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Status of e-Government in Georgia

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ABSTRACT

As e-commerce facilitated the movement of businesses from bricks and mortar interfaces, Internet and communication technology are moving e-government to a point where all citizens will be able to access government services in their homes. This paper reports the status of e-government in Georgia (USA), with particular attention to stages of e-government development in the state. Currently, only 51 percent of counties in Georgia have official e-government web sites. Generally, rural counties have not developed their official e-government web sites as much as have counties in metropolitan areas.

Key words: e-government, county government, web site content, web site design, stages of e-government development

INTRODUCTION

It is now recognized that the shift from traditional government to e-government is an important public policy issue for more technologically advanced countries like the United States. The emergence and viability of e-government is a direct result of increasing Internet use all over the world. In the United States, statistics for 2002 indicate that 63% of the adult population (or a little over 128 million people) were online (Madden, 2003). The percentage of women online (61% as of August 2003) is catching up with the percentage of men online (65% as of August 2003). It is interesting to note that, in sheer numbers, more women are online in the United States since women outnumber men as per population statistics for the country (U.S. Census Bureau, 2002; Madden, 2003). This implies that both, e-government and e-commerce retailers, need to be aware that there are increasing numbers of women online in the United States.

Women are more likely than men to use the Internet to obtain work-related information, especially government-related information. Obtaining information for vacations and recreation, doing research for homework, discovering what services governmental agencies provide, and seeking information about public policy top the list of reasons people use government web sites (Larsen & Rainie, 2002). While there are significant differences in how people use the Internet, one of the fastest growing areas has been online shopping. Approximately 61% of Internet users in the United States had purchased products online as of December 2002 (Madden, 2003). While e-commerce has grown steadily, despite a general economic slump and lower consumer confidence, the growth has not been even. African Americans are less likely, for example, to make online purchases. In addition to ethnicity, income, education, gender, and on-line experience have a direct impact on how people use the Internet; and this, in turn, affects the likelihood of e-commerce purchases (Madden, 2003). These factors are also likely to have a similar impact on the use of e-government facilities. Since interactions through the web are not face-to-face, this increases the perceived and actual risks associated with online transactions (Castelfranchi & Tan, 2002). Many surveys of Internet users indicate that consumer trust is a major determinant of whether an online exchange will occur (Lee and Turban, 2001).

Movement from e-Commerce to e-Government

Studies of e-commerce and research into consumer- and citizen-related Internet issues imply that a successful

implementation of e-government goes beyond implementing a new web-based information technology system. It involves major changes in the way governmental agencies operate and conduct business. Governmental agencies have to be able to meet the many challenges and manage the risks presented by e-government. In addition to the usual funding, legal, security, privacy, and information technology issues, the most critical issues for e-government success are citizen readiness and accessibility (Audit Office of New South Wales, 2001). Citizens with restricted access to electronic services and/or limited knowledge of the use of electronic services will be hard to serve. This implies that there will be, at least for the near future, the added expense and burden of maintaining dual systems: on-line and traditional. Added to these dual interfaces, is the issue of a legally required paper trail in government transactions that makes a complete shift to the on-line model almost impracticable.

At the very least, an e-government web site should inspire confidence and present an image that conveys the message that the agency cares about the web site. Web-authoring government agencies should ensure that information is presented clearly and correctly (without factual, typographical, grammatical, or spelling errors). In addition, agencies should ensure that web sites are easy to use and easy to navigate. Currency of information is also an issue, as is a clearly stated policy regarding privacy of information. E-government web sites should clearly indicate what services are available on-line, with easy-to-follow directions for transacting business. Web sites should also provide means for citizens to be able to get in touch with service providers via clearly presented information regarding name, address, telephone number, and e-mail address of the contact person(s). Finally, visitors to web sites should be able to provide feedback and comments, which should be used to fine tune and improve e-government to serve citizens better (Cyberspace, 2001).

Stages of e-Government Development

In the United States, many state governments are attempting to emulate the federal government’s success in adopting e-government. This is a fairly recent phenomenon, and various state governments are at various stages of development. E-government evolves through six stages (Hiller & Bellanger, 2001; Yang & Paul, 2003) as shown in Table 1. It is interesting that few e-government web sites achieve the highest level of development described in Stage 6—Participation.

THE STUDY

This paper examines the status of e-government in Georgia. E-government web sites in Georgia are examined and evaluated on a large number of parameters to assess where they fall on the e-government development spectrum.

Stage	Characteristics
Information	Web site provides information to the public; sites are generally simple and uncomplicated.
Promotion	Web site is promoted to the public; sites promote cooperation and linkages with other networks including other government agencies.
Two-Way Communication	Web site allows two-way communication between government officials and citizens via e-mail and other on-line mechanisms.
Transaction	Web site transcends the information delivery stage and becomes an e-commerce type site; sites allow citizens to pay taxes on-line, apply for and renew licenses on-line, pay speeding tickets and other fines on-line, etc.
Integration	Web site integrates all government information and services, both local and federal; sites allow citizens to assess through a single portal.
Participation	Web site provides services on-line, such as on-line voting; sites have a high level of security and privacy to ensure citizens’ trust in the on-line voting process and outcomes.

Table 1: Stages of e-Government Development.

Methodology

A data collection instrument was developed, based on e-commerce and e-government literature. The instrument was piloted with the primary data collector to ensure data clarity, usefulness, and organization.

The data for this study were collected from 159 counties in the State of Georgia (USA). Through investigation during the initial data collection, which began in April 2005, researchers determined that 51 percent of Georgia’s county governments had official web sites. This study focuses on those counties as a way to ascertain the status of e-government in Georgia. Researchers randomly selected 25 percent of counties with official web sites as the sample. This study is unique in that it is the only study to report the status of e-government development in Georgia.

Based on data collected and statistical analysis, the status of e-government in Georgia is defined. The results are presented with implications for development and refinement in the next sections.

FINDINGS

Scope and Coverage

County web sites do not typically provide a clear statement of scope. In the sample, only 20% provided citizens with a clear statement of purpose or scope. Coverage of government information, however, was much more complete. All web sites offered information regarding county departments, council/commission personnel, contact information (telephone numbers and e-mail addresses). Data regarding basic contact information available on county web sites is displayed in Table 2.

Contact	Percentage
Telephone numbers	95
e-Mail addresses	85
Web master e-mail link	70
On-line calendars	65
On-line directories	60
On-line schedules	50
Policy input	5

Table 2: Contacts Information Availability.

Most counties in the sample offer citizens information regarding council/commission meetings, including their locations, addenda, and minutes. Table 3 indicates that 65 percent of county web sites post meeting schedules and minutes/notes of meetings online.

Meeting Context	Percentage
Meeting schedules available online	65
Minutes/notes of meetings available online	65
Meeting location clearly stated	60
Agendas available online	60
Live-feed of meetings available	5
Ability to re-play meeting from web site	5

Table 3: Information Regarding County Council/Commission Meetings.

Table 4 displays data on services provided for citizens. Most county web sites in the sample allow citizens to download publications and forms (75%), while a majority of web sites also solicit citizen feedback (55%) and allow citizens to access recreation information (50%).

Recreational Information	Percentage
Allows citizens to download publications and forms	75
Solicits citizen feedback	55

Allows citizens to access recreation information	50
Provides information concerning local industries and employment	35
Allows citizens to local school information online	35
Allows citizens to link to specific schools	30
Provides links to specific industry and major employer web sites	20

Table 4: Web Site Coverage in County Web Sites.

Interactivity

Only 15% of counties in the sample allow transaction processing, but 30% allow citizens to complete forms and submit them online, apply for jobs online, and report problems or lodge complaints online. Table 5 shows interactivity components for Georgia county web sites.

Citizens are allowed to:	Percentage
Complete forms and submit them online	30
Apply for jobs online	30
Report problems or complaints	30
Conduct information searches	25
Make secure payments online	15
Complete satisfaction surveys	10
Request services online	10

Table 5: Level of Interactivity.

Usability

Most county web sites offer multiple links to appeal to the needs of citizens. County web sites in the sample provide links to Frequently Asked Questions (50%), provide various demographic data (45%), and links to emergency preparedness information (45%). Data regarding usability of county web sites are presented in Table 6.

Use	Percentage
Has FAQs section	50
Provides demographic data	45
Provides link to emergency preparedness information	45
Provides traffic/construction updates	25
Offers web site in other languages	10
Offers geographic information systems data/mapping	5
Provides e-voting	0

Table 6: Usability of County Web Sites.

Links to Other Governmental Web Offerings

In addition to county-related information, web designers generally incorporate links to state government web sites (70%). Links to federal government web sites include links to the United States House of Representatives, the United States Senate, and the White House. Table 7 displays the range of government-related links on Georgia county web sites.

Government Links	Percentage
State government web sites	70
Local government web sites	40
Federal government web sites	45

Table 7: Government-Related Links on Georgia County Web Sites.

Design and Aesthetics

All counties use consistent format and layout throughout their web sites and use multicolored pallets. No errors in grammar, punctuation, or spelling were detected. Table 8 displays design characteristics for county web sites.

Aesthetic Factor	Percentage
Consistent design	100
Multi-color format	100
Error free	100
Legible (appropriate typeface, type size, color)	95
Pictures and graphics helped to create appealing web site	90
Site map	15

Table 8: Design of County Web Sites.

In addition to consistent format and layout, counties use pictures and graphics to create appealing web sites. A major design limitation, however, is the lack of a site map or index to direct users.

Means calculated for web site design provide a measure of how well web sites were designed. The range of means for the following criteria was based on a five-point scale, ranging from 1 (highly acceptable/appropriate) to 5 (highly not acceptable/inappropriate). Table 9 indicates acceptable/appropriateness levels for aesthetic, easy of use, and content criteria.

Criterion	Mean
Aesthetic	1.8
Ease of use	1.95
Content value	2.45

Table 9: Design Criteria for County Web Sites.

Metadata

Most county web sites ensure citizens can access government information through relevant searches by providing metadata. Document titles in URLs (90%) are used most often. Data regarding the use of metadata in Georgia county web sites is displayed in Table 10.

Metadata are offered through the use of:	Percentage
Document titles	90
HTML tags	85
Sectional headings	80
Titles in Windows Title Bar	60

Table 10: Use of Metadata in County Web Sites.

County web sites designers use headings to provide descriptive content and relevant information in the Windows Title Bar to facilitate citizen retrieval of information.

Privacy and Security

Information regarding legal information, i.e., copyright, security, public records notices, were not well exhibited on Georgia county web sites. Table 11 shows copy, privacy, and security information.

Privacy Factor	Percentage
Copyright notice	45
Privacy notice	20
Security notice	10
Liability notice	10
Confidentiality notice	5
Georgia open records notice	5

Table 11: Privacy and Security

Stage of e-Government

Most of the Georgia counties in the sample are in the early stages of e-government development. Over a third are in stage one (35%), while the majority are in stage two (40%). While only 25% are in stage three, their movement toward stage four is undeniable. The current status of e-government development in Georgia counties appears in Table 12.

e-Government Development and Population

As county populations continue to grow, so too will the use of Internet technology in e-government web sites. Table 13 lists major correlation coefficients between county population (based on 2003 census) and various aspects of web development. There is a strong correlation between the size of a county in terms of population and its current stage of e-government development (.728) and whether a county web site has a site map (.958).

Stage	Percentage
Information stage	35
Promotion stage	0
Two-way communication stage	40
Transaction stage	25
Integration stage	0
Participation stage	0

Table 12: Stage of e-Government.

Population and:	Coefficient
Presences of a site map in county web site	.958
Availability of information regarding traffic and constructions updates	.755
Stage of e-government development	.728
Ability to submit form online	.737
Availability of information regarding major industries and employers	.592

Table 13: Significant Correlation Coefficients of e-Government Development.

DISCUSSION

Counties selected in the random sampling for participation in this study generally follow those discussed in the literature as providing sufficient contact information, including telephone numbers, e-mail addresses, and directories to allow citizens to access governmental information any time, any where. A report on e-government trends by the National League of Cities (2005) indicated that 92 percent of city web sites maintain contact information and directories. In fact, the report mentions that directories with telephone numbers are still more common than directories of personnel and departmental e-mail addresses.

Georgia counties offer a wide variety of information, ranging from governmental meeting information (schedules, locations, agendas, and minutes) to broad citizen-based services, such as downloadable reports and forms to information about public schools and specific industries and major employers. No county web site in the sample offers services sufficient to serve the "virtual citizen", but a few are quite well developed. Citizens can view, for

example, videos of county meetings online. Citizens can also link to various other local governmental web sites—including independent departmental web sites and municipality web sites, state government web sites, and federal government web sites.

All web sites in the sample are appealing and show evidence that their contents are appropriate. These web sites allow citizens to locate information through well-planned use of metadata in content appropriate html tags and in Windows Title Bar heading, document names, and sectional headings. Although these web sites enable citizens to transact business and contact authorities, in most cases on a limited basis, all can be improved through modification to empower citizens to participate fully in government any time, any place. It is unlikely that e-government in Georgia will keep pace with the expectation of e-government growth expressed by Leith & Morison (2004) for the United Kingdom—the aim was to have web access become the dominant interface between citizens and government by 2005. Counties across the United States can implement, however, a constant development process where web sites will grow to meet the citizen demand as the population continues to evolve in their use and expectations of how the Internet can serve to enrich and empower their lives.

LIMITATIONS

There are several limitations to the generalizability of these findings. Although the survey was conducted on a 25% random sampling of the 81 official county level e-government web sites in Georgia, a census study would provide a more conclusive picture. The survey is limited to Georgia, but development in other states could well reflect the development in Georgia. The findings match well, however, those of similar studies found in the literature of e-government and provide a glimpse of the status of e-government development in Georgia.

CONCLUSION

This study is a way of looking at county e-government web development and understanding how public access to information and resources can modernize government by applying theory in reality. Web designers should continuously monitor citizen information (provided in e-mails, requests, complaints, and online surveys) in order to meet the future needs of citizens to ensure their designs address citizen needs. They can better inform citizens regarding web sites scope and purpose, provide additional links to information and services, and move into higher levels of e-government development.

Recommendations for Future Research

Future research will include peering into the thoughts of e-government users in order to determine citizen reaction to e-government services and citizen expectations for future development of e-government sites. Demographic data may provide insight into citizens' demands—age, gender, educational level, and work experience, for example, may well shape differences in citizen expectation and use.

We would like to survey county web-site developers to determine their perceptions of citizen expectation and use of e-government services. Questions regarding trust and security issues, functionality of on-line services, and planning for citizens who have physical limitations that reduce their use of on-line e-government services could be excellent starting points for future research. As there seems also to be differences between the use of Internet services by men and women and diversity issues regarding race differences, researchers would like to see studies of e-government by race and gender to determine if real differences exist between these groups.

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