staff. This can most likely be contributed to the similar conclusion Moon reached writing, “It is noteworthy that many respondents think e-government practices reduce *time* demands on staff but increase *task* demands on staff. These survey results may indicate that many public administrators perceive that e-government initiatives save time but often demand more technical expertise and skill to staff”(Moon, 2002).

In studies focusing on cost, results are similarly inconclusive; the conclusions need to be taken with skepticism because implementing e-government initiatives are often costly investments that take time to pay off. As a result, research might not pick up on a good idea because the benefits will not become apparent quickly. In a study of state web portal

development completed by Diana Gant, Jon Gant, and Craig Johnson, they found the average cost of developing a state web portal was \$2 million. The price range ran from \$303,250 to as much as \$6.5 million(West, Digital Government, 2005). Returns on such a large investment take more time than most of these studies have had to analyze. Nonetheless, administrators seem to have remained relatively optimistic over the years. According to a survey done by the Council for Excellence in Government National Surveys of Government Administrators, 28 percent of government officials surveyed felt that e-government would produce more efficient and cost-effective government in 2003. Although this percentage seems small it is an 11 percent increase from 2000(West, Digital Government, 2005). As computer use grows, these numbers have continued to grow.

These mixed results make it difficult to draw a conclusion about the effects of the Internet on government. However, in a content analysis of 84 pieces of e-government specific research, Richard Heeks and Savita Bailur found the impact of e-government initiatives was most often viewed as positive, but cautioned taking these results too seriously because of where the data comes from. Many of the best articles were written in IT magazines by IT vendors, and out of the scholars, 15 were involved in the development of the IT initiative they were writing about. Furthermore, the Internet is a very new topic to write about, and as a result, many of the studies out there were done by scholars with no previous experience in the field of e-government research(Heeks & Bailur, 2006).

Citizen Effectiveness

The effects of e-government on citizens are harder to analyze because of the questionable streams of evidence used to reach conclusions. Another one of the often assumed advantages of

a variety of online features is the benefits they provide for citizens, but once again only a few studies actually evaluate those claims. In his research, West uses surveys to help try to answer this question. By analyzing data from surveys done by Hart/Teeter adults in 2000, 2001, and 2003, West finds the general attitude among citizens seems positive(West, Digital Government, 2005). For instance, in 2000, 71 percent believed the quality of government websites they had visited was excellent or good, and 48 percent found it easy to get information about a particular service or agency from a government website compared to only 31 percent who found it difficult. On the other hand, the meaning of these statistics is less clear. Seemingly, the public likes websites for different reasons. In 2003, when asked what they thought was the most important positive thing that may result from e-government, 28 percent said making the government more accountable, 19 percent stressed making government more efficient and cost effective, 18 percent named providing greater public access to information, 16 percent said providing better homeland security, and 13 percent said making government services more convenient(West, Digital Government, 2005). Despite these mostly positive responses, the varying expectations of the last question demonstrate how hard it is for government websites to fulfill expectations. The results exhibit the difficulties of directly asking people about the Internet.

In another analysis, West takes a more indirect and delicate approach. By using the results of a 2000 national survey conducted by the Council for Excellence in government, West found no significant relationship between visiting federal government websites and views about trust, confidence, or government effectiveness. Nevertheless, West conducted a more subtle priming experiment that did show a relationship between websites and confidence. In some of the surveys, people were asked questions about the effectiveness of government first, and in others, they were asked about their opinions on websites first. While analyzing the results of the

survey, West found that people primed with website questions were more likely to believe that government was effective at solving problems. However, the same study found primed citizens were not more likely to believe that e-government was a high priority for the public sector. Similarly in another study, Caroline Tolbert and Karen Mossberger affirm the connection between trust and government websites with their calculations from Pew Survey results in 2001 that showed a positive correlation between the two(Tolbert & Mossberger, 2006 , p. 2006).

Another criticism of recent e-government research is the assumption that *everyone* benefits from websites. As a result, interesting studies have also been conducted in the equalizing effects of online government. Some studies claim that instead of providing a means of increasing democracy, the online world merely repeats and even exacerbates patterns that exist in the real world. Many scholars focus on the limited access to computers and broadband that people who live in more rural areas, who are poor, or of certain races must cope with. They fear that by creating a larger dependency on services online, the government is also creating a digital divide(Helbiga, Gil-Garcíaab, & Ferro, 2006). Other studies address the problems those who are handicapped face when visiting government websites. It is universally acknowledged some websites do a better job of providing help for disabled individuals than others despite the plethora of laws every state and federal website are obligated to follow. Nonetheless, this discrepancy is more of a reflection of budget and technical assistance available to the website creators than anything else(Rubaii-Barrett & Wise, 2008, p. 2009). All these studies focus on different individuals, but they serve as a cautionary note when developing research methodology. When studying e-government, it is imperative to remember that not all citizens interact with technology the same way.

Conclusion

In short, although most scholars are upbeat about the potential of e-government, outside of content analysis, there is little consensus in how to evaluate government websites. Furthermore, research is progressing much slower than the development of the Internet, so areas like web 2.0 often remain ignored. Unfortunately, very few good studies are comprehensive, either. Some look at the effect of Internet on citizens, and some look at the effect of Internet on government, but very few studies look at the effect on both. Moreover, those studies that do try to touch upon all angles rarely define what specific type of website they are analyzing. These conditions are difficult criteria to fit into one investigation, but a more inclusive approach of study that contains both content analysis and a deep look at the effects on both citizens and government would provide a much more thorough picture. Likewise, the addition of a web 2.0 focus will provide a much needed update to the material being studied. It was these goals that provided the inspiration for this study's research design.

CHAPTER 4

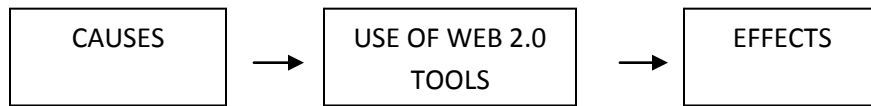
Methodology

One of the greatest problems past web 2.0 research has encountered is its limited scope of analysis. For instance, a study might do an excellent job of showing the Department of Transportation's website increases minority confidence in the government, but without analysis of the tools used on the website, such a study has minimal potential for practical application on other websites. In contrast, another study might do an excellent job of describing every single tool used on a California webpage but without a thorough analysis of the effects of these tools, a government agency in Nebraska will be hesitant to apply these new ideas without evidence of their benefits. In short, in order to be truly pragmatic, research about web 2.0 tools needs to be done holistically, but this presents new challenges. Research of this nature cannot go as deeply as a more limited but less practical set of questions allows. Consequently, the methodology of this thesis begins with a less specific but much more inclusive method of analyzing web design and web metrics, and then uses this information to complete comparative case studies on a smaller sample of websites to compensate for the less in-depth and detailed preliminary analysis.

I have drawn upon the strengths of multiple previous studies to create a thorough process of data collection that can be divided into two distinct sections. The first section focuses on surveying the state of the current web design of Secretary of State websites according to three components: features, functions, and web 2.0 tools. The second section focuses on comparative analysis of the most web 2.0-friendly websites and websites that do not use web 2.0 tools. The following diagram in Figure 4-1 illustrates the underlying "model" that guided the collection and analysis of information about the selected websites. This diagram is meant to convey the fact that I am centrally interested in defining a number of variables that measure characteristics of

Secretaries of States’ websites, particularly their use of so-called Web 2.0 features. Then I am interested in understanding why some states have invested more heavily in the use of these features – i.e. I am interested in the “causes” of decisions to use these web tools and technologies. And I am interested in understanding what differences these tools and technologies make – i.e. the effects or consequences of using these tools.

Figure 4-1: Underlying Model Guiding Analysis of Secretaries of State Websites



Section 1: Web Presence Survey

The first portion of analysis focuses on discovering, with a fairly broad approach, the quality of web design that Secretaries of State are currently implementing. Since at this point in time, there is limited use of web 2.0 tools, and I did not want to make the assumption that all websites that use web 2.0 tools are well run or effective, I not only analyzed the use of web 2.0 tools on Secretary of State websites but also the general quality of the web design on each page. To do so, I looked at three different elements of the 47 Secretary of State websites (Alaska, Utah and Hawaii do not have Secretaries of State and therefore were not part of the sample). These three components were referred to as features, functions, and web 2.0 tools. Because my paper is about the use of web 2.0 tools rather than the Internet as a whole, the final rankings of each state, which narrowed down the sample size for the second section, are centered upon the web 2.0 component. However, the other two components are important for the case studies in the second section, as well as aiding in drawing some larger conclusions, and were therefore still

ranked. Each component was analyzed separately with a slightly different strategy. Originally because webpages are always changing and updating, I planned on using the Internet Archive to access the most updated July 2008 Secretary of State website for each State to maintain time as a constant within the study. However, because web 2.0 tools are such a new phenomenon, and many Secretaries of State only had minimal time in office in July 2008, analysis was instead conducted between January to February 2010 with a final update occurring the last week of February for all the websites to keep time as constant as possible.

Component 1: Features

By definition, the features parameter was devised to evaluate the scope of content and access to that content on Secretary of State websites. Based upon a strategy successfully used by Darrell West (Digital Government 2005) to analyze government websites, I surveyed all 47 webpages for 24 features. Several additional features were also added to West’s original list based upon Webcontent.gov, the Federal Web Manager’s website designed to promote best practice guidelines, but many of the following definitions are those that West originally used. Some of the features West used were not included because they lacked applicability for these particular websites or were not feasible to complete. Table 4-1 provides the list of features that were scored.

Table 4-1: Website Features Coded in the Analysis, and Their Definitions

Feature	Definition
1.Publications	A copy of some printed or public work or research is available to read or download on the website. This category includes new releases, journals, reports, studies, laws, or constitutions. Often major reports are in PDF format. These would count as publications.
2.Databases	A structured collection of records or data is available on the website. This can vary widely from statistics, charts, data, to actual databases (which are like search engines except for that they are customized to retrieve specific information rather than search the entire website).

	Databases are found in the statistics, information, or publications section of webpages.
3.Audio clips	At least one collection of sounds in some format is accessible on the website. Any sound file whatsoever, whether it be in the form of a speech, radio show, website welcome, or music, such as a state song or national anthem. A link to YouTube or other video sharing websites was counted as audio clips.
4.Video clips	At least one short video presentation in some format is accessible on the website. Examples are televised speeches/events, department commercials, picture tours, and website welcome. Could be a video clip or example of streaming video. PowerPoint presentations are not included as video clips. A link to YouTube or other video sharing websites was counted as video clips.
5. Foreign language access	Text is available in a language besides English on the website. Can be a webpage entirely in a non-native language, a link to language-translating software like Babel-fish, or having publications in other languages.
6. W3C disability access	Meets W3C guidelines. To evaluate this, West used the website http://www.cast.org/bobby to run evaluation test. However, this website is not available anymore, so instead W3C is scored if a policy is either clearly labeled or available to read somewhere on the website or any mention of a W3C policy exists.
7.Privacy policies	A privacy policy is either clearly labeled or available to read somewhere on the website or any mention of a privacy policy existing.
8.Security policies	A security policy is clearly labeled and available to read somewhere on the website or any mention of a security policy existing.
9.Allowing digital signature on transaction	Since many services where digital signatures appear are unavailable to web visitors to just look at, allowing digital signatures was scored based upon the mention of a policy somewhere on the website.
10. Email contact information	Email contact information is clearly displayed somewhere on the website.
11. Areas to post comments	An area where users are able to post questions or comments which will be read by a webmaster or other government employee is present somewhere on the website.
12. Option for email updates	Users can sign up somewhere on the website to receive regular email updates.
13. Allowing for personalization of the website	Users can change the visuals or organization on the website or can pick favorite parts of the website that will be featured more prominently. Can customize website to your particular interests.
14. Office phone number	Office phone number is displayed somewhere on the website.
15. Office address	Office address is displayed somewhere on the website.
16. External links to other sites	At least one link to another website is posted somewhere on the website.
17.Toll-free phone number	Toll-free number is displayed somewhere on the website.
18.Technical assistance	There is a help or technical assistance area on the website for users to request assistance if something is not working on the website.
19. Frequently asked questions	There is a FAQ or other question and answer formatted section somewhere on the website.
20. Search capability	There is some search capability present on the website on which users can type in what they need to find.
21. Push technologies that automatically send information to recipients	A technology that automatically sends information to recipients is present.
22. Agency name displayed on every page	On every part of the website the agency name is prominently displayed.
23. Allow for visitors with slow connection speeds	The html pages are under 50 KB.
24. Subject index or site map	There is either a site map or subject index to guide users to the services or sections they would like to visit.

A point was awarded for each feature the website contains. Each feature was only worth 1 point, and if it was not present on the website it was worth 0. The highest a website can score is 24, and the lowest is 0. All parts of the website were analyzed not just the homepage. Therefore, the scores also included links to secondary websites run by Secretaries of State such as voting webpages. This point system is an extremely simplified method of analyzing the websites, but it provides a frame of analysis that could cover a broad scope of sites.

Component 2: Functions

The functions portion of the evaluation provides a picture of the services offered on each website and the extent to which citizens can interact with each of these services. To analyze this, I developed a strategy based upon the methods used in the most thorough analysis of Secretary of State websites to date, which was completed by the National Association of Secretaries of State (NASS). In this analysis, the paper defines 4 stages of “e-development.” E-development a term created by Gartner Dataquest to describe the process by which e-government websites grow to provide services and interact with citizens. The four stages are the presence stage, the interaction stage, the transaction stage, and the transformational stage. Below are explanations of each stage:

PRESENCE STAGE→ Internet provides information online in static form (example: address of office).

INTERACTION STAGE→ Visitors to a site can search information, download forms or access links to other relevant sites (example: download voting registration form). While many critical services can be accessed online, completion of the transaction requires mailing or delivering to the appropriate office (sometimes called print, review, send).

TRANSACTION STAGE→ Alleviates a citizen's need to make an office visit.

Citizens/Customers can complete services entirely online (example: can file UCC forms online).

TRANSFORMATIONAL→ Some attributes of this stage are wireless access, enabling sites to push government information to citizens and robust customer relationship management (CRM) tools. Inherent to the transformational stage is a redesign of government office workflow and business processes.

In the NASS report, these four stages were used to analyze the status of UCC filing, voter registration, and corporate information online. In each state, the services were surveyed, and a stage was assigned (National Association of Secretaries of State 2005). I took a slightly different approach which was more relevant to my research. Some Secretaries of State are obligated to provide help for all three of these services, but some provide more services and some provide less, too. Therefore, instead of looking for specific services, I surveyed each website for any services offered, capping the amount of services at ten because if a website offers more than ten services, the website may become too confusing for the average user. Of course, UCC filings, voter registration, and corporate information will be included in state profiles if these services are offered. I defined a service as a task that involves a transaction of paperwork that without the Internet individuals would need to go to their Local County or State office to complete.

Additionally, since the 2005 NASS report showed most services either at the interaction or at best the transaction stage, I only looked at services in these two stages because from initial research, it was clear that no state had undergone enough massive changes in organization to become transformational over the past five years. Currently, there are many services still at the presence stage but these would be too prevalent to count, and at this point in time, are not very notable. Moreover, much of the services that would be ranked as being at the presence stage will

be accounted for in the features component of their rankings. No website in the original NASS report was at the transformational stage and, at this point, it is unlikely that this had changed. Consequently, looking at only the interaction and transaction stages should keep the results more relevant. For every service at the interaction stage, the state will be given 1 point, and for every service at the transaction stage, the state will be given 2 points. This assignment of 1 versus 2 points was arbitrary but significant because the assignment allowed states with more services in the transaction stage than interaction stage to achieve higher rankings. The highest score in the function category of the web design is 20 (the website has 10 services which are all at the transaction stage) and the lowest is once again 0 (the website has no services in either the interaction or transaction stage). Out of the three different parameters, the function rankings were viewed with the most skepticism because different Secretaries of State have different duties which enable them to provide different services. Consequently, not every Secretary started out on even footing and therefore, a low function score is not necessarily a sign of a poorly designed website.

Web 2.0 Tools

The last section analyzed is the simplest but perhaps most important. Based upon a list of web 2.0 tools created by WebContent.gov, I surveyed each website and gave one point for every web 2.0 tool used. If a website uses more than one distinct tool that fall in the same category, it received points for each individual tool. For instance, even though MySpace and Facebook are both social networking sites in one category on the WebContent.gov matrix, a website that used both would get two points in the social network category, not one, since they are two distinct tools (Federal Web Managers Council 2009). Consequently, there was no

maximum score in this component, but the State totals should not be too high because of the lack of web 2.0 tools currently being implemented.

Table 2 shows the matrix, developed by the Federal Web Managers Council in 2009 as a guide for federal agencies considering the addition of web 2.0 tools to their websites, which will be used for categories of web 2.0 technologies (Federal Web Managers Council 2009). This matrix is helpful because it not only includes the list of the type of tools I am searching for, but it also provides the definitions I will be using for each category. As the table summarizes, I will be looking for implementation of blogs, wikis, video sharing, photo sharing, virtual worlds, social networking sites, syndicated web feeds, mashups, widgets, gadgets, pipes, social bookmark and news sites, microblogging and presence networks. Table 2 also provides excellent examples of each tool on Federal websites and expands upon the original definitions to explain each tools potential in government. For instance, the table explains blogs can be used to give a human face to an agency.

Table 4-2: Web 2.0 Technologies and Their Applications

Matrix of Web 2.0 Technology and Government

Technology	Simple Definition	Examples	Opportunity/Potential in Government
Blogs	Journal or diary with social collaboration (comments)	33 federal agencies have public blogs , USA.gov government blog library , Webcontent.gov advice, GovGab.gov	Govt info to new audiences. Puts human face on govt using informal tone. Opens public conversations. Surface issues & solve them.
Wikis	Collaborative authoring & editing	GSA Collab Environment , Core.gov, MAX, NASA , US Courts , Intellipedia, PTO, Diplopedia, PeaceCorps, Utah Politicopia	Workgroup or public collaboration for project management, knowledge sharing, public input. Contributions to 3 rd party sites e.g. Wikipedia
Video Sharing (and Multimedia)	Videos, images, & audio libraries (YouTube, AOLVideo, YahooVideo, tubemogul, heyspread...)	USA.gov Multimedia library , NOAA & NASA YouTube , Coast Guard, CA & VA YouTube Channels , Americorps contest , Tobacco Free Florida contest	Public outreach, education, training, other communication for "connected" and on-line audiences. How To videos & audios to improve service and achieve mission.
Photo-Sharing	Photo libraries	USA.gov fed/state photo libraries , LoC & USGS galleries w Flickr API , EPA contest	Cost savings potential. New audiences. Awareness.
Podcasting	Multimedia content syndicated out for use on iPod TM, Mp3 players & computers	White House , NASA , USA.gov federal podcast library , Webcontent.gov , Peacecorps, Census daily podcasts	More ways to get message out. Build trust with conversational voice. Use for updates, live govt deliberations, emergencies, how-to messages
Virtual Worlds	Simulations of environments & people (Webkinz, Club Penguin, Neopets, Stardoll, Whyville, Second Life, Active Worlds, Kaneva, ProtoSphere, Entropia Universe, uWorld)	NASA, NOAA, CDC in SL & Whyville, VA, Natl Guard, Energy , DoD, National Defense Univ Federal Consortium for Virtual Worlds , Real Life Govt in 2nd Life Google group	Public outreach & other communication for kids and niche Internet audiences. Virtual Town Halls, Education, Training. Ability to bring people together worldwide for meetings, lectures, etc.
Social Networking Sites	Connecting people globally	EPA Facebook group , NASA Colab , USA.gov Facebook page, MySpace, LinkedIn	Intranet use to cross internal stovepipes. Cross government coordination. Public communities. Viral impact. Knowledge mgmt. Recruitment. Event announcements.
Syndicated Web Feeds	Automated notifications of frequently updated content (think RSS)	USA.gov Federal RSS Library, NOAAWatch	Do more with RSS, XML/Web feeds. Expand reach. Pull content together across government. Authoritative source. Reduce duplication.
Mashups	Combine content from multiple sources for an integrated experience	USA Search , USGS, NASA, EPA, Virtual Earth , Google Earth , Google maps	Lots of potential. Improved govt reach, service, usefulness, and functionality. Integrate external data. Get licenses, stay vendor neutral. Make content available to others who create mashups
Widgets, Gadgets, Pipes	Small applications & code in Web pages or for desktop use	FBI widgets , Veterans Affairs, Census Population Clock & NASA Planet Discoveries Desktop widgets	Increase awareness, use, and usefulness of .gov sites, information, and service. Bring content to the user's home page (iGoogle, netvibes, etc)
Social Bookmark & News (Sharing, Tagging) Sites	Ways of sharing content with others	USA.gov , NASA , Govt blogs , Digg , Delicious Technorati AddThis	Increase the popularity and use of .gov pages, information, and services. Viral marketing.
Micro-blogging. Presence Networks.	Form of blogging which allows brief (Instant Message size) text updates.	Twitter, Jaiku, Cromptel, Pownce, NASA Edge, USA.gov, GovGab, Univ of Mich	Seek input. Broadcast msgs: emergencies, news, announcements. Real time reporting. Recruiting.

July 18, 2008 Bev Godwin, USA.gov and Web Best Practices, GSA Office of Citizen Services

Final Rankings

The results of each component's analysis were used to create four rankings for every State. The analysis produces a features ranking, a functions ranking, and a web 2.0 ranking. Additionally, each state is ranked by a total score, based upon the sum of the features, functions, and web 2.0 scores. A sample score sheet that was used to collect the original data is provided in Appendix I. These three rankings compose a state's web presence profile, which were used later in the analysis to select states for the subset that would undergo closer comparison.

Section 2: State Case Studies

After the first section of analysis was completed, a more in-depth look at individual websites was undertaken to create case studies to provide a deeper understanding of each websites' web presence, particularly web 2.0 tools. The primary means of collecting information for these case studies was done by interviewing the Secretary of State Offices. All 47 Secretary of State Offices were contacted, and slightly less than half responded. The interviews were conducted with a variety of individuals ranging from press secretaries to actual Secretaries of State. The interviews were designed to discover what causes the development of web 2.0 services, what the effects of the development of these web 2.0 services have for both Secretary of State Offices and citizens, and how Secretary of State websites with web 2.0 tools compare to Secretary of State websites without web 2.0 tools. In this portion of research, web 2.0 tools serve as both a dependent and independent variable. As depicted in Figure 4-1, the causes of influences on web 2.0 development serve as the independent variable in the first question, and the effects of the use of web 2.0 tools serve as the dependent variable in the second question.

Although, information accrued during all interviews was used to reach general conclusions, some states were analyzed more closely. From the states interviewed, a subset of ten states was selected. Five of the states received web 2.0 rankings in top half of the sample and five of the states received web 2.0 rankings in the bottom half of the sample. Since more than five states received a web 2.0 score of zero, to pick the five states from the bottom half of the sample, the three other scores were taken into account. States with both high and low rankings in the other scores were chosen to reflect the variety of quality that websites without web 2.0 tools experience. These two groups were compared.

A large portion of the interviews were conducted with members of Secretary of State Offices participating in the National Association of Secretaries of State Winter 2010 Conference during January 29 to February 1, 2010. Several interviews were conducted by phone. A list of the individuals who were interviewed on the record, their respective states, and dates of interviews, is found in Appendix II. A predetermined list of questions was used for every State, but because each State's experience with the Internet varied, the answers and path of questions varied. Additionally, because several interviews were conducted in a short time frame or with individuals not familiar with every facet of technology, some questions were skipped. Many of the questions developed are based upon Webcontent.gov best practices guidelines for government websites. Webcontent.gov is a website sponsored by the General Service Administration and run by the Federal Web Managers Council. The site is designed to help Federal agencies run their webpages and enhance their online presences, while still following government regulations. Below are the interview questions:

1. How high of a priority is the website in your office?
2. How large of staff works on the website?
3. What part of the budget is allotted to the website? Has the size of the budget ever constrained you?
4. Is there anything you would like to see on the website but cannot provide because of the websites' internal capacity?
5. Are there any specific state laws that constrain or govern what is on the website?
6. How often is the website updated? Do you periodically assess details of the website? Is there a process of regular editorial review?
7. If a problem with usability occurs, how long does it take to address the issue?

8. What information do you have about the average visitors for your website? Do you know how many visit the website? How many people are repeat visitors? How many people receive specific communications (i.e. email list, news updates)? What are the demographics of the users?
9. What do you think citizens want to see on the website?
10. How often do you receive communications on your website?
11. How often are publications downloaded? How often is the webpage updated?
12. How do you think your website compares to other States?
13. Have you conducted any studies on the perceived effectiveness of the website? Is this information available for analysis?
14. What has been the greatest success of the website? What has been the greatest challenge?
15. Has the office experienced any substantial benefits like decreased work or savings because of the website?
16. What do you know about web 2.0 tools? How important do you think they are to the success of the website? [If state does not use web 2.0 tools] Would you consider ever using them?

In addition to answers to these interview questions, information was collected from several other sources. I interviewed experts on web 2.0, new media, and e-government, talked with vendors at the Winter Conference, and used previously conducted survey data. The quantity of posts on many social websites was also investigated. Additionally, the number of followers and visits to some of the websites were recorded. Moreover, even though the primary focus of the second part of the analysis was web 2.0, the scores and rankings from the two other components were used to develop a better understanding of each

website. Once enough information was accumulated, larger conclusions about the implications of web 2.0 tools on Secretary of State websites are drawn.

CONCLUSION

In conclusion, by using a two step approach, I use the special case of Secretary of State websites to illustrate the current state of the use of web 2.0 tools by state government agencies. To do this, I surveyed the current features, functions, and web 2.0 tools being used and then used this data to begin more specific comparative studies on ten of the top and bottom web 2.0 using states.

CHAPTER 5

Features, Functions, and Web 2.0 Tools

Forty-seven Secretary of State websites were successfully analyzed according to the three scoring systems, features, functions, and web 2.0. These scores revealed the average Secretary of State website often provides basic services but fails to offer personalization. The scores also revealed a broad range of quality of websites, with different states focused on different goals. A list of full state scores can be found in Appendix III.

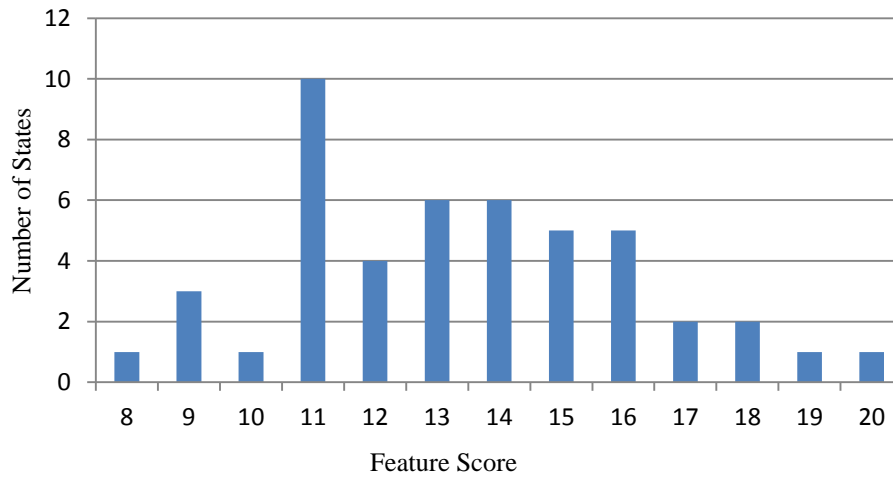
Features

The features score was one of the most revealing measures of overall website quality. When investigating, some websites were found to not contain any functions or web 2.0 features to score but could still be considered visually pleasing and user friendly. However, a low feature score tended to reveal a lack of investment in the website. Nonetheless, in general, even the lowest scoring websites contained the most critical information. Moreover, unlike the functions and web 2.0 scores where there was more of a range, the features scores were less varied. The greatest difference between low feature scoring websites and high feature scoring websites was the amount of nonessential but personalizing or engaging features such as video, audio, and areas to post comments.

The range of scores varied from the 8 to 20 out of 24. Figure 5-1 illustrates the full distribution. Indiana was the only state to reach a score of 20, which means it contained 83 percent of the characteristics, and North Carolina was the only state to reach a score of 8, which means it contained only 33 percent of the characteristics. Overall, the average score was 13.5,

which translates to each website on average containing 56 percent of the characteristics used in the scoring system.

Figure 5-1: Distribution of Feature Scores



Online Information

At first glance, the feature scores seem disappointingly low, but upon closer analysis, it becomes clear that websites scored lower because they tended to include the more essential features, but they lacked the extra features more advanced websites have come to include. Consequently, the basic information was strong, even if opportunities to engage users were overlooked. For example, as Table 5-1 illustrates, all of the Secretaries of State did an excellent job of providing information online through traditional methods, but they failed to make use of newer more interactive multimedia techniques.

Table 5-1: Online Information

Feature	Percent of Secretary of State Websites Implementing Feature
Publications	100%
Databases	97.8
Audio Clips	29.8
Video Clips	21.3

Every website, even the lowest scoring, included some type of informational publication, and only Virginia did not have any type of database. Out of 97.8 percent of Secretary of State websites containing some type of database, many of the implementations were particularly innovative, including databases in which constituents could find patents, search state archives, or look up information on lobbyists. Often, these databases were also cited as expensive to create but a good investment because they were visited often and saved work for employees. For example, Wisconsin Secretary of State Doug Lafollette described the process of convincing the state legislature to provide with the funds for moving all the municipal records as hard, and the actual process of digitalizing everything as long and arduous. However, he listed the municipal records database as one of the website’s greatest accomplishments, saving work for employees and attracting users(Lafollette, 2010). The type of publications on each website also varied a great deal depending on the particular Secretary of State’s duties, and consequently, included information on everything from voting to organ donation. Moreover, these publications and databases were often easy to find. They, too, were often described as work saving investments by Secretary of State Offices. Instead of wasting time explaining rules, regulations, or policies, many offices lauded being able to direct users to recently added publications on their websites. For instance, Pennsylvania Secretary of State Director of Public Relations K. Kevin Murphy

commented, “The press still calls but now we can direct them to information on our website for stories...like if they are writing a story about a doctor, they can now check the status of his license online...it helps us disseminate information faster”(Murphy, 2010).

In contrast, although many of the websites used images and photographs on their pages, very few used multimedia features to provide information. Only 29.8 percent used audio clips and only 21.3 percent used video clips. With the rise of web 2.0 savvy users accustomed to more interactive websites, this lack of multimedia has the potential to detract from overall web quality. Nonetheless, the exclusion of these features does not necessarily detract from the overall quality of information being provided because of the breadth of publications and databases present on some of the websites which did not use multimedia was still high. Looking at the use of multimedia from an accessibility standpoint, this lack of video and audio clips might be a result of the pressure to make sure these additional features provide equal access to everyone. For instance, video clips might not be accessible to less wealthy people with slower browsers, to people who do not speak English fluently, or blind individuals who cannot see the pictures. However, normally, the use of such multimedia features on government websites are accompanied by precautions to be inclusive or to at least offer equally good alternative sources of information because of state regulations.

Public Outreach and Communication

Similar to the limited types of media used to convey information, nearly all Secretary of State websites do a sufficient job of providing basic contact information but fail to create two way channels of communication for visitors. Because of the plethora of responsibilities Secretaries of State must handle on their websites, navigation can sometimes be difficult for

users searching for the answer to a single question. Consequently, a two way channel of communication in the form of push technology, email updates or an area to post comments allows users alternative means to access this information more easily by specifically requesting it. Furthermore, many of the websites fail to use personalization features to let users tailor the way information is delivered to their needs. On a website that is designed for both corporations and citizens, such as many Secretary of State websites are, the ability to bypass unrelated information can be invaluable. With personalization features, a business could go directly to the portal where they can file documents or a citizen can go directly to the election webpage. Additionally, even simpler personalization features can greatly increase access. For example, websites with options to change text size allow users with poorer vision to navigate information more clearly.

Table 5-2 illustrates this disparity. Office addresses, phone numbers, and email contact information tended to be highly accessible. 97.8 percent of Secretary of State websites had their office address posted, and 95.7 percent of Secretary of State website had their office phone number posted. Email contact information was less likely to be posted, but still a significant 83.0 percent of Secretary of State websites made the information accessible. Often these types of contact information would be listed with multiple emails and phone numbers for different specific needs. Only 25.5 percent of the websites had a toll-free phone number listed on their webpage, but this small percent was more often a consequence of the nonexistence of such a number, not the web design.

On the other hand, Table 5-2 also illustrates how the more engaging if less necessary ways of keeping visitors informed were far less prevalent on the webpages. Only 23.4 percent of Secretaries of State provided an option for email updates. A minimal 14.9 percent of websites

implemented push technology. No more than 23.4 percent of websites included any type of personalization feature to improve delivery of information, and just 19.1 percent of Secretaries of State allowed users to post comments signifying a lack of two way communication between Offices and citizens. All these low percents are missed chances to increase contact with constituents, thereby improving relationships and quality of information dispersion. Nevertheless, because basic contact information is readily available, if users do need a prompt response to a question, a means of communication is present. This is imperative.

Table 5-2: Public Outreach

Feature	Percent of Secretary of State Websites Implementing Feature
Office Mailing Address	97.8%
Office Phone Number	95.7
Toll-Free Phone Number	25.5
Email Contact Information for Office Individuals	83.0
Option for Receiving Email Updates	23.4
Push Technology	14.9
Areas to Post Comments	19.1
Allowing for Personalization	23.4

Accessibility and Security

Past studies have shown government websites to score highly in accessibility and security because federal and state laws require them to provide a safe and equal environment, but accessibility and security features' presence was not as strong as expected in the analysis of

Secretary of State websites. However, this lack of high scores can partly be contributed to the limited methods of measurement feasible for these assessments. There were three different types of accessibility. W3C disability policies are designed to make government websites accessible to handicapped individuals with text only versions, and compatibility with nonstandard devices and browsers. This type of accessibility was the hardest to test because of the unaffordable cost of equipment necessary to test accessibility standards, so in this study, a state was awarded points for accessibility when some type of policy was visible on the site. Foreign language access means part or the entire website is available in multiple languages. To test accessibility for users with slower browsers or dial-up, the size of each website was recorded. Any website larger than 50 KB limits the type of users who can visit the webpage. Security policies and privacy policies were also awarded points. Points for all these features, except language accessibility and size of website, could only be awarded if a policy was clearly stated on the webpage. Unfortunately, this method of scoring is fallible because websites still could be following strict W3C, security, and privacy policies without posting the actual rules on their webpage for users to see. However, awarding points for visible policies was the best method to use with limited resources. Table 5-3 shows the varying results of these scores.

Table 5-3: Accessibility and Security Policies and Practices

Feature	Percent of Secretary of State Websites Implementing Feature
Foreign Language Access	23.4%
W3C Disability Policies	42.6
Privacy Policies	70.2
Security Policies	23.4
Allow for Visitors with Slow Connection Speeds	95.7

As Table 5-3 illustrates 70.2 percent of websites clearly displayed a privacy policy, but only 23.4 percent displayed any type of security policy. Meanwhile, 42.6 percent of Secretary of State websites displayed a W3C disability policy. However, it is important to note that this is a misleading number because probably many of the websites were handicap accessible and just did not have any policies officially displayed on their websites. On the other hand, the low 23.4 percent of Secretary of State websites with foreign language access is an accurate reflection of the small amount of websites with any foreign language or translation aids, because this percent measures the quantity of webpages with actual foreign language access not just websites with foreign language policies officially written out. This lack of language help is concerning because of the large quantity of important information new citizens might need to access on Secretary of State websites such as voting guides, and information about getting a driver's license. Fortunately, despite of the lack of foreign language accessibility, most Secretary of State websites' designs, 95.7 percent, are accessible to people with slow connection speeds and dial up. This is important because many people in rural areas, or with smaller incomes did not have technology available to them to use faster connection speeds.

Content Navigatability

Features which aid users navigate content were generally present on most Secretary of State websites. Content navigatability features are particularly imperative for Secretary of State webpages because of the disparate information that is often found on Secretary of State websites. Secretary of States have a variety of duties and consequently a variety of visitors. One minute, one visitor might be a college student trying to learn about voter registration while simultaneously, another visitor might be a lawyer for a corporation filing a Universal Commercial Code (UCC). Meanwhile, a third visitor might be a senior citizen trying to register a motor vehicle. As a result, features such as a search function become critical to ease of website use. In fact, lack of these features commonly acted as a weathervane, indicating a lower quality webpage. Some states consistently scored higher than others in these categories. Table 5-4 shows the final percent for each feature.

Table 5-4: Content Navigatability

Feature	Percent of Secretary of State Websites Implementing Feature
Search Capability	80.9%
Frequently Asked Questions	70.2
Technical Assistance	55.3
Subject Index	27.7
Agency Name Displayed on Every Page	95.7

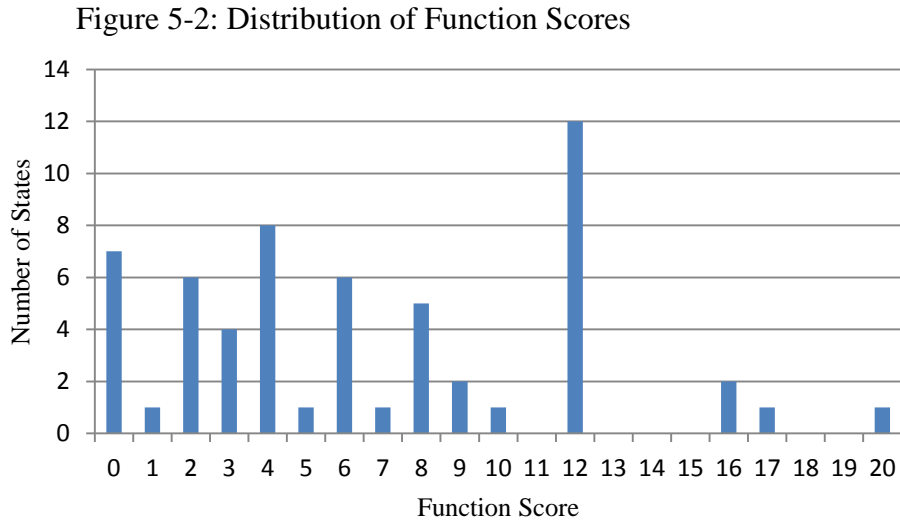
Nearly every website, 95.7 percent contained the agency name displayed on every page. Only the most rudimentary designed websites were missing such headings. Most websites, 80.9 percent had a search capability to help users navigate the various pages. Most of the search tools

allowed users to just search the specific Secretary of State website, some allowed users to also search the rest of the specific state's government websites, and some allowed users to search of information in various databases. A more in-depth study of the efficiency of search tools would be revealing. 70.2 percent of Secretaries of State also included FAQ sections at some point on their websites to simplify information. However, only 27.7 percent, usually the best organized or largest webpages, included a subject index. Surprisingly, only 55.3 percent of websites had any type of tech help, an easily improved area. Tech help is important not only for users but also for the offices because without it, users cannot report technical difficulties to be corrected as quickly. While, investigating these features, it became clear that it would be also worthwhile to assess the presentation of Secretary of State websites in the future, too, because visual effects strongly influence users' reaction to data. Unfortunately, the characteristics for assessment had already been created before this additional category could be added.

Functions

One of the most unique aspects about Secretary of State websites is the collection of services they all provide. The average individual is not likely to know a Secretary of State's name, but he or she is likely to visit a Secretary of State website in search of a particular service. Several Secretaries of State run their state's Department of Motor Vehicles, others supervise commerce, some oversee state records, many control election processes, and the list continues. As a result, Secretaries of State have been particularly innovative in the services they provide online. However, because of the broad range of jobs each Secretary of State might manage, the necessity of online services varies. The function score shows how any services and how interactive these services have become, by awarding points for each service offered. Consequently, unlike the features scores, functions scores fluctuate quite a bit, and this

fluctuation is not necessarily a reflection of the quality of these websites (although sometimes the scores can be an indication of a particularly good or bad website) but often just a reflection of the wider variety of jobs some Secretaries are responsible for administering. Figure 5-2 illustrates the wide variety of function scores.



As the Figure shows, scores ranged from zero to the maximum score of 20, which was received by Maine. Overall, the average function score was 7. Interestingly, although the amount of states scoring between 0 to 12 points varies widely there are much fewer states with scores higher than 12. This cutoff indicates that although states tend to use a variety of online services, many states still have room to grow. To better understand this cutoff it helps to break down each states functions score. Two levels of services were identified in the function section. The higher level indentified was interaction. Any service that reached the transaction level received 2 function points. The lower level indentified was interaction. Any service that reached the interaction level only received 1 function point. This point system resulting in a maximum function score of 20, but the maximum amount of services assessed was 10. The 1

and 2 point scale for the function score makes it difficult to assess how many services each state offered just looking at Figure 5-2, so Table 5-5 shows the distribution of services across the 47 websites analyzed.

Table 5-5: Number of Services Use

Number of Services	Percent of States with that Number of Services
Zero	17.0 %
One	14.9
Two	23.4
Three	14.9
Four	6.4
Five	8.5
Six	4.3
Seven	4.3
Eight	0.0
Nine	0.0
Ten	6.4

The Table shows that after three services the number of states adding services tends to decrease. The number of states with at maximum three services leads to the question of why the average functions score is as high as 7. This disparity can be partly attributed to the large number of transaction services, illustrated in Table 5-6.

Table 5-6: Interaction versus Transaction Services Use

	Interaction Services	Transaction Services
Total	29	109
Percent	21%	79%

As Table 5-6 shows a large majority of services, 79 percent, are actually at the transaction level, compared with only 21 percent of services being offered at the interaction level. The size of this percent is important because it is a shift from what previous research shows five years ago, where more services were at the interaction level. Nonetheless, with the growth of technology there has been a shift toward full transactions being completed online. Moreover the shift is benefiting both users and the Secretary of State Offices. Users now have more easy access, 24 hours a day, to services, and Secretary of State Offices are saving time and money. Whereas when discussing various features or new web 2.0 services on their websites, many Secretary of State Offices struggled to list tangible rewards, all Secretary of State Offices were quick to cite the financial savings accrued from their new online services. Of course, some offices still expressed caution, because at this point, even if services become electronic, they still needed to maintain accessibility offline too, for users not comfortable or unable to use the web version. For instance, Wyoming Deputy Secretary of State Pat Arp emphasized her office is moving more services online, not because it necessarily saves money because people still choose to use the offline option, but because it adds ease for users(Arp, 2010). Even so, online services are only gaining popularity. Certain services in particular are appearing more and more on multiple Secretary of State websites. Table 5-7 shows the top five services offered and the number of states offering each.

Table 5-7: Top Five Services

Top Five Services	Percent of States
1. UCC Filing	57.4%
2. Corporate Filing	51.1
3. Register to Vote	6.3
4. Notary Tutorials	6.3
5. Online Candidate Filing	6.3

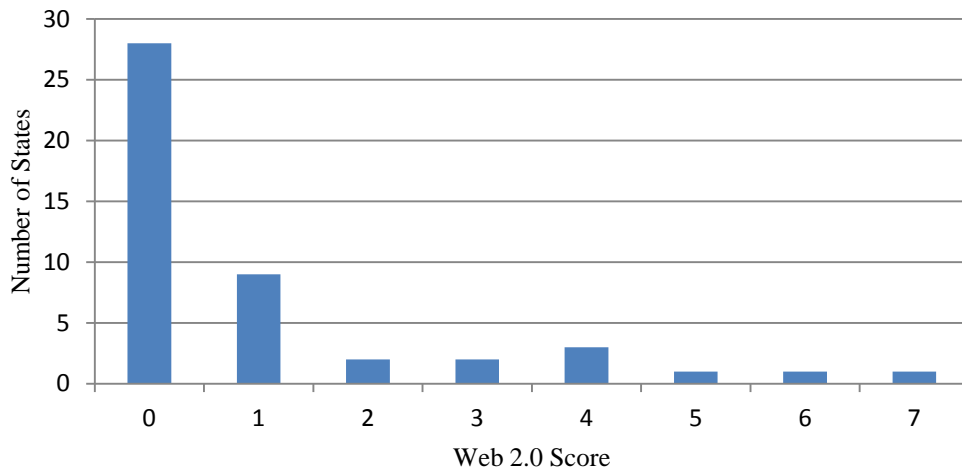
UCC and corporate filing by far appear on the most amounts of webpages, and the expansion of these services has been cited by several states as a major accomplishment and also an excellent way of reducing the budget during these tough economic times. Although not to the same extent, election oriented services are also increasingly implemented on Secretary of State websites. In particular, 3 states allow for online candidate filing. Additionally, Arizona, Oregon and Washington even let people register to vote online. Another time saving service that is beginning to gain popularity is online notary tutorials. Three states currently offer their own versions of tutorials and online quizzes for notary certification.

Web 2.0

Unlike the function scores, very few states had web 2.0 scores that were notably high. Only a limited number of websites made use of new media. In fact, 28 states, 60 percent of websites

assessed, did not use any type of web 2.0. Figure 5-3 shows the full distribution.

Figure 5-3: Distribution of Web 2.0 Scores



Washington had the highest web 2.0 score with 7 different types total. West Virginia markedly was the only state to have 6 different types, and Arkansas was the only state to have 5. Most states had fewer. 19 percent of states only used one web 2.0 tool. Nevertheless, the fact that the over a third of states, 40 percent, had some type of web 2.0 feature is a marked increase from even just a year ago. Table 5-8 shows a breakdown of the different types of web 2.0 tools used.

Table 5-8: Web 2.0 Tools Use

Web 2.0 Tools	Percent of States with Web 2.0 Tool
Blogs	6.4%
Wikis	0.0
Video Sharing	14.9
Photo Sharing	6.4
Podcasting	0.0
Virtual Worlds	0.0
Social Networking Sites	19.1
Syndicated Web Feeds	27.7
Mashups	0.0
Widgets, Gadgets, Pipes	0.0
Social Bookmark & News	6.4
Microblogging	23.4

The most common type of web 2.0 tool used was syndicated web feeds, with 27.7 percent of states implementing this tool by creating RSS feeds. Microblogging is the second most used tool with 23.4 percent of Secretaries of State having a Twitter profile. Interestingly, microblogging is actually more popular among Secretaries of State than using other social network sites such as MySpace and Facebook. Only 19.1 percent of Secretaries of State have a presence on any social network. This difference suggests how recently Secretaries of State have begun to use web 2.0 tools because Twitter is the more recent trend than Facebook or MySpace. 14.9 percent of Secretaries of State used video sharing to enhance communication with visitors

on websites like Vimeo and YouTube, and 6.4 percent of offices used photo sharing. 6.4 percent used social bookmarking and a similar 6.4 used blogs to share news with users.

Relation with Features versus Functions

Since web 2.0 tools tend to appear less often than services or other features, it is revealing to note the web 2.0 relation to the other two scores. There is a very strong tendency for states with high feature scores to also have high web 2.0 scores. In contrast, the functions scores seem much less related to the amount of web 2.0 tools used. In fact, some of the highest function scoring websites used no web 2.0 tools. Table 5-9 shows the Pearson correlations between web 2.0 scores and the two other scores. It shows that feature and web 2.0 scores are closer related than function and web 2.0 scores.

Table 5- 9: Pearson Correlation with Web 2.0 Scores

	Pearson Correlation with Web 2.0 Scores	Probability
Feature Scores	0.625	≤ 0.001
Function Scores	0.237	0.1500

Conclusion

In conclusion, although feature and web 2.0 scores appear to be correlated, the feature and function scores vary a great deal from the web 2.0 score. Therefore, the question remains why do certain Secretaries of State websites adopt the use of web 2.0 tools, while others do not. Moreover, what if anything results from these innovations? The following chapter will address these questions with a comparison of five of the highest web 2.0 scoring states and five of the lowest web 2.0 scoring states.

CHAPTER 6

Comparisons and Case Studies

During the study, at least twenty Secretaries of State or their staff members were informally questioned. However, only fifteen Secretaries or staffers were interviewed on the record. From these sixteen interviews, ten states' data were selected to be analyzed more closely. The selection of states for closer scrutiny was guided by a desire to capture a range of variation in the use of web 2.0. Arkansas, Ohio, Kentucky, Texas, and West Virginia were chosen because of their varying degrees of web 2.0 utilization. Maine, Nebraska, Nevada, North Carolina, and Wisconsin were chosen because none of them implemented any web 2.0 tools. Since so many states did not use web 2.0 tools, these states were also chosen because of the wide variation in their other scores. Both North Carolina and Wisconsin have overall scores that are very low. Maine used no web 2.0 tools but had one of the highest overall scores because it successfully scored the maximum amount of points in the function score section. Nebraska was chosen because it had no web 2.0 tools and a minimal function score but had one of the highest feature scores. Nevada was chosen because it had both an above average feature and function score, but still used no web 2.0 tools. The variety of scores provides a way to look at websites without web 2.0 tools as neither good nor bad. Tables 6-1 and 6-2 below list scores and rankings for each state of the ten states in all three categories as well as their respective total scores.

Table 6-1: Web 2.0 Users Scores and Rankings

State	Feature Score	Feature Rank	Function Score	Function Rank	Web 2.0 Score	Web 2.0 Rank	Total Score	Total Rank
Arkansas	19	2	17	2	5	3	41	1
Kentucky	18	3	16	3	4	4	38	2
Ohio	16	7	6	15	3	9	24	8
Texas	16	7	4	22	1	11	21	19
West Virginia	18	3	2	34	6	2	26	7

Table 6-2: Non-Web 2.0 Users Scores and Rankings

State	Feature Score	Feature Rank	Function Score	Function Rank	Web 2.0 Score	Web 2.0 Rank	Total Score	Total Rank
Maine	15	12	20	1	0	20	35	3
Nebraska	16	7	1	40	0	20	17	28
Nevada	15	12	6	15	0	20	21	19
North Carolina	8	47	4	22	0	20	12	42
Wisconsin	11	33	2	34	0	20	13	36

Causes of Web 2.0 Use

By comparing the responses of staff and Secretaries of State in the ten different offices, several patterns emerge. Interestingly, some variables such as Secretary of State leadership, private or public maintenance, budget, and time of redesign seem to affect which states use web 2.0, while other factors such as review processes and accolades received appear to have minimal influence. The following section examines these factors more in depth.

Secretaries of State Leadership and Experience

Among the ten case study states, individual Secretary of State leadership and experience were two major factors seemingly affecting the introduction of web 2.0 tools on the website.

One of the greatest challenges many offices described was the lack of a cohesive plan for web 2.0 tools. For instance, in one office, the communications staff was tweeting for weeks before the Secretary of State discovered the messages were being put onto Twitter. Because use of web 2.0 tools can involve the coordination of communication, IT, and general staff, the tools can often be more trouble than they are worth if not everyone is accepting of the idea. However, with the aid of strong direction and leadership on the part of a Secretary of State, the use of web 2.0 tools can become far more efficient.

Several of the Secretaries of States' past background or strong passion for web 2.0 tools has helped guide their offices' efforts to use new tools and take more risks. To get at this issue, I asked interviewees, "What do you know about web 2.0 tools? How important do you think they are to the success of the website?" Table 6-3 illustrates the breakdown of responses in which during the interview the Secretary's experience with technology was actively mentioned.

Table 6-3: Secretary of State Technology Experience

State	Experience Discussed in Interview
<i>Web 2.0 States</i>	
Arkansas	No
Ohio	Yes
Kentucky	Yes
Texas	No
West Virginia	Yes
<i>Non-Web 2.0 States</i>	
Maine	Yes
Nebraska	No
Nevada	No
North Carolina	No
Wisconsin	No

Three of the five states with web 2.0 tools specifically mentioned the technology experience of their respective Secretaries of State, while only one state without web 2.0 tools mentioned it. More specifically, the one state without web 2.0 tools in which the Secretary of State had technology experience was Maine, a state with the highest function score among all states, and the third highest total score. Before becoming Secretary, Matthew Dunlap worked in the Maine House of Representatives from 1994 until 2004, where he helped promote bills to increase technology, thereby gaining knowledge about online tools. As a result of his experience, Maine was distinct because, unlike many other states which did not use web 2.0 tools, its choice was very deliberate. As Secretary Dunlap explained, “We try to go for the lowest hanging

fruit...adding new services has the biggest payoff”(Dunlap, 2010). To him, providing services had more obvious benefits than using web 2.0 tools at this point in time.

In contrast, the other three Secretaries of State with self-admitted technology experience had a large influence on the choice to begin using web 2.0 features. Ohio Secretary of State Jennifer Brunner had to familiarize herself with technology when it arose in several of her major cases as a lawyer before she entered office, prompting a fascination with the potential for online tools in the future. Then, after running for office using social media, she thought the use of Facebook would be an appropriate addition to the Secretary of State website(Brunner, 2010). Both Secretary Trey Grayson (KY) and Secretary Natalie Tennant (WV) went so far as to include the promise to improve their respective offices’ uses of the Internet in their campaign promises as a means to increase efficiency, transparency, and accessibility of services.

They both saw an expansion of their online presence as a way to increase office accessibility. According to Kentucky Deputy Assistant Secretary of State Leslie Fugate, the website is one of the top two priorities of the office because the Secretary saw it as a means to make 24 hour 7 day a week services possible, while at the same time reducing costs(Fugate, 2010). In fact, in Secretary Grayson’s biography on the website, Grayson lists redesigning the website to include new online services such as translation in six new languages, the Governor’s Executive Journal, Enacted Legislation, additional Land Grant documents and a summonses tracking services, as well as placing thousands of business documents online as some of his major accomplishments while in office(Kentucky Secretary of State, 2010). Jokingly called the Twitter King by a fellow Secretary of State, Grayson’s office was the first office to use Twitter to report election data in 2008.

Out of all the Secretaries, Secretary Tennant, has the most experience with social media, formerly working as a local news broadcaster. One of her primary campaign promises was to create a more open and engaging government(Tennant, 2010). She writes on her website, “The Secretary of State’s office is always looking for more efficient and cost saving ways to conduct the programs and services we offer the people of West Virginia. We will use whatever resources are available to conduct effective business with constituents whether it is through online services, face to face interaction, mail, mobile texting, phone calls or social media methods. I view an open and engaging government as being transparent where citizens can see what their elected officials and their agencies are doing and in turn give feedback and interact with government more easily” (West Virginia Secretary of State, 2010). By using her familiarity with video broadcasts, Tennant makes the most innovative use of videos to communicate with her constituents, and moreover, by having videos on hand, she helps develop a better relationship with reporters, too.

Being newer to office also seems to make these three Secretaries more receptive to change. As Table 6-4 below illustrates, Secretaries who do not use web 2.0 services tend to exhibit longer tenure in office than those who do. Of course, this probably reflects a generational difference as well, since Secretaries who have been in office longer tend to be older than those whose terms started more recently.

Table 6-4: Secretary of State Number of Terms

State	Number of Terms in Office
<i>Web 2.0 States</i>	
Arkansas	2
Ohio	1
Kentucky	2
Texas	n/a (appointed)
West Virginia	1
<i>Non-Web 2.0 States</i>	
Maine	n/a (elected by legislature)
Nebraska	3
Nevada	1
North Carolina	3
Wisconsin	8

Maine and Texas Secretaries were not included in this portion of analyses because of the nature of their selection to office (appointment rather than direct election). Because there are only two states to analyze, the relationship between type of selection and use of web 2.0 tools is not completely clear, and should perhaps be explored more in the future. However, a possible explanation for this discrepancy between web 2.0 and non-web 2.0 users could be newer Secretaries of State are less set in their ways. Furthermore, when they take office, their website needs to be redesigned from their predecessors. Secretaries of State entering office as new media becomes more popular might be more likely to add a Facebook page, than someone like

Secretary Lafollette from Wisconsin who entered office before websites were even being used. Another possible explanation is newer Secretaries of States are more likely to have used social media during their campaigns and consequently are familiar with the tools, so decided to carry them into office. This has been proven true in other political offices. For instance, President Obama's whitehouse.gov page uses many new media tools, created by many of the same staff who helped pioneer their use on his campaign. In fact, several Secretaries expressed familiarity with new media tools from campaigns when interviewed, such as Secretary Brunner. Nonetheless, the connection still is not completely clear.

Redesign

One of the most unexpected patterns during interviews was the frequency in which interviewees mentioned a recent redesign occurring on their website. I asked the interviewees, "How often is your website updated?" Strikingly, as Table 6-5 below illustrates, much of those redesigns were occurring on websites that contained web 2.0 tools.

Table 6-5: Recent Redesign

State	Recent Redesign Mentioned in Interview
<i>Web 2.0 States</i>	
Arkansas	Yes
Ohio	Yes
Kentucky	Yes
Texas	No
West Virginia	Yes
<i>Non-Web 2.0 States</i>	
Maine	No
Nebraska	Yes
Nevada	Yes
North Carolina	No
Wisconsin	No

Notably, all but one of the states with web 2.0 features had undergone a major redesign. However, in contrast, only two of the non-web 2.0 states mentioned, sustained major recent changes. Even more notably, both Nebraska and Nevada were getting redesigned on the backend. This means information on the website was not being changed but the method of delivery and organization of the information was being adjusted. Changes that were being made were about usability and content management, not about appearance or adding additional features. There are many possible inferences that can be made from this pattern. This relationship could occur because websites undergoing more recent changes are beginning to use

newer features such as web 2.0 tools, or it could be occurring because Secretary of State Offices who care enough to redesign their websites, care enough to experiment with web 2.0 features. No Secretary specifically mentioned adding web 2.0 features during their website's redesign so there could even be no relationship and redesigning and web 2.0 tools might be occurring at the same time because of an extraneous factor such as the Secretary of State is new to office. Nonetheless, the impact of website redesigns also needs to be evaluated closer. Particularly, because websites that have undergone website redesign tend to be higher scoring in all areas not just web 2.0.

Website Maintenance

Another variable that seems to be related to the use of web 2.0 is how the website is maintained. There are several options. Some states contract their website work out. These websites often look more polished and the use of outside staff saves work for offices. On the other hand, this use of private contractors can create copyright issues. Some states do all the work in-house. This type of website involves more IT staff but can sometimes save time of going in between sources and also prevents problems with copyright issues. Often, states have a statewide IT office with one large server for all their government websites. In this case, the Secretary of State website is maintained by the same staff that also maintains all the other state websites such as the Governor's webpages. Sometimes, states use a combination of strategies. Often private firms are hired to create the more specialized or complicated programs such as those associated with an online service. Some websites use a combination of in-house and outsourced services. Table 6-6 illustrates the breakdown between states.

Table 6-6: Maintenance

State	Maintenance
<i>Web 2.0 States</i>	
Arkansas	In House and Outsourced
Ohio	Started Outsourced; Migrated In House
Kentucky	In House and Outsourced
Texas	In House and Outsourced
West Virginia	In House and Outsourced
<i>Non-Web 2.0 States</i>	
Maine	In House with State Server
Nebraska	In House with State Server
Nevada	Started In House; Migrated Out
North Carolina	In House
Wisconsin	Outsourced

States with web 2.0 tend to use a combination of in-house and outsourced maintenance, relying upon out-of-house firms to complete specialized tasks, but otherwise depending upon in-house staff for daily maintenance. By having staff in-house, more innovation appears to occur. This may transpire because orders do not get lost in translation, and ideas can more easily be developed. For many states having a tech staff on hand has become integral to their success. In fact, Secretary Brunner lists the transition from outsourcing to in-house as one of her websites greatest accomplishments(Brunner, 2010). However, a complete dependence upon only in-house services does not necessarily result in positive outcomes. For example, North Carolina,

which uses only in-house services, received one of the lowest scores on its website. Without some outside contracting, beginning more complicated specialized tasks might seem too daunting to in-house IT staff. Additionally, sometimes design elements suffer. In contrast, in-house staffs from state servers usually do a very good job maintaining websites, as seen by the high scores received by Maine and Nebraska, but they do not leave much room for innovation because their time is so spread out. Moreover, social media tools need constant supervision; often this is done by the communications staff but without a close working relationship between the communications staff and the IT staff this maintenance might be harder to do.

Resources

Several states without web 2.0 expressed concerns about budget, while no states with web 2.0 tools outright named budget restrictions as a problem. I specifically asked “What part of the budget is allotted to the website? Has the size of the budget or anything similar ever constrained you? Table 6-7 illustrates this dichotomy.

Table 6-7: Budget

State	Budget Problems Mentioned in Interview
<i>Web 2.0 States</i>	
Arkansas	No
Ohio	No
Kentucky	No
Texas	No
West Virginia	No
<i>Non-Web 2.0 States</i>	
Maine	No
Nebraska	Yes
Nevada	Yes
North Carolina	No
Wisconsin	Yes

Interestingly, although 3 out of the 5 states without web 2.0 tools had budget concerns, this did not seem to restrict their expansion of online services. In fact, several states used online services to help their tightening budgets and reduce work for their employees. As Nebraska Communications Coordinator Gary Seacrest explains, “Creating services can take up to a year which is time consuming in front...but it saves us staff time and we hope to get the investment back fairly quickly. It makes the paper process less burdensome and cumbersome for both us and the public” (Seacrest, 2010). Kentucky’s Secretary of State has used online services to fulfill his campaign promise to make the office more efficient. Although it takes a large upfront

investment, many of the online services have made so much of a profit that it is not hard to convince government bodies to help provide the money to start the projects. Moreover, at a certain point costs are already built into the budget, particularly for web 2.0 tools. Social media is often free or cost minimal amounts to use so a smaller budget does not really prohibit their implementation. The biggest concern offices face when expanding their website is time and staff limitations.

One of the greatest challenges nearly all states listed was the plethora of jobs a Secretary of State must complete and putting and prioritizing all that content on a website. Although many states have the resources to complete a variety of tasks to suit all these different parties, they do not always have the time. Creating new services takes a great deal of time and effort. As a result, both states with web 2.0 tools and without web 2.0 tools faced time constraints. Table 6-8 shows over half of each group experienced time strain.

Table 6-8: Time Problems

State	Time Problems Mentioned in Interview
<u>Web 2.0 States</u>	
Arkansas	Yes
Ohio	Yes
Kentucky	No
Texas	Yes
West Virginia	No
<u>Non-Web 2.0 States</u>	
Maine	Yes
Nebraska	Yes
Nevada	No
North Carolina	Yes
Wisconsin	No

As Table 6-8 illustrates an equal amount of states with web 2.0 tools faced time problems as states without web 2.0 tools, leading one to hypothesize that this strain causes more of a need to prioritize, not necessarily eliminate web 2.0 tools.

Review Process and Accolades

Two factors that appeared to have no influence on the use of web 2.0 tools was the method of reviewing website content and the accolades the website received. Table 6-9 shows how there is no apparent differences in the way the two groups of states reviewed the material on their websites. Additionally, whether a state used a formal or informal process of reviewing and

updating their content seemed to not only have a minimal effect on web 2.0 tool scores but also over any scores.

Table 6-9 Review Process

State	Review Process
<i><u>Web 2.0 States</u></i>	
Arkansas	Informal
Ohio	Informal
Kentucky	Formal
Texas	Informal
West Virginia	Informal
<i><u>Non-Web 2.0 States</u></i>	
Maine	Informal
Nebraska	Formal
Nevada	Formal
North Carolina	Informal
Wisconsin	Informal

Also, both states with and without web 2.0 tools won awards for the quality of their websites, indicating that it is not necessary to have web 2.0 tools to be considered a strong website. Table 6-10 shows which states mentioned accolades they received in their interview and which states did not.

Table 6-10: Recent Accolade Received

State	Recent Accolade Received
<i>Web 2.0 States</i>	
Arkansas	No
Ohio	Yes
Kentucky	No
Texas	No
West Virginia	No
<i>Non-Web 2.0 States</i>	
Maine	Yes
Nebraska	No
Nevada	No
North Carolina	No
Wisconsin	No

Benefits of Web 2.0 Use

Notably, after web 2.0 tools were defined, every office interviewed that did not already have web 2.0 tools expressed a willingness to adopt them someday. After discovering these states did not use web 2.0 tools, I asked officials “Would you consider ever using web 2.0 tools?” Table 6-11 illustrates the results of this question.

Table 6-11: Willing to Adopt Web 2.0 Tools

State	Expressed Willingness to Adopt Web 2.0 Tools in Future
<i>Non-Web 2.0 States</i>	
Maine	Yes
Nebraska	Yes
Nevada	Yes
North Carolina	Yes
Wisconsin	Yes

Every state said yes. Nonetheless, many were unaware of the potential of web 2.0 or expressed reluctance to use web 2.0 tools until actual benefits were proven. For example, when asked about introducing web 2.0 features to Nebraska’s website, Seacrest commented, “We are looking at it and trying to figure out how to best use them but we are not leaders. We see a lot of examples with political campaigns but it is a little harder for us to come up with good methods”(Seacrest, 2010). Similarly Nevada Secretary Miller expressed interest in eventually using web 2.0 tools but commented, “We try to focus on the areas that bring the most utility to the website but we are absolutely open to adding them eventually”(Miller, 2010). North Carolina expressed slightly more skepticism in their response. Deputy Secretary Haley Haynes commented, “We don’t have any web 2.0. The younger generation seems to want that but it would require more personnel”(Haynes, 2010). However, she, too, was not completely opposed to the idea. Meanwhile, Wisconsin Secretary of State Doug LaFollette was less familiar with the concept of web 2.0, commenting that his team recommended using some of the social network

sites for his upcoming reelection campaign but otherwise confessed to not knowing much about the opportunities web 2.0 could bring(Lafollette, 2010). Nevertheless, he also expressed interest in the idea, and Secretary Lafollette's lack of knowledge was not unusual.

Most states, even states using web 2.0 tools, believed the possibilities for web 2.0 began and finished with social networking sites such as MySpace, Facebook, and Twitter, and with the more adventurous states daring to use video sites like Vimeo and YouTube. For example, Secretary Brunner's website actually uses Google calendar, but she was surprised to learn that this was an example of a web 2.0 service. Perhaps because of this limited view of web 2.0 tools, many states have found limited utility with their addition. For example, Secretary Grayson's office was one of the first offices to use Twitter, but he only has 380 followers. Fugate explained, "We were the first office to use Twitter on Election Day in 2008 and got great feedback. We linked Facebook and Twitter to report problems....but posting on just daily stuff did not work as well. Our office is just not that sexy, so we cut back on the amount of time. Now we are not using the pages as we originally expected"(Fugate, 2010). Similarly, the Arkansas office has experienced the same frustration. When asked about their web 2.0 use Arkansas Secretary of State Director of Elections Carder Hawkins commented, "We have a Facebook page, but we don't use it very progressively. We do not provide a lot of daily information...we need someone to stay on top of that"(Hawkins, 2010). Furthermore, wallposts are not available to the general public on the Arkansas Secretary of State Facebook page, limiting the amount of people who can read the information. Part of the problem is besides this anecdotal history, there is little evaluation of websites, particularly web 2.0 features.

General Feedback

In order to get an overall sense of the states’ experiences with web 2.0 and to get general feedback, I asked what, “What has been the greatest success of the website? What has been the greatest challenge?” I also asked “Has the office experienced any substantial benefits like decreased work or savings because of the website?” The most evaluated aspect of websites was the various services because many of them provided profits. Several states also cited a notable decline in work for staff. The following two tables, 6-12 and 6-13, illustrate these positive results.

Table 6-12: Cuts Money

State	Cited Cuts Cost in Interview
<i><u>Web 2.0 States</u></i>	
Arkansas	No
Ohio	Yes
Kentucky	Yes
Texas	No
West Virginia	No
<i><u>Non-Web 2.0 States</u></i>	
Maine	Yes
Nebraska	Yes
Nevada	Yes
North Carolina	No
Wisconsin	No

When asked whether they experienced any benefits from expanding their websites about half the states responded with figures about money saved. Table 6-13 summaries the answers I received. Kentucky’s website has allowed the office to cut back 26% of the budget(Fugate, 2010). Additionally, despite being one of the smaller offices in the Kentucky government it is the fifth most visited website. In Maine, an estimated 70% of revenue stream from the Maine portal comes from the Secretary of State website(Dunlap, 2010). Not all states were able to cite exact figures, but many cited a significant decline in work for employees.

Table 6-13: Decrease Staff Work

State	Cuts Work
<i><u>Web 2.0 States</u></i>	
Arkansas	Yes
Ohio	Yes
Kentucky	Yes
Texas	Yes
West Virginia	Yes
<i><u>Non-Web 2.0 States</u></i>	
Maine	Yes
Nebraska	Yes
Nevada	Yes
North Carolina	No
Wisconsin	Yes

Several states discussed the benefits of being able to point people to various parts of the webpage to answer questions. Others discussed the major decline in filing the staff experienced with the movement of services online. For example, according to Secretary Miller, “By shifting functions to the web, Nevada has without question reduced the number of staff needed and allowed us to shift staff to different areas because of online services.” For example, 90 percent of Nevada UCC filing transactions is completed online(Miller, 2010).

However, none of these benefits seemed to be directly connected with web 2.0 services. The best measurements of web 2.0 were the positive feedback many Secretaries of State heard from users and the growing use of their services. Table 6-14 shows which states have claimed to receive positive feedback during the interview.

Table 6-14: Positive Feedback

State	Positive Feedback Cited in Interview
<i>Web 2.0 States</i>	
Arkansas	Yes
Ohio	Yes
Kentucky	Yes
Texas	Yes
West Virginia	Yes
<i>Non-Web 2.0 States</i>	
Maine	Yes
Nebraska	No
Nevada	Yes
North Carolina	No
Wisconsin	No

During the interview process, states without web 2.0 tools seemed less focused on mentioning the feedback they receive. The best examples of success were the growth some of the services have seen.

Conclusion

In conclusion, states tend to use web 2.0 tools under certain conditions. Secretaries of State in states with web 2.0 tools tend to have more technology experience, and feel that web 2.0 tools are important. In states that do not use web 2.0 tools Secretaries of State are not opposed

to the idea of implementing them. Instead they either do not know enough about the tools or are unsure about the benefits. Secretaries of State whose offices use web 2.0 tools also tend to have served fewer terms. This could be contributed to several reasons ranging from the average age of Secretaries in newer terms, their familiarity with new media from their own personal campaigns, or just timing. Secretaries of State offices also tend to use web 2.0 tools if they have recently undergone a redesign. Additionally, states that have web 2.0 tools tend to use a combination of in-house and outsourcing for website maintenance. Whereas, states without web 2.0 tools either use state staff, only in-house services, or outsource services. A possible explanation for this disparity is in-house staff potentially provide more time for web 2.0 tools to be updated. Secretaries of States with web 2.0 tools tend to be less worried about budget than Secretaries of States without web 2.0 tools. However, both types of websites worry about staff time, suggesting that time does not prevent states from using web 2.0 tools. Instead, these states just need to prioritize. There was no particular way that offices reviewed their data that made the use of web 2.0 tools more likely. Both states with web 2.0 tools and states without web 2.0 tools won awards, which illustrates how web 2.0 tools are not necessary to create a high quality website.

Benefits from using web 2.0 tools were much less clear. Several states mentioned the use of online services as a means to cut costs and work for staff. Yet, no state specifically mentioned web 2.0 tools as helping cut resources. On the other hand, all interviewees from states which use web 2.0 tools cited positive feedback they have heard from citizens about these new features. Nonetheless, web 2.0 direct effects remain unclear. Many states that actually use web 2.0 tools have difficulties finding ways to integrate them. This difficulty could possibly be a result of the current focus on social networking and microblogging tools that do not always work

for Secretaries of State, as well as they do for other more exciting offices such as the White House. Consequently, one must conclude that web 2.0 tool benefits are at this point in time minimal on Secretary of State websites but could potentially grow with time.

CHAPTER 7

Conclusion

In summary, current e-government research is an expanding field of study but even with the new works coming out every year, research cannot keep up with the quickly changing innovations of the Internet. With this analysis on Secretaries of State websites, I hoped to fill a gap in e-government research. Very little studies have been conducted about the newest wave of Internet invention, web 2.0. Moreover, studies about e-government in general are often too broad, only focusing on bigger patterns such as what percent of federal websites are W3C accessible, or too specific, such as analyzing blog posts on a handful of websites. Additionally, too many studies only look at the effects of e-government on officials or on citizens but not both. Researching Secretary of State websites provided an opportunity for a large enough sample to analyze big patterns but also specific enough websites with distinct services to illustrate what precisely is occurring in government offices.

I hypothesized that Secretary of State websites have not used the full potential of e-government solutions, but by using Internet tools to increase transparency, communication, and participation, the quality and efficiency of services offered to constituents would noticeably improve. To test this hypothesis, I designed a study to answer two questions: What web 2.0 and Internet services are being implemented by Secretaries of State and how effectively are these services being implemented? After completing the research, I conclude that Secretaries of State are doing an adequate job of providing online services on websites with appropriate features, but these websites fail to use web 2.0 tools to increase transparency, communication, or participation significantly. Furthermore, it remains unclear if web 2.0 tools are truly effective.

Analysis Part One Findings

The first section of the analysis was designed to answer what web 2.0 and Internet services are being implemented by Secretaries of State. All 47 Secretary of State websites were evaluated with three different scores, features, functions, and web 2.0 tools to measure each state's web presence. In the features section, it was found that Secretary of State websites did an excellent job of providing necessities for a good website but failed to implement features that would enhance users' experiences. For example, websites contained simple forms of information such as publications and databases, but lacked newer multimedia formats such as audio and videos. Additionally, states also performed strongly in public outreach by posting basic contact information such as mailing addresses and telephone numbers, but often failed to offer citizens any way to personalize contact by providing options for email updates or areas to post comments. States performed most strongly in creating easy to navigate webpages, with the majority of offices implementing search functions, and FAQs. However, more states could be offering tech assistance options and subject indexes on their webpages to truly make navigations simple.

Accessibility and Security policies also showed mixed results. Nearly all Secretary of State websites' content were designed to be under 50 KB for users with slower computers or dial-up to use, and a majority of states had a privacy policy posted on their website. On the other hand, very few security and W3C policies were posted. Furthermore, few states had any translations options. This lack of accessibility for those not fluent in English and for those who are disabled is probably the most concerning result found in the features section, because Secretary of State websites serve important duties for citizens such as providing voting information, and overseeing the department of motor vehicles in some states. Language access

clearly needs to be improved. W3C policies need to be evaluated more closely before a conclusion can be reached on their presence, because without the proper equipment , they were difficult to analyze. Nevertheless, at least basic accessibility was provided on most websites.

Overall, the distribution of features scores illustrates that nearly all Secretary of State websites offer at least the minimum essential features but many fail to provide any extra frills that might enhance their webpages. The features scores showed the quality of websites varies greatly, but very few are actually in need of major feature improvements.

The function score illuminated the growing popularity of developing interactive and transaction level services on Secretary of State websites. Notably, 83 percent of states offer some type of online service on their website. More than ever, offices are beginning to put services online, and the percent of these services at full transaction level is increasing too. More and more, users can go online and perform a task on the Secretary of State websites, without even having to mail paperwork in, saving both the user and the office time and money. The most common type of tasks that Secretary of State offices have put online are UCC filing, corporate filing, registering to vote, notary tutorials, and online candidate filing. Additionally, many other creative services have been developed that are unique to specific states. For example, the Ohio website has a database full of state statistics that visitors can manipulate to create charts and tables online. Interestingly, this rise of services reflected in the function scores of states seems to be driven by two motives, a desire to provide ease of access for citizens, corporations, press, and others who use the website 24/7, as well as a way to cut work for staff and save money for the office. Seemingly, adding new services is the direction many states are expanding. However, the distribution of these results among states needs to be treated with

skepticism because of the varying jobs of Secretaries of State; some offices have more duties than others that they can fulfill online.

In contrast to the growing popularity of increasing function capability online, web 2.0 tool scores were very low. The majority of states, 60 percent, do not use web 2.0 features. However, the 40 percent that do are part of a growing segment of offices. Although the states using web 2.0 tools still appear to be trying to figure out how to best use new media, web 2.0 implementation does not seem to detract from the overall quality of the other parts of the website. In fact, there appears to be a correlation between higher feature scores with higher web 2.0 scores. Intriguingly, this same correlation does not occur between function scores and web 2.0 scores, leading one to infer that the states investing the most in online function services do not have the time or perhaps money to invest in maintaining web 2.0 tools. Often the addition of these web 2.0 tools is very new in offices, as inferred by the popularity of the newer web 2.0 service, Twitter, over older services such as Facebook and MySpace. The most popular use of web 2.0 was syndicated web feeds, which is logical because RSS feeds can serve as an important and easy way to deliver news that does not take much maintenance. Microblogging (i.e. Twitter) and Social Networking (i.e. Facebook and MySpace) were the second and third most popular uses of web 2.0 tools respectively. Some States also implemented video sharing websites (i.e. YouTube) and a couple states used blogs, photo sharing, and social bookmark news.

Perhaps more interesting was all the type of tools states did not choose to use, such as wikis, podcasting, virtual worlds, mashups, widgets, gadgets, and pipes. Furthermore, only small numbers of states were using blogs, photo sharing and social bookmark news. One possible explanation for this focus on social networking sites and microblogging is the prevalent use of these tools during campaigns. With proven effectiveness and popularity during the past several

elections, Facebook, MySpace, and Twitter have become buzz words. One can infer that perhaps Secretary of States' experience with these tools during their own elections, as well as their familiarity with these services because of all the press that social networks attract have led these tools to become the first that offices turn to use.

Unfortunately, this use of social networks and microblogging is not always the wisest investment of time. Although social networks are sensible tools during elections season, the use of a practical blog, where FAQs can be posted, or the use of a social bookmark service like Google calendars would be much more useful at other points in the year. Additionally, because they are so concentrated on using web 2.0 tools for communication with their Facebook pages and Twitter feeds, most Secretary of State Offices miss invaluable opportunities to use web 2.0 tools to increase transparency and participation with other tools. Web 2.0 tools offer states the ability to post documents and reports online that users can comment upon and add to, but only the Arkansas Secretary of State's use of web 2.0 services, even comes close to beginning to use a service that can promote this interaction. Even Secretary of State use of video and photo sharing sites tends to be for press. However, these tools can also be used to increase transparency, but unfortunately, most videos posted right now by Secretaries of State are planned speeches or public service announcements recommending people register to vote. Although these uses of videos are nice, overlooking other goals of multimedia use is a mistake. Practically no state even considers the value of taping a meeting and putting the discussion online, or soliciting questions and then having them answered in video form. To better understand these trends that Secretary of State Office websites are undergoing, particularly with web 2.0 but also with the features implemented and the function capabilities, the second half of the study was conducted.

Analysis Part Two Findings

The second section of analysis was designed to answer how effectively web 2.0 tools were being implemented. Five states that use web 2.0 tools were compared to five states that did not use web 2.0 tools. Arkansas, Ohio, Kentucky, Texas, and West Virginia were chosen because of their varying degrees of web 2.0 utilization. Maine, Nebraska, Nevada, North Carolina, and Wisconsin were chosen because none of them implemented any web 2.0 tools. Both the causes and effects of web 2.0 use were analyzed. States with high web 2.0 scores tended to be highly ranked overall, but websites without web 2.0 tools could be highly ranked, too. For instance, Maine served as an excellent example of a strong website with no web 2.0 tools. Consequently, better did not always equate with web 2.0. However, several patterns did exist.

One of the strongest factors that seemed to spur web 2.0 growth was the leadership and experience of the Secretary of State. Some of the most innovative uses of web 2.0 tools came from Secretaries who strongly believed in the concept of new media. For instance, in West Virginia, Secretary Tennant successfully used videos to communicate with the public, because as a former news caster, she knew how to work her way around a camera. The term of the Secretary of State also seemed to matter slightly, newer Secretaries of State tended to be more ready to try new ideas. Whether this result is because of age, more use of web 2.0 in campaigns, fresh ideas, or just coincidence is much too difficult to infer. However, it is an area which merits exploring. Additionally, recent redesigns seemed to be correlated with states adopting web 2.0 tools. Once again, this result might be because recent redesigns provide websites with a good timing to implement these measures, or perhaps this result might be because another extraneous factor exists. Nevertheless, this is another area that merits more research. States that used a combination of in-house and outsourced maintenance also appeared to have the most luck

implementing web 2.0 tools. This result could possibly be explained by the necessity of having someone continually update posts and information on web 2.0 tools. States with outsourced staff, who work on cases besides Secretary of State websites, have limited time to maintain social networking sites but in-house staff has enough time to make web 2.0 maintenance a priority. Similarly, the two states that use state tech staff, instead of their own personal staff, tended to have very strong websites but no web 2.0 features. Once again, this lack of web 2.0 features could be explained by time constraints and communication difficulties between offices. Interestingly, states with web 2.0 tools did not express budget concerns as much as states without them, but states without web 2.0 tools, which expressed budget concerns still had time to expand services offered and as a result had very strong function scores.

This discrepancy between willingness to invest in online services but not cheaper web 2.0 tools illustrates one of the most pertinent points of the study. Not one state interviewed was completely opposed to using web 2.0 tools, but many offices had concerns. Investing in online services has been shown time and time again to pay off and become an important part of state website revenue. In contrast, most states without web 2.0 tools did not know how they could make new media profitable. Moreover, many states were concerned about the effectiveness of the services. However, they all expressed interest, some enthusiastic interest, in eventually implementing web 2.0 ideas once strategies were more developed. Their reluctance to invest in an unproven technique is understandable. More importantly, this reluctance and skepticism is not unfounded.

Several of the states using web 2.0 tools expressed frustration with the results of their experimentation with the new tools. During the analysis of this study, two particular challenges emerged as standing in the way of Secretaries of State successfully implementing web 2.0 tools.

First, web 2.0 tools seem to cost more than they add in comparison to other aspects of the website. Adding online services, such as the ones scored by the functions section, have had repeated proven benefits. Many offices cited the financial benefits that putting services online have provided. In fact, several states discussed the redistribution or cutback of work that the services helped provide. Comparatively, in the portion of interviews discussing web 2.0 tools, no state had any exact figures on the benefits web 2.0 tools provide. Whereas, online services take an initial high short term investment to add to websites but save work in the long run, web 2.0 tools involve low cost upfront but create work in the long run because they need to be consistently updated and are rarely replacing services that already exist. Several states cited positive feedback about web 2.0 tools they received, when talking with constituents but otherwise the proven benefits of web 2.0 were minimal, illustrating that in comparison to Secretaries of State adding more functions or enhancing the features on their websites, expansion of web 2.0 services does not seem practical.

This lack of results can be partly contributed to the second challenge Secretaries of State face while adopting web 2.0 tools. As Kentucky Deputy Assistant Secretary Fugate accurately summarized, the Secretary of State office is not “sexy”(Fugate, 2010). In contrast to web 2.0 use by the President, daily twitters or posts on Facebook written by the Secretary of State are not going to be avidly watched and debated by the public. They are useful close to Election Day but otherwise have minimal impact. Offices are struggling to find their audiences. Because of the disparate nature of their duties, Secretaries of State must make a website that is usable for not only everyday citizens but also lawyers, corporations, press, candidates running for office, lobbyist, and more. Certain duties come in waves, for instance election departments face an influx of visitors close to registration deadlines and election days but on a year without any

major races, these departments see only a small amount of visitors. Other duties such as notary certifications occur year round. Many of the duties involving corporations and commercial enterprise happen more often than those involving everyday citizens, so trying to use social networking sites, which appeal to everyday citizens, all the time does make much sense.

However, other web 2.0 tools, which many Secretaries of State are unaware of, can actually help multiple audiences at once. Unlike online services, web 2.0 tools are not likely to replace work in offices but they can help in other ways by enhancing those services already in place, particularly by enhancing participation and transparency. These changes do not have to be large. For example, one of the most simple web 2.0 tools, blogs, could change and enhance FAQs. With areas open for comments, offices could potentially clarify problems faster for citizens and other entities by keeping a pulse on the dialogue and answering questions as they arise. Tools like Google calendar could help remind users to properly send in a form by the required deadline. Transparency is another area many states could make large strides to improve. Many Secretaries of State are in charge of archives, and registering multiple entities from businesses to nonprofits. They act as keepers of a public record of information that affect citizens' everyday lives. By using a web 2.0 service to post these documents, Secretaries of State could encourage discussion and awareness. Unlike a normal database, a website like Data.gov would allow them to manipulate and reflect upon data. Additionally, some Secretaries of State are also in charge of keeping state history and genealogy records. In these states, something like a wiki might be useful. Many Secretaries of State describe these genealogy databases as one of their most popular services offered. Why not increase participation, by creating a wiki that would allow citizens to add their personal histories to the history of the state?

The possibilities for use of web 2.0 tools are endless but current Secretaries of State are stuck in a box. Right now, Secretaries of State using web 2.0 tools are taking the first steps, but they are not necessarily traveling in the right direction. Nevertheless, dipping their toes the world of web 2.0 in is a good start. Although not many significant benefits were specifically mentioned about the implementation of web 2.0 tools, States also did not have any specific consequences of trying to use web 2.0 tools to discuss either. In short, as long as it does not draw too many resources away from other online additions such as transaction services, it never hurts to try new ideas. Still, to experience the best success, States need to start learning more about the different options available, and begin clearly defining goals and an audience, when initiating new web 2.0 ideas. As the introduction of more and more online services on Secretary of State websites illustrates, one success breeds more. The same rule applies for web 2.0 tools

Significance

The lessons gleaned from analyzing the Secretary of State web 2.0 use and online presences can be applied to other areas of e-government experimenting with web 2.0, too. This research set out to find if the use of web 2.0 tools on Secretary of State webpages is effective and discovered currently, it was not. More importantly, the results illustrated Secretaries of States do not have a definition of effective use of web 2.0 in their own offices, yet. However, this is not to say that the use of web 2.0 will never be effective. Web 2.0 innovations are currently the future of non-government websites. These tools have proven effective in campaigns and are gaining attention on larger federal webpages. It is a logical assumption to make that these innovations will eventually reach local and state government websites, too. In fact, they are appearing on many of these webpages already. Nonetheless, the first and foremost lesson learned from this study is an agency does not need to use web 2.0 tools to be a good website. Providing

accessibility to all, easy navigation, breadth of information and creating online services that save money for both the government and citizens are all more important to a website's success.

However, this study also illustrates that it does not hurt to experiment with web 2.0 tools, but there is a right way to introduce these web 2.0 and a wrong way to introduce web 2.0.

To be successful, this study shows the importance of clearly defining goals. Many Secretaries of State decided to experiment with web 2.0 tools because of success they had with them in campaigns or the press attention they see high profile websites like Whitehouse.gov receiving for using them. It is great to use these facets of politics for inspiration, but to truly succeed, web 2.0 tools need to be tailored to each individual agency's needs. Just because a successful campaign uses Facebook does not mean using Facebook works for everything. Microblogging and social networks are popular right now, but they are not the only type of web 2.0 tool a website can use. This study shows that there needs to be more education on different web 2.0 tools.

The analysis of Secretary of State Offices showed webpages that took the most risks with web 2.0 services had the most luck. For instance, the West Virginia Secretary of State not only used Twitter to report on candidate filings but also filmed a video of it all day in real time to keep citizens updated, and by using more than one service attracted more viewers and readers. What is also notable about this example is that West Virginia monitored the progress of the event. Instead of just relying on anecdotal feedback, the tech team carefully monitored how many people were following the video during different time periods. That way when the day was done, they could not only say the experiment was a success, but they could say why. Just like when the websites decided to invest in the addition of a new online service, standards for web 2.0 evaluation needs to be set and success needs to be monitored and critically examined.

Investing in web 2.0 tools might not cost millions of dollars like other online services but these tools are not going to succeed without being held to the same standards a more expensive investment might attract. Moreover, when choosing what service to offer, websites need to evaluate their audience. Those are lessons that apply to all websites

Lastly this study shows the importance of strong leadership and technology knowledge when introducing web 2.0 tools. Although many factors seem to be related to the development of web 2.0 implementation, passionate leaders seemed to be the most clear cut variable. Many Secretaries of State just do not understand what web 2.0 tools and new media are, but they are open to the possibilities. Probably the most surprising finding was how open every office was to possibly introducing web 2.0 tools someday, but they want to understand these tools and see proof that they work first. Consequently, one of the greatest lessons gleaned from this study is the significance of educating leaders about the benefits of web 2.0.

Improvements and Future Research

There are several aspects of this study that could be improved. In the first half of the study, there were several issues with the way scores were tallied. To begin, the criteria in the features section should be slightly altered. It was originally based upon Darrell West's past studies, but because of the more specific nature of this study, points would have been better served as weighted sections. Equal points were given to features that were not of equal value. For example, whether or not a website had a video on any of its pages was weighted the same as whether or not people with different connection speeds could access the website. In real life, the importance of accessibility trumps visual stimulation, but in the method used for evaluation in this study, they were both given the same point value. Additionally, some of the methods for

analyzing criteria were better than others. One of the greatest weaknesses of the feature section was the lack of resources to test whether W3C requirements were met or a digital signature option was available. Because the appropriate equipment to test these ideas cost too much, unless an explicit policy was written on the website a state did not receive credit. Also, the set of feature criteria failed to take the visual appearance of the website into account. Although appearance is not critical to a websites' success it can enhance or detract from a users' experience. However, it is difficult to measure visual appearance because it is so subjective. Nonetheless, some criteria to measure appearance more closely could have enhanced the results.

Secondly, the functions criterion was also slightly fallible. Different Secretaries of State have more or less duties. As a result, the amount of online services they can provide varies. For example, the Secretary of State of Maine is in charge of the Department of Motor Vehicles and the Secretary of State of Wisconsin is not, so of course the Wisconsin website will not have a service where an individual can register a vehicle online. To prevent states with more duties from overtaking states with fewer duties, the 10 service limit was set, but if the function section could be adjusted to account for the variety of duties each Secretary of State has by perhaps creating proportions for scores, this disparity would be less of an issue. In an ideal setting, this discrepancy in duties should be calculated some way into the scores.

Lastly, because the point values were assigned arbitrarily to each section without considering their relationship to other sections, a total ranking for states was difficult to calculate. Ultimately, all three scores were tallied together to come up with the total final score. This method meant the sections in which it was easier to reach a high score would factor more into the final tally. Although, this was not extremely detrimental to the final results of the study, the point assignments should have been analyzed more closely.

Above all, the greatest weakness of the study was in the second section. The sample size was too small. Choosing to look at only a few states was important to get a better understanding of more specific trends and patterns but these conclusions should have been followed by a larger survey of states, too. The 20 interviews conducted only hit the tip of the iceberg. Some great points came across but with so many states answering questions in so many different ways, data was hard to compare. For example, when asked about their budgets for their websites, different states answered with a variety of numbers. Some states gave percent of their budgets, some states gave estimations, and some states did not have a figure because it was accounted for in several parts of their budget. Furthermore, only 15 of the interviews were on the record. This small number meant there were only 15 states to choose from for the case studies. Although, it would have been difficult to conduct many more interviews, after analyzing the 10 states in the subset, a simple mail survey focusing on the most important variables from the interviews could have been sent out to all the offices. These results would have greatly enhanced findings. Sending such a survey would be excellent next step for research in the future.

There are many other directions future research could go, too. Besides the previous suggestions another useful study would be conduct the same methodology with other types of websites, such as comparing multiple Governor webpages, or multiple city websites. It would be particularly intriguing to see how dependent other websites are on conventional web 2.0 tools like social networking sites. Another useful study would be to see if a web 2.0 education classes would have any effect on the way public officials implement them. This study showed the importance of leadership and knowledge on the part of Secretaries of State, when using new tools. If the passion individual Secretaries of State felt about the Internet could be cultivated,

website quality could possibly increase. Additionally, a follow-up study a few years from now to assess Secretary of State websites progress would be useful. Finally, a study that measured citizens' opinions on web 2.0 use would greatly enhance any conclusions about the potential of such tools, particularly because so many Secretaries of State mentioned positive feedback as one of the greatest benefits to using web 2.0 tools.

Conclusion

In conclusion, Secretary of State websites show how far e-government has grown from its humble roots in the eighties and nineties, but also illustrates how far e-government has to travel. Secretary of State websites adequately provide information and services to the public, but these webpages are not fully using their capabilities. By analyzing all 47 states, the future effectiveness of web 2.0 tools remains unclear, but the use of web 2.0 tools appears to be growing. Today, web 2.0 is the next new thing, tomorrow, these tools could be outdated. It is the government's job to keep abreast of these new innovations.

APPENDIX I

STATE WEB DESIGN PROFILE PRELIMINARY SCORE SHEET

State _____ Secretary of State Name _____

Web Address _____ Date of Publication _____

Contact Information _____

FEATURES	
TYPE OF FEATURE	YES/NO
Publications	
Databases	
Audio clips	
Video clips	
Foreign language access	
W3C disability access	
Privacy policies	
Security policies	
Allowing digital signatures on transactions	
Email contact information	
Areas to post comments	
Option for email updates	
Allowing for personalization of the website	
Office phone number	

Office address	
External links to other sites	
Toll-free phone number	
Technical assistance	
Subject index	
Frequently asked questions	
Search capability	
Push technologies that automatically send information to recipients	
Agency name displayed on every page	
Allow for visitors with slow connection speeds	
<i>TOTAL</i>	

FUNCTIONS		
TYPE OF SERVICE	INTERACTION	TRANSACTION

<i>TOTAL</i>		

WEB 2.0 TOOLS		
TYPE OF TECHNOLOGY	NUMBER OF SERVICES	DESCRIPTION OF SERVICES
Blogs		
Wikis		
Video Sharing (and Multimedia)		
Photo Sharing		
Podcasting		
Virtual Worlds		
Social Networking Sites		
Syndicated Web Feeds		
Mashups		
Widgets, Gadgets, Pipes		
Social Bookmark & News (Sharing, Tagging) Sites		
Microblogging, Presence Networks		
<i>TOTAL</i>		

APPENDIX II

LIST OF ON-THE-RECORD INTERVIEWS

- Arp, Pat. *Wyoming Deputy Secretary of State* (January 29, 2010).
- Bromley, Ted. *Connecticut Secretary of State Attorney* (January 30, 2010).
- Brunner, Jennifer. *Ohio Secretary of State* (January 30, 2010).
- Caranci, Paul. *Rhode Island Deputy Secretary of State* (January 30, 2010).
- Dunlap, Matthew. *Maine Secretary of State* (January 29, 2010).
- Egerdal, Laura. *Missouri Director of Communications* (January 30, 2010).
- Fugate, Leslie. *Kentucky Assistant Deputy Secretary* (January 29, 2010).
- Hawkins, Carder. *Arkansas Director of Elections* (January 29, 2010).
- Haynes, Haley. *North Carolina Deputy Secretary of State* (February 16, 2010).
- Miller, Ross. *Nevada Secretary of State* (February 18, 2010).
- Murphy, K. Kevin. *Pennsylvania Department of State Director of Public Relations* (February 16, 2010).
- Seacrest, Gary. *Nebraska Secretary of State Communications Coordinator* (February 19, 2010).
- Tennant, Natalie. *West Virginia Secretary of State* (February 1, 2010).

APPENDIX III
LIST OF STATE SCORES

State	Feature	Function	Web 2.0	Total
Alabama	15	3	1	19
Arizona	14	8	1	23
Arkansas	19	17	5	41
California	15	6	3	24
Colorado	13	9	1	23
Connecticut	11	2	0	13
Delaware	14	8	0	22
Florida	11	3	0	14
Georgia	13	4	1	18
Idaho	11	8	0	19
Illinois	12	16	0	28
Indiana	20	9	4	33
Iowa	11	4	0	15
Kansas	11	12	0	23
Kentucky	18	16	4	38
Louisiana	12	0	0	12
Maine	15	20	0	35
Maryland	11	0	0	11
Massachusetts	12	5	0	17
Michigan	16	7	1	24
Minnesota	17	3	3	23
Mississippi	14	6	0	20
Missouri	13	10	0	23
Montana	16	8	0	24
Nebraska	16	1	0	17
Nevada	15	6	0	21
New Hampshire	9	4	0	13
New Jersey	11	2	0	13
New Mexico	13	4	1	18
New York	12	4	0	16
North Carolina	8	4	0	12
North Dakota	14	0	0	14
Ohio	16	6	3	25
Oklahoma	9	3	0	12
Oregon	11	8	4	23
Pennsylvania	13	0	0	13

Rhode Island	13	6	2	21
South Carolina	11	2	0	13
South Dakota	9	0	0	9
Tennessee	14	2	1	17
Texas	16	4	1	21
Vermont	15	0	0	15
Virginia	10	0	1	11
Washington	17	6	7	30
West Virginia	18	2	7	27
Wisconsin	11	2	0	13
Wyoming	14	4	0	18

Works Cited

- Almacy, D. (2009, April 20). (E. Hellman, Interviewer)
- Arp, P. (2010, January 29). Wyoming Deputy Secretary of State. (E. Hellman, Interviewer)
- Blackstone, E. A., Bognanno, M. L., & Hakim, S. (2005). *Innovations in E-Government*. Lanham: Rowman & Littlefield Publishers, Inc.
- Blue State Digital. (n.d.). *Case Study: My.BarackObama.com*. Retrieved April 20, 2009, from http://www.bluestatedigital.com/casestudies/client/obama_for_america_2008/
- Boatright, R. G. (2008). Fundraising--Present and Future. In R. Semiatin, *Campaigns on the Cutting Edge* (pp. 10-26). Washington D.C.: CQ Press.
- Bowers, S. R. (2010, January 30). Indiana Deputy Secretary of State. (E. Hellman, Interviewer)
- Boyd, D. M. (2007). *Social Network Sites: Definition, History, and Scholarship*. Retrieved February 1, 2009, from <http://jcmc.indiana.edu/vol13/issue1/boyd.ellison.html>
- Bromley, T. (2010, January 30). Connecticut Secretary of State Attorney. (E. Hellman, Interviewer)
- Brunner, J. (2010, January 30). Ohio Secretary of State. (E. Hellman, Interviewer)
- Campbell-Kelly, M., & Aspray, W. (2004). *Computer: A History Of The Information Machine*. New York: Westview Press.
- Caranci, P. (2010, January 30). Rhode Island Deputy Secretary of State. (E. Hellman, Interviewer)
- Ceaparu, I., & Shneiderman, B. (2002, June). Improving Web-based Civic Access: A Case Study of the 50 States. *IEEE International Symposium on Technology and Society* .
- Cornfield, M. (2005). *Politics Moves Online*. Washington D.C.: Brookings Institute.
- Davis, R. (1999). *The Web of Politics*. New York: Oxford University Press.
- Davis, S., Elin, L., & Reeher, G. (2002). *Click On Democracy*. Cambridge: Westview Press.
- Digital Cities Survey*. (2008). Retrieved October 15, 2009, from Center for Digital Government: <http://www.govtech.com/dc/surveys/cities/89/2008>

Digital States Survey. (2008). Retrieved October 15, 2009, from Center for Digital Government: <http://www.centerdigitalgov.com/survey/61/2008>

Dijk, K. H. (2000). *Digital Democracy*. Thousand Oaks: SAGE Publications.

Dunlap, M. (2010, January 29). Maine Secretary of State. (E. Hellman, Interviewer)

Egerdal, L. (2010, January 30). Missouri Director of Communications . (E. Hellman, Interviewer)

Eggers, W. D. (2005). *Government 2.0*. Lanham: Rowman & Littlefield Publishers, Inc.

Federal Web Managers Council. (2006, February 6). *Federal Laws and Regulations*. Retrieved April 20, 2009, from http://www.usa.gov/webcontent/reqs_bestpractices/laws_regs.shtml

Federal Web Managers Council. (2009, September 24). *Social Media and Web 2.0 in Government*. Retrieved October 6, 2009, from WebContent.gov: http://www.usa.gov/webcontent/technology/other_tech.shtml

Fugate, L. (2010, January 29). Kentucky Assistant Deputy Secretary. (E. Hellman, Interviewer)

Graf, J. (2008). New Media--The Cutting Edge of Campaign Communications. In R. Semiatin, *Campaigns on the Cutting Edge* (pp. 48-68). Washington DC: CQ Press.

Hawkins, C. (2010, January 29). Arkansas Director of Elections. (E. Hellman, Interviewer)

Haynes, H. (2010, February 16). North Carolina Deputy Secretary of State. (E. Hellman, Interviewer)

Heeks, R., & Bailur, S. (2006, August 17). *Analyzing e-government research: Perspectives, philosophies, theories, methods, and practice* . Retrieved December 1, 2009, from Science Direct: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6W4G-4KNKBTC-1&_user=10&_coverDate=04%2F30%2F2007&_alid=1143479502&_rdoc=1&_fmt=high&_orig=browse&_sort=d&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=328457a935926366e1f0e6fd0d6

Helbiga, N., Gil-García, J. R., & Ferro, E. (2006, August 17). *Understanding the complexity of electronic government: Implications from the digital divide literature*. Retrieved November 19, 2009, from Science Direct: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6W4G-4V2NBY4-4&_user=201547&_origUdi=B6W4G-4B6SK9R-5&_fmt=high&_coverDate=01%2F31%2F2009&_rdoc=1&_orig=article&_acct=C000014058&_version=1&_urlVersion=0&_userid=201547&md5=6b37188c9d657cb85049e6025

Hindman, M. (2009). *The Myth of Digital Democracy*. Princeton: Princeton University Press.

- Johnson, C. (2009, May 1). (E. Hellman, Interviewer)
- Kamensky, J. (1999, January). *A Brief History*. Retrieved December 7, 2009, from National Partnership for Reinventing Government:
<http://govinfo.library.unt.edu/npr/whoweare/history2.html>
- Kee, T. (2009, March 3). *paidContent.org - Obama Drops YouTube For Akamai On Whitehouse.gov*. Retrieved April 16, 2009, from Washington Post:
<http://www.washingtonpost.com/wp-dyn/content/article/2009/03/02/AR2009030202494.html>
- Kentucky Secretary of State*. (2010). Retrieved January 30, 2010, from <http://www.sos.ky.gov/>
- Lafollette, D. (2010, February 2010). Wisconsin Secretary of State. (E. Hellman, Interviewer)
- Mahler, J., & Regan, P. M. (2009, August). *Blogs as Public Forums for Agency Policymaking*. Retrieved 2009 20, September, from Brookings:
http://www.brookings.edu/papers/2009/08_blogs_mahler_regan.aspx
- McCreary, M. (2009, April 25). (E. Hellman, Interviewer)
- McGeehan, A. (2010 , January 29). Texas Director of Elections. (E. Hellman, Interviewer)
- Merrit, K. (2009, January 24). *How Obama Will Use Web Technology*. Retrieved February 16, 2009, from Washington Post: <http://www.washingtonpost.com/wp-dyn/content/article/2009/01/24/AR2009012400646.html>
- Miles, S. (1998, January 2009). *A Man, a Plan, a Challenge*. Retrieved December 10, 2009, from Wired: <http://www.wired.com/politics/law/news/1998/01/9939>
- Miller, R. (2010, February 18). Nevada Secretary of State. (E. Hellman, Interviewer)
- Moon, M. J. (2002, August). *The Evolution of E-Government among Municipalities: Rhetoric or Reality?* . Retrieved October 7, 2009, from JSTOR:
<http://www.jstor.org/stable/3110357?cookieSet=1>
- Murphy, K. K. (2010, February 16). Pennsylvania Department of State Director of Public Relations. (E. Hellman, Interviewer)
- National Association of Secretaries of State. (2005, November 15). *NASS eGov Primer for Secretaries of State*. Retrieved April 16, 2008, from National Association of Secretaries of State:
http://nass.org/index.php?option=com_content&task=view&id=108&Itemid=230
- Office of Administration. (n.d.). *Freedom of Information Act*. Retrieved April 20, 2009, from <http://www.whitehouse.gov/administration/eop/oa/foia/>

Online Activities. (2009, December 4). Retrieved November 15, 2009, from Pew Internet and American Life Project: <http://www.pewinternet.org/Static-Pages/Trend-Data/Online-Activities-Total.aspx>

Online Activities. (2009, December 4). Retrieved November 15, 2009, from Pew Internet and American Life Project: <http://www.pewinternet.org/Static-Pages/Trend-Data/Online-Activities-Total.aspx>

O'Reilly, T. (2005, September 30). *What is Web 2.0*. Retrieved January 29 2009, 2009, from <http://www.oreillynet.com/pub/a/oreilly/tim/news/2005/09/30/what-is-web-20.html?page=1>

Rainie, L., & Smith, A. (2009, July 15). *The Internet and the Recession*. Retrieved 16 2009, November, from Pew Internet and American Life Project: <http://www.pewinternet.org/Reports/2009/11-The-Internet-and-the-Recession.aspx>

Rash, W. (1997). *Politics on the Nets*. New York: W.H. Freeman and Company.

Reddick, C. G., & Frank, H. A. (2006, November 1). *The perceived impacts of e-government on U.S. cities: A survey of Florida and Texas City managers*. Retrieved November 23, 2009, from Science Direct: http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6W4G-4M7VB36-2&_user=201547&_coverDate=07%2F31%2F2007&_alid=1143479502&_rdoc=25&_fmt=high&_orig=mlkt&_cdi=6542&_sort=v&_st=17&_docanchor=&view=c&_ct=3288&_acct=C000014058&_version=1&_urlVersion=0&_

Rubaii-Barrett, N., & Wise, L. R. (2008, June 1). *Disability Access and E-Government*. Retrieved October 15, 2009, from Journal of Disability Policy Studies: <http://dps.sagepub.com/cgi/content/abstract/19/1/52>

Scola, N., & Fine, A. (2008, October 6). *Twitter: An Antidote to Election Day Voting Problems?* Retrieved December 10, 2009, from Personal Democracy Forum: <http://personaldemocracy.com/node/5810>

Seacrest, G. (2010, February 19). Nebraska Secretary of State Communications Coordinator. (E. Hellman, Interviewer)

Tennant, N. (2010, February 1). West Virginia Secretary of State. (E. Hellman, Interviewer)

Tolbert, C. J., & Mossberger, K. (2006). The Effects of E-Government on Trust and Confidence in Government. *Public Administration Review*. Washington: May/Jun 2006. Vol. 66, Iss. 3; p. 354 (16 pages) , 354-370.

Trippi, J. (2004). *The Revolution Will Not Be Televised*. New York: Harper Collins.

Twitter. (2009). *About Twitter*. Retrieved December 10, 2009, from <http://twitter.com/about#about>

Twitter Vote Report. (2008). Retrieved December 10, 2009, from <http://blog.twittervotereport.com/press/>

Vargas, J. A. (2007, May 4). *Meet the OPOs*. Retrieved April 25, 2009, from Washington Post: <http://www.washingtonpost.com/wp-dyn/content/article/2007/05/03/AR2007050302546.html>

Vargas, J. A. (2008, August 20). *Obama's Wide Web*. Retrieved February 20, 2009, from Washington Post: http://www.washingtonpost.com/wp-dyn/content/article/2008/08/19/AR2008081903186.html?hpid=topnews&sid=ST2008081903613&s_pos=

West Virginia Secretary of State. (2010). Retrieved January 25, 2010, from <http://www.sos.wv.gov>

West, D. M. (2009, June). *Comparing Technology Innovation in the Private and Public Sectors*. Retrieved October 11, 2009, from Brookings Institute: http://www.brookings.edu/papers/2009/06_technology_west.aspx

West, D. M. (2005). *Digital Government*. Princeton: Princeton University Press.

West, D. M. (2008, August 17). *Improving Technology Utilization in Electronic Government around the World*. Retrieved October 20, 2009, from Brookings: http://www.brookings.edu/reports/2008/0817_egovernment_west.aspx

White House Open Government Initiative. (n.d.). *Open Government Innovations Gallery*. Retrieved December 10, 2009, from <http://www.whitehouse.gov/open/innovations>

Wikipedia:About. (2009, November 19). Retrieved November 19, 2009, from Wikipedia: <http://en.wikipedia.org/wiki/Wikipedia:About>

Winograd, M., & Hais, M. D. (2008). *Millennial Makeover*. New Brunswick: Rutgers University Press.