Civic Engagement and Local E-Government: Social Networking Comes of Age

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This study examined features on local government websites that could contribute to civic engagement, through 1) information about government and community, and 2) through interactive or participatory opportunities online. The research is based on content analysis of government websites in the 75 largest U.S. cities and 20 largest Illinois cities between March and the beginning of May 2011. Cities were ranked using a composite score with 94 criteria for council manager governments, and 90 for governments without city mangers. In an earlier 2009 study, cities were scored on 78 items if they had a city manager and on 74 otherwise. We discuss the main results for the 2011 study (with cities ranked on 90-94 measures), and then assess changes between 2009 and 2011. To accurately describe these changes over the two-year period, we compare city scores and rankings only on the original 74-78 criteria for 2009 and 2011. This comparison demonstrates that there has been some change overall in the two years, mostly because cities that were further behind have moved up in the ranking. While social networking was the category with the most change, local government websites have improved slightly in a few other areas, such as information on government organization nationally, and in policy and neighborhood information in Illinois.

How has local e-government changed in the past few years? The unequivocal answer is social networks, on a large scale. Our study of local government websites in 2011 showed that social network adoption increased several times over since 2009, with both Facebook and Twitter used by nearly 9 out of 10 of the largest U.S. cities. A less prevalent but also potentially important change is the emergence at the local level of open data portals, another new tool associated with Web 2.0, or the "interactive web." As of yet, however, the presence of open data portals is still quite limited, found online for only 12 of the 75 largest U.S. cities (16%), and in only one Illinois city (Chicago).[1]

In 2011, social networks were much more common across local government websites than in 2009. Among the 75 largest U.S. cities, 87% used Twitter, in comparison with 25% two years before. Facebook was also used by 87% of the U.S. cities, with an even larger increase from 13% in 2009. YouTube links appeared for 75% of major U.S. cities, up from 16% in 2009. This is a rapid jump for all of these sites, which increased by 250% to over 600% during this two-year period.

Likewise, each of these three popular social networks was used by 55% of the 20 largest Illinois cities on their websites, compared to 15% for Twitter, and 10% for Facebook and YouTube in 2009. The Illinois cities are mostly smaller (with the exception of Chicago, which appears on both lists). A somewhat smaller percentage of Illinois websites included social networks, but the magnitude of increase was similar.

This study examined features on local government websites that could contribute to civic engagement, through 1) information about government and community, and 2) through interactive or participatory opportunities online.   E-government has a variety of purposes, including service delivery. But, it also has the capacity to make government information more easily accessible to citizens, as well as to provide opportunities to communicate with or interact with government. Information is critical for transparent and accountable government, as well as for providing the knowledge necessary for civic engagement. Communication with citizens, through a variety of online tools, can potentially foster more responsive government.

The research is based on content analysis of government websites in the 75 largest U.S. cities and 20 largest Illinois cities, conducted between March and the beginning of May 2011. A number of studies have indicated that larger local governments are more likely to be first adopters of digital government innovations and to have more sophisticated websites (e.g. Ho 2002; Moon 2002). By selecting the largest cities, we are taking the pulse of those that could be expected to be at the forefront of new developments.

The 2011 study included 94 criteria for council-manager governments (90 for governments without a city manager). In 2009, cities were scored on 78 items if they had a city manager, and on 74 otherwise. The increased number of criteria for 2011 partly reflects new developments, such as open data portals. Additionally, the 2011 study tracked whether local governments allowed comments to be

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[1] In addition to Chicago, the other 11 cities with open data portals available are Baltimore, Boston, Honolulu, Louisville, Milwaukee, New York, Philadelphia, Portland, Seattle, Washington DC, and San Francisco.

posted on various platforms, and whether the content posted was related to public policy issues (in contrast with service delivery).

In this report, we discuss the main results for the 2011 study (with cities ranked on 90-94 measures), and then assess changes between 2009 and 2011. To accurately describe these changes over the two-year period, we compare city scores and rankings only on the original 74-78 criteria for 2009 and 2011. Because the full 2011 instrument has more categories associated with interactive Web 2.0 features, it places more weight on these measures, and the city rankings are somewhat different for the complete 2011 results than for the 2009-2011 findings. Comparing cities on the same criteria between 2009 and 2011 demonstrates that there has been some change overall in the two years, mostly because cities that were further behind have moved up in the ranking. While social networking was the category with the most change, local government websites have improved slightly in a few other areas, such as information on government organization nationally, and in policy and neighborhood information in Illinois.

Both of these changes – the rapid diffusion of social network use among local governments, and the emergence of open data portals – present new *possibilities* for transforming relationships between government and citizens. The open data portals make more information available to citizens, and invite the development of applications to improve the use of the data. Social networks open a new venue for online participation. Ultimately, the impact of these new tools depends upon many factors other than technology – the quality of the information, local government institutions and practices, and citizen response.

SOCIAL NETWORKS AND WEB 2.0 BETWEEN 2009 AND 2011

Rapid growth in local government use of social media reflects the increased participation of the population on sites like Facebook, Twitter, YouTube, and Flickr. A recent survey by the Pew Internet and American Life Project (Hampton et al. 2011) found that 59 percent of American adults used at least one social networking site. This percentage has more than doubled since 2008. Most recent growth has occurred among adults over age 35, who now account for over half of social network users. Prior to 2008, social media were most popular in the under-25 age group. Social networks have come of age, and so has their presence in local government websites.

Social networking sites are defined by several characteristics, which include creation of a public profile within a defined system, and the ability to connect with others (Boyd and Ellison 2008). They involve user-generated content and are part of a larger category of technologies known as Web 2.0 (Kaplan and Haenlein 2010). Tim O'Reilly coined the term in 2005 to distinguish newer Internet technologies that feature generation of content by the user, participation-enabling web structures, collective intelligence, and scalability (O'Reilly 2005).

Box 1. City of Chicago: Social Media
The city of Chicago uses several different types of social media technology to connect with citizens. The city lists the social media center on its main webpage and currently has an official presence on seven different social media websites. These include popular sites like Facebook, Twitter and YouTube, which have accounts by the mayor and city clerk as well as emergency management and special events departments. Along with popular social media sites, the city has accounts on lesser-known sites, for instance foursquare which is used in the retail industry to track customer preferences. The city of Chicago uses foursquare to encourage tourism and cohesiveness among citizens. The site's unique features allow citizens to record the number of visits to different locations within the city, as a result promoting them and encouraging groups of citizens to meet in various locations. Other lesser-known social media sites like nixle make it possible for the Chicago Police department to send up-to-the-minute alerts to citizens by phone and email. Similarly, tumblr is a site used by the Chicago Public library to connect with its audience. Our comparative analysis of city websites was concluded early in May, just before Mayor Emanuel took office. Since that time, the Emanuel administration has held town hall meetings on Facebook and solicited budget ideas on Twitter.
Visit the social media center of the City of Chicago at http://www.cityofchicago.org/city/en/narr/misc/social_media.html

Another online feature that fits under the Web 2.0 definition is open data. This involves the posting of data collected by governments. Open data is associated with Web 2.0 through the idea of utilizing collective intelligence or the "wisdom of crowds" (Noveck 2009). Often cities (or other governments) post raw data, and encourage users to develop applications that make the information more usable. Chicago, New York, Washington, D.C. and others have held contests for the development of applications that help citizens to use the data. Chicago is one of the cities with an open data portal, which went online in January 2011. The most accessed datasets over 2011, according to the website, have been information on police and fire stations, tax increment financing, employee names and salaries, and building permits.[2] The site also has neighborhood-level crime data, budget data, and freedom of information act requests, among many other types of information. While the open data portals can promote transparency, their significance over time will depend on what data are made available, and the extent to which it is usable for intended audiences. For example, cities often post GIS files that require special software, and budget data can be difficult for citizens to understand without clear explanations. Portland and San Francisco were local government pioneers in this area at the end of 2009, and we counted one dozen cities among the 75 largest by summer 2011. It will be interesting to watch whether this spreads in the future, and how local governments or independently-developed applications provide new ways for citizens to use the data.

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[2] http://data.cityofchicago.org/, accessed December 31, 2011, sites sorted by "most accessed" and "this year."

San Francisco, CA: DataSF Website
The DataSF website is a clearinghouse of structured and machine-readable data, made available to the public with a friendly interface. The City and County of San Francisco was one of the first U.S. local governments to host an open data portal. The website provides approximately 200 datasets, in diverse categories such as Administration & Finance, Environment, Geography, Housing, Human Services, Public Safety, Public Works, and Transportation. The website has two remarkable features: establishing a reputation system on the government website and combining datasets with mobile phone applications. With respect to the reputation system, residents are allowed to comment and score datasets for improving access processes and the quality of the data. For mobile phone users, the website provides various applications needed by residents to search availability and prices of real-time parking spaces, recycling places, crime reports, parks, playgrounds, restaurants, museums, indoor play areas, and even the exact location of different types of trees. Moreover, the website encourages residents to establish their own mobile phone applications with the available datasets.
Visit http://datasf.org/

The participatory dimension of Web 2.0 raises the possibility of more civic engagement online, and improved communications between government and citizens. This is especially promising in the case of social networks, which may provide a platform for citizen participation in the future. Theories of democratic participation, including deliberative democracy, emphasize dialogue between citizens (as well as between government and citizens) (Gutmann and Thompson 2004; Fung 2006; Fishkin 2009; Habermas 1991). As shown in Table 1 below, in 2009, there was little discussion visible on government websites. Citizens could respond to online surveys, fill out comment forms, or send email to officials, and this certainly increased opportunities for government to receive feedback from constituents.   But, social networks have made possible discussions where citizens can interact with each other, and can see responses from government officials. In 2009, only one city website examined in the study (Seattle) had a discussion board, and a minority of cities linked to social networks. In 2011, most governments offer the opportunity for discussion through social networking sites. Interestingly enough, 6 city websites had hosted town hall meetings in the 2011 analysis, whereas none had done so in 2009. While the number of town hall meetings is still very small, together with the adoption of social networks, this may indicate a more general willingness among local governments to experiment with technology for dialogue with citizens.

Interactivity in U.S. and Illinois Cities

In our study, we measured a number of interactive tools on websites that allow users to customize information or communicate with government. Some of these, such as discussion boards, are features that pre-date Web 2.0. Examples of Web 2.0 that we examined in this study included social

networking sites, blogs, open data portals, and customization of information through RSS feeds or e-mail alerts.

TABLE 1. Interactive tools utilized in websites of 75 largest U.S. cities – Comparison of 2009 and 2011

Tools	Status	2009		2011	
		Frequency	Percent	Frequency	Percent
On-line newsletter subscriptions or e-mail updates	Yes	59	78.7	68	90.7
Downloadable information materials	Yes	75	100	75	100
Searchable databases	Yes	73	97.3	73	97.3
Comment or message box	Yes	60	80	56	74.7
RSS feed	Yes	42	56	55	73.3
Twitter	Yes	19	25.3	65	86.7
Discussion boards	Yes	1	1.3	2	2.7
Virtual townhall meetings	Yes	0	0	6	8
Facebook link	Yes	10	13.3	65	86.7
YouTube link	Yes	12	16	56	74.7
Blog for city in general	Yes	N/A	N/A	8	10.7
Blog for elected official	Yes	N/A	N/A	17	22.7
Flickr link	Yes	N/A	N/A	28	37.3
Open data portals	Yes	N/A	N/A	12	16

In the largest U.S. cities, some of these tools were very common, including downloadable information materials (100% in both years), searchable databases (97.3% both years), and online newsletter subscriptions or e-mail updates (from 78.7% in 2009 to 90.7% in 2011). All social media sites experienced manifold growth. Flickr was added for the first time to our list in 2011, and at 37% it was less common than the other social media we tracked. Blogs were less common, as only 22.7% of cities had them for any elected officials (and only about 11% had general city blogs). While still rare, a few virtual town hall meetings appeared this time; there were none in the previous study, but 8% of cities had them in 2011. There was a slight dip in the percentage of cities with comment or message boxes – from 80% of cities in 2009 to 74.7% in 2011. It is difficult to tell from this small change during a short period of time whether this is a trend, for example, because cities are using social media instead.

TABLE 2. Interactive tools utilized in websites of 20 largest Illinois cities – Comparison of 2009 and 2011

Tools	Status	2009		2011	
		Frequency	Percent	Frequency	Percent
On-line newsletter subscriptions or e-mail updates	Yes	15	75	17	85
Downloadable information materials	Yes	20	100	20	100
Searchable databases	Yes	11	55	13	65
Comment or message box	Yes	11	55	16	80
RSS feed	Yes	9	45	13	65
Twitter	Yes	3	15	11	55
Discussion boards	Yes	1	5	0	0
Virtual townhall meetings	Yes	0	0	0	0
Facebook link	Yes	2	10	11	55
YouTube link	Yes	2	10	11	55
Blog for city in general	Yes	N/A	N/A	3	15
Blog for elected official	Yes	N/A	N/A	0	0
Flickr link	Yes	N/A	N/A	2	10
Open data portals	Yes	N/A	N/A	1	5

In Illinois, the trends were much the same, although these (mostly) smaller cities adopted these interactive tools at somewhat lower rates. Still, in most categories there was growth since 2009 (except for the downloadable information materials, which were at 100% already). Interestingly, comment or message boxes in Illinois cities increased from 55 % to 80% during the same period that they declined slightly nationally. There were 3 city blogs (in 15% of Illinois cities), but none for elected officials. There were no discussion boards or virtual town hall meetings in Illinois when we completed the content analysis in early May 2011. Since the completion of this study, however, the Emanuel administration has held town hall meetings on Facebook, and so this may be changing in the future. Generally, interactivity has increased in Illinois cities between 2009 and 2011, but is lower than in the larger U.S. cities.

OVERALL RANKINGS FOR 2011

As mentioned above, in 2011 we coded for new categories, including: blog for the city in general, blog for an elected official, Flickr link, and open data. Additionally, we added subcategories for social media and blogs for "allows for comments" and "policy content". For both the large U.S. and Illinois cities, all Twitter and Facebook sites we examined allow user comments. For YouTube, 90 percent of the U.S. cities and 72.7% of the Illinois cities with these sites allowed comments on them. Moreover, almost all of these Twitter, Facebook, and YouTube sites have policy relevant content (100 percent of the Facebook sites, and 98 percent of the Twitter and YouTube sites). (Flickr sites are less policy-oriented, which might be expected from a photo-sharing site. Only 71.4 percent had policy content.) In Illinois, all of the Facebook and Twitter sites had policy-related material, as well as most of the YouTube sites (72.7%).

TABLE 3. 2011 rankings – Based on 90/94 criteria (New Instrument)

U.S. CITIES			IILLINOIS CITIES		
City	*Rank*	*Score*	*City*	*Rank*	*Score*
New York	1	93.33%	Naperville	1	80.85%
Seattle	1	93.33%	Chicago	2	78.89%
Virginia Beach	2	90.43%	Elgin	3	77.66%
Portland	3	90.00%	Evanston	4	73.40%
San Francisco	4	89.36%	Aurora	5	72.22%
Kansas City, MO	5	87.23%	Schaumburg	6	71.28%
Denver	6	86.67%	Peoria	7	68.09%
Mesa, AZ	7	85.11%	Decatur	8	67.02%
Philadelphia	7	85.11%	Champaign	9	63.83%
Louisville	8	84.44%	Arlington Hts.	9	63.83%
Long Beach, CA	9	84.04%	Skokie	9	63.83%
Sacramento	9	84.04%	Rockford	10	63.33%
San Jose	10	82.98%			

Adding these categories and subcategories places more emphasis on Web 2.0 features. This refinement reflects the growth of social media, and also their potential to contribute to civic

engagement. The subcategories provide more detail on the interaction permitted by local governments and whether discussions are related to collective policy issues rather than service alerts or individual service requests. Otherwise, the questions and methods used were the same as in the 2009 study (See methods Appendix E at the end of this report). All cities were coded independently by two coders, and the results were reconciled by a third coder. If intercoder reliability dropped under 75% (which happened only in a few cases), a fourth coder checked the results.

The full results for 2011 for the U.S. and Illinois cities are attached in Appendix A and Appendix C. For a quick view, the top 10 cities for the nation and for Illinois are shown above. Using the new measures, the largest U.S. cities varied from 51.11% (Toledo) to 93.33% (New York and Seattle), and the mean score was 75.72%. The 20 largest Illinois cities ranged from 50% (Bolingbrook) to 80.85% (Naperville), with a mean of 65.14%.

Seattle, WA–Community Engagement Website
The official website of the City of Seattle encourages communities and groups to participate in both online and offline governmental and community affairs by offering various community technologies (e.g. social media), services, and training programs. For instance, the city website assists registered community websites to be connected with the Data.Seattle.Gov website in which the communities are allowed to update their information, so that it can be easily accessed by residents. The city website also publishes a monthly community technology e-zine, *Brainstorm*, to publicize opportunities and resources for community-based technology, with an emphasis on programs for youth and residents over 50. For residents interested in governmental affairs, the website provides a citizen guide on local government processes, as well as offline participation opportunities for donating and volunteering, serving on city boards and commissions, and attending city council hearings and neighborhood events.
http://www.seattle.gov/html/citizen/community.htm

COMPARISON 2009-2011: LOWER CITIES MOVE UP

If we use the same measures as in 2009 to score and rank the cities on 74-78 criteria, there are similar, but not identical results for 2011. The tables below show the scores for the top U.S. and Illinois cities in 2011 using the 2009 criteria, as well as the results for 2009. It is apparent that there has been some movement, especially with 2009 lower-ranked cities moving up. A glance at the full results in the appendix shows that while a number of cities dropped in their ranking, that their scores usually fell slightly, if at all. Rather, it was the relative mix that changed, with other cities catching up and at times surpassing the cities that had been leaders in the past.

This is clearest even within the top 5 in the national rankings. The scores for the 75 largest cities ranged between 60.81% (Toledo) and 94.87% (San Francisco). While the rankings showed some shifts

within the top 5 and overall, there was a general trend upward, which can be seen better in the changes in the mean score (below). The overall Illinois scores ranged between 54.05% (Cicero) and 89.74% (Naperville).

We display the top 5 below, but the full set is available in Appendix B.

TABLE 4. 2011 rankings of U.S. cities – Based on 74/78 criteria (2009 Instrument)

City	2011 Rank	2011 Score	2009 Rank	2009 Score
San Francisco	1	94.87%	3	93.59%
Virginia Beach	1	94.87%	7	87.17%
Seattle	2	94.59%	1	95.95%
New York	3	93.24%	5	91.89%
Kansas City, MO	4	92.31%	23	76.92%
Denver	5	91.89%	20	78.38%

TABLE 5. 2011 rankings of ILLINOIS cities – Based on 74/78 criteria (2009 Instrument)

City	2011 Rank	2011 Score	2009 Rank	2009 Score
Naperville	1	89.74%	1	87.18%
Aurora	2	85.14%	3	82.43%
Elgin	3	83.33%	5	78.21%
Chicago	4	82.43%	2	86.49%
Peoria	5	82.05%	6	75.64%

The overall trends in the data can be more clearly seen by examining the mean scores for cities in 2009 and 2011, using the original 2009 Civic Engagement Index.

Table 6. Civic Engagement Index – Comparison between 2009 and 2011

Category	# of Items in Category	75 U.S. Cities		20 Illinois Cities	
		Mean in 2009	Mean in 2011	Mean in 2009	Mean in 2011
Overall Score	74, 78*	78%	83%	66%	74%
Contact Information	12, 16*	95%	93%	90%	93%
Organizational Information	3	63%	76%	65%	60%
Processes and Regulations	11	75%	80%	64%	73%
Neighborhood Information	2	99%	99%	85%	95%
Policy and Performance Information	8	95%	91%	66%	74%
Offline Participation Information	12	86%	86%	78%	75%
Online Interactivity and Participation	13	55%	75%	46%	64%
Transparency and Accessibility	13	67%	71%	52%	61%

* No city manager – 74 points possible rather than 78 for overall score, and 12 points possible rather than 16 for contact information score

Average overall scores increased by 5 percentage points nationally and 8 percentage points in Illinois. The noticeably increased average scores (20 percentage points for the U.S. and 18 for Illinois) for the "Online Interactivity and Participation" category included social networking. Nationally, organizational information improved by 13 percentage points over the two years. In Illinois, neighborhood information increased by 10 percentage points on average, and policy and performance information increased by 8 percentage points. In most categories (other than contact information, where both have an average of 93%), national averages are higher than those for the generally smaller Illinois cities.

The final way in which we compare change is by listing the common features on local government websites (in Table 7), and those that were least common, for both sets of cities across years. In Table 7, categories with an "X" were present on all (or all but one) of the websites for either the U.S. or Illinois.

Table 7. Most common web features

Item	75 U.S. Cities		20 Illinois Cities	
	2009	2011	2009	2011
Contact information				
• Mayor, departments, agencies	X	X	X	X
• City council	X	X		X
Government processes				
• Information on current government policies or regulations	X	X	X	X
• Texts or links for the municipal code	X	X	X	X
• City council agendas	X	X	X	X
Neighborhood orientations				
• Information on neighborhood characteristics	X	X	X	X
• Information on community or neighborhood issues	X	X		
Policies and performance				
• Press releases	X	X		X
• City budget	X	X		X
• Financial audit reports	X	X		
• Agency annual report		X		
Participatory opportunities offline				
• Information on offline events or opportunities for participation	X	X	X	X
• Time and place of council sessions or hearings	X	X	X	X
• Time and place of administrative hearings				X
• Offline civic participation opportunities		X		
• Information on grants, training or technical assistance				X

Convenient information access				
• Downloadable forms	X	X	X	X
• Online transactions		X	X	
• Downloadable information materials	X	X	X	X
• No charge for downloadable information or printed materials	X	X	X	X
• Search engine	X	X		
• Site template uniform		X		X
• Web page updates in past 30 days		X	X	X
Security and privacy				
• Use security access method				X

Note: A check means that the web feature is present on all (or all but one) of the 75 U.S. (20 Illinois) city websites.

Across both the national and Illinois cities, the number of almost universal features increased somewhat. On the national level in 2011, almost all cities had agency annual reports, information on offline civic participation opportunities, online transactions, site template uniformity, and recent updates.

Illinois sites lacked some of the features of the large U.S. city sites, but caught up in the past two years regarding city council contact information, press releases, city budgets, and uniformity of site templates. Local websites in the state were actually more likely to have some features, such as: information on time and place of administrative hearings; information on grants, training or technical assistance; and security access. In addition to the dramatic changes in Web 2.0, there were other smaller improvements, mostly in better information or transparency and accessibility of the websites.

Table 8. Least common web features

Item	75 U.S. Cities		20 Illinois Cities	
	2009	2011	2009	2011
• Podcasts on council meetings	X		X	X
• Highlights or summaries rather than full council meeting minutes			X	
• Published date on main page				X
• Accessibility statement				X
• Foreign language translation			X	
• Icons to indicate availability for foreign language translation	X	X	X	X
• Audio or visual enhancement for people with disabilities			X	
• Twitter			X	
• YouTube link	X		X	
• Facebook link	X		X	
• Discussion boards	X	X	X	X
• Virtual town hall meetings	X	X	X	X
• Open data	N/A	X	N/A	X

Note: A check means that the web feature is present on less than 20 percent of the 75 U.S. (20 Illinois) city websites.

Conversely, the number of items that were available on less than 20 percent of websites decreased, especially on the national level. Most noticeable for features that were still uncommon were discussion boards, virtual town hall meetings, and open data, which appear on few city websites in either the U.S. or Illinois. Display of foreign language icons signaling translation for non-English speakers was uncommon, although foreign language translation was more available in 2011. In Illinois, podcasts of council meetings, accessibility statements, and published dates on the main page were relatively scarce.

CONCLUSION: PROGRESS AND PROSPECTS

In the past few years, cities in the U.S. and Illinois have improved their scores on the E-Government Civic Engagement Index on average by 5 and 8 percentage points, respectively. These are fairly modest increases, due to some gains in the amount of information available online, some better

practices for the usability of websites, and the use of social media. What the overall averages mask is the extent to which some of the lagging cities have now moved up.

Local websites play an important role in making basic information about cities available, including contact information, government policies and processes, government organization, information about council meetings, and important policy documents, such as budgets. This improves transparency and offers citizens information that could help them to intervene on issues if they so choose. As in 2009, however, local governments generally have not used their websites as a venue for citizen participation. Social networks pose some potential for this, but a scan of activity on the websites doesn't indicate much active discussion. A small percentage of the cities have had online town hall meetings, in contrast to two years ago, when there were none. The new 2011 Civic Engagement Index includes questions on whether cities allow comments online and the extent to which they use these features for policy issues. For both the U.S. and Illinois cities, most do allow comments and contain some policy-related information. While not much discussion was visible in 2011, social networks may open more opportunities for dialogue in the future.

The change in social media adoption is remarkable – increasing from two to five times over the levels observed two years ago. At the same time, however, there is much more to be learned about how local governments are using technology. To what extent are discussions actually occurring online? What is the content of the discussions, and what influence do they have on policy? Use of social media, as this study shows, is relatively new for local governments. While the prior study showed that there are many opportunities online for citizen feedback, such as surveys and comment forms, city websites have in the past provided little for two-way interaction. This is the potential that social media offer. But, two-way interaction will require time and management by city employees. Citizens expect a response to ideas and arguments that they put forward. Some local governments fear issues of censorship regarding incivility online from citizens, as well as the possible consequences of casual, unauthorized comments from government employees or elected officials. The way in which cities will navigate this new terrain will certainly influence the chances for fostering civic engagement in new ways.

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APPENDIX A. Overall ranking for 75 largest U.S. cities – Based on 2011 instrument

City	State	Population	Rank by population	Raw score	Highest possible score	Weighted score	Rank by weighted score
New York	New York	8175133	1	84	90	93.33	1
Seattle	Washington	608660	24	84	90	93.33	1
Virginia Beach	Virginia	437994	40	85	94	90.43	2
Portland	Oregon	583776	30	81	90	90.00	3
San Francisco	California	805235	14	84	94	89.36	4
Kansas City	Missouri	459787	38	82	94	87.23	5
Denver	Colorado	600158	27	78	90	86.67	6
Philadelphia	Pennsylvania	1526006	5	80	94	85.11	7
Mesa	Arizona	439041	39	80	94	85.11	7
Louisville	Kentucky	597337	28	76	90	84.44	8
Sacramento	California	466488	36	79	94	84.04	9
Long Beach	California	462257	37	79	94	84.04	9
San Jose	California	945942	11	78	94	82.98	10
Houston	Texas	2099451	4	74	90	82.22	11
Los Angeles	California	3792621	2	77	94	81.91	12
Phoenix	Arizona	1445632	6	77	94	81.91	12
Washington DC	N/A	601723	25	77	94	81.91	12
Albuquerque	New Mexico	545852	33	73	90	81.11	13
St. Paul	Minnesota	285068	66	73	90	81.11	13
Arlington	Texas	365438	51	76	94	80.85	14
Greensboro	North Carolina	269666	68	76	94	80.85	14
Boston	Massachusetts	617594	23	72	90	80.00	15
Raleigh	North Carolina	403892	44	75	94	79.79	16
Chicago	Illinois	2695598	3	71	90	78.89	17

City	State	Population	Rank	Score1	Score2	Score3	Rank2
San Diego	California	1307402	8	71	90	78.89	17
Minneapolis	Minnesota	382578	49	71	90	78.89	17
Las Vegas	Nevada	583756	31	74	94	78.72	18
Oklahoma City	Oklahoma	579999	32	74	94	78.72	18
Jacksonville	Florida	821784	12	70	90	77.78	19
San Antonio	Texas	1327407	7	73	94	77.66	20
Fresno	California	494665	35	73	94	77.66	20
Colorado Springs	Colorado	416427	42	73	94	77.66	20
Cincinnati	Ohio	296943	61	73	94	77.66	20
Tucson	Arizona	520116	34	72	94	76.60	21
Aurora	Colorado	325078	55	72	94	76.60	21
Plano	Texas	259841	70	72	94	76.60	21
St. Petersburg	Florida	244769	74	72	94	76.60	21
Glendale	Arizona	226721	75	72	94	76.60	21
Baltimore	Maryland	620961	22	68	90	75.56	22
Tulsa	Oklahoma	391906	47	68	90	75.56	22
Anchorage	Alaska	291826	63	68	90	75.56	22
Lexington-Fayette	Kentucky	295803	62	71	94	75.53	23
Honolulu	Hawaii	953207	10	70	94	74.47	24
Austin	Texas	790390	15	70	94	74.47	24
Fort Worth	Texas	741206	17	70	94	74.47	24
Wichita	Kansas	382368	50	70	94	74.47	24
Columbus	Ohio	787033	16	67	90	74.44	25
Milwaukee	Wisconsin	594833	29	67	90	74.44	25
Indianapolis	Indiana	820445	13	66	90	73.33	26
Memphis	Tennessee	646889	21	66	90	73.33	26
Lincoln	Nebraska	258379	71	66	90	73.33	26
Oakland	California	390724	48	68	94	72.34	27

Detroit	Michigan	713777	19	65	90	72.22	28
Omaha	Nebraska	408958	43	65	90	72.22	28
Tampa	Florida	335709	54	65	90	72.22	28
Fort Wayne	Indiana	253691	73	65	90	72.22	28
Corpus Christi	Texas	305215	59	67	94	71.28	29
St. Louis	Missouri	319294	57	64	90	71.11	30
Charlotte	North Carolina	731424	18	66	94	70.21	31
El Paso	Texas	649121	20	66	94	70.21	31
Anaheim	California	336265	53	66	94	70.21	31
Riverside	California	303871	60	66	94	70.21	31
Pittsburgh	Pennsylvania	305704	58	63	90	70.00	32
Miami	Florida	399457	45	65	94	69.15	33
Henderson	Nevada	257729	72	65	94	69.15	33
Atlanta	Georgia	420003	41	64	94	68.09	34
Dallas	Texas	1197816	9	62	94	65.96	35
Nashville-Davidson	Tennessee	601222	26	59	90	65.56	36
Buffalo	New York	261310	69	56	90	62.22	37
Cleveland	Ohio	396815	46	53	90	58.89	38
Newark	New Jersey	277140	67	53	90	58.89	38
Stockton	California	291707	64	55	94	58.51	39
Bakersfield	California	347483	52	54	94	57.45	40
Santa Ana	California	324528	56	54	94	57.45	40
Toledo	Ohio	287208	65	46	90	51.11	41
MEAN SCORE						75.72	
MEDIAN SCORE						76.60	

APPENDIX B. Overall ranking for 75 largest U.S. cities – Comparison between 2009 and 2011

City	State	Population	Rank by population	Raw score	Highest possible score	Weighted score	Rank by weighted score	Weighted score in 2009	Rank by weighted score in 2009
San Francisco	California	805235	14	74	78	94.87	1	93.59	3
Virginia Beach	Virginia	437994	40	74	78	94.87	1	87.18	7
Seattle	Washington	608660	24	70	74	94.59	2	95.95	1
New York	New York	8175133	1	69	74	93.24	3	91.89	5
Kansas City	Missouri	459787	38	72	78	92.31	4	76.92	23
Denver	Colorado	600158	27	68	74	91.89	5	78.38	20
San Jose	California	945942	11	71	78	91.03	6	85.90	9
Portland	Oregon	583776	30	67	74	90.54	7	77.03	22
Philadelphia	Pennsylvania	1526006	5	70	78	89.74	8	81.08	16
Phoenix	Arizona	1445632	6	70	78	89.74	8	94.87	2
Mesa	Arizona	439041	39	70	78	89.74	8	84.62	11
San Diego	California	1307402	8	66	74	89.19	9	82.43	14
Washington DC	N/A	601723	25	69	78	88.46	10	82.43	14
Sacramento	California	466488	36	69	78	88.46	10	79.49	19
Houston	Texas	2099451	4	65	74	87.84	11	79.73	18
Las Vegas	Nevada	583756	31	68	78	87.18	12	78.21	21
Long Beach	California	462257	37	68	78	87.18	12	80.77	17
Boston	Massachusetts	617594	23	64	74	86.49	13	87.84	6
Louisville	Kentucky	597337	28	64	74	86.49	13	93.24	4
Albuquerque	New Mexico	545852	33	64	74	86.49	13	79.73	18
St. Paul	Minnesota	285068	66	64	74	86.49	13	79.73	18
San Antonio	Texas	1327407	7	67	78	85.90	14	82.05	15
Colorado Springs	Colorado	416427	42	67	78	85.90	14	75.64	25
Arlington	Texas	365438	51	67	78	85.90	14	76.92	23

Greensboro	North Carolina	269666	68	67	78	85.90	14	82.05	15
Minneapolis	Minnesota	382578	49	63	74	85.14	15	80.77	17
Los Angeles	California	3792621	2	66	78	84.62	16	82.43	14
Tucson	Arizona	520116	34	66	78	84.62	16	70.51	31
Fresno	California	494665	35	66	78	84.62	16	78.21	21
Aurora	Colorado	325078	55	66	78	84.62	16	78.21	21
St. Petersburg	Florida	244769	74	66	78	84.62	16	80.77	17
Anchorage	Alaska	291826	63	62	74	83.78	17	71.79	29
Honolulu	Hawaii	953207	10	65	78	83.33	18	73.08	28
Oklahoma City	Oklahoma	579999	32	65	78	83.33	18	82.05	15
Lexington-Fayette	Kentucky	295803	62	65	78	83.33	18	71.62	30
Glendale	Arizona	226721	75	65	78	83.33	18	79.49	19
Chicago	Illinois	2695598	3	61	74	82.43	19	86.49	8
Columbus	Ohio	787033	16	61	74	82.43	19	85.14	10
Memphis	Tennessee	646889	21	61	74	82.43	19	79.73	18
Baltimore	Maryland	620961	22	61	74	82.43	19	82.43	14
Milwaukee	Wisconsin	594833	29	61	74	82.43	19	75.68	24
St. Louis	Missouri	319294	57	61	74	82.43	19	83.78	12
Jacksonville	Florida	821784	12	61	74	82.43	19	75.68	24
El Paso	Texas	649121	20	64	78	82.05	20	82.05	15
Atlanta	Georgia	420003	41	64	78	82.05	20	75.68	24
Cincinnati	Ohio	296943	61	64	78	82.05	20	75.64	25
Plano	Texas	259841	70	64	78	82.05	20	83.33	13
Indianapolis	Indiana	820445	13	60	74	81.08	21	68.92	33
Tulsa	Oklahoma	391906	47	60	74	81.08	21	78.38	20
Lincoln	Nebraska	258379	71	60	74	81.08	21	66.22	37
Austin	Texas	790390	15	63	78	80.77	22	83.33	13

Raleigh	North Carolina	403892	44	63	78	80.77	22	61.54	40
Corpus Christi	Texas	305215	59	63	78	80.77	22	74.36	26
Tampa	Florida	335709	54	59	74	79.73	23	82.43	14
Pittsburgh	Pennsylvania	305704	58	59	74	79.73	23	74.32	27
Fort Wayne	Indiana	253691	73	59	74	79.73	23	75.68	24
Dallas	Texas	1197816	9	62	78	79.49	24	79.49	19
Fort Worth	Texas	741206	17	62	78	79.49	24	71.79	29
Charlotte	North Carolina	731424	18	62	78	79.49	24	76.92	23
Oakland	California	390724	48	62	78	79.49	24	71.79	29
Wichita	Kansas	382368	50	62	78	79.49	24	80.77	17
Detroit	Michigan	713777	19	58	74	78.38	25	71.62	30
Omaha	Nebraska	408958	43	58	74	78.38	25	70.27	32
Anaheim	California	336265	53	61	78	78.21	26	75.64	25
Nashville-Davidson	Tennessee	601222	26	57	74	77.03	27	83.78	12
Riverside	California	303871	60	60	78	76.92	28	75.64	25
Henderson	Nevada	257729	72	59	78	75.64	29	78.21	21
Miami	Florida	399457	45	58	78	74.36	30	74.36	26
Cleveland	Ohio	396815	46	53	74	71.62	31	70.27	32
Buffalo	New York	261310	69	53	74	71.62	31	67.57	35
Stockton	California	291707	64	55	78	70.51	32	67.95	34
Bakersfield	California	347483	52	54	78	69.23	33	64.10	39
Santa Ana	California	324528	56	52	78	66.67	34	66.67	36
Newark	New Jersey	277140	67	49	74	66.22	35	52.70	41
Toledo	Ohio	287208	65	45	74	60.81	36	64.86	38
MEAN SCORE						82.65		78.02	
MEDIAN SCORE						82.43		78.38	

APPENDIX C. Overall ranking for 20 largest Illinois cities – Based on 2011 instrument

City	Population	Rank by population	Raw score	Highest possible score	Weighted score	Rank by weighted score
Naperville	141853	5	76	94	80.85	1
Chicago	2695598	1	71	90	78.89	2
Elgin	108188	8	73	94	77.66	3
Evanston	74486	15	69	94	73.40	4
Aurora	197899	2	65	90	72.22	5
Schamburg	74227	16	67	94	71.28	6
Peoria	115007	7	64	94	68.09	7
Decatur	76122	13	63	94	67.02	8
Champaign	81055	11	60	94	63.83	9
Arlington Heights	75101	14	60	94	63.83	9
Skokie	64784	19	60	94	63.83	9
Rockford	152871	3	57	90	63.33	10
Des Plaines	58364	20	59	94	62.77	11
Waukegan	89078	9	56	90	62.22	12
Springfield	116250	6	55	90	61.11	13
Bloomington	76610	12	55	94	58.51	14
Palatine	68557	18	52	94	55.32	15
Cicero	83891	10	49	90	54.44	16
Joliet	147433	4	51	94	54.26	17
Bolingbrook	73366	17	45	90	50.00	18
MEAN SCORE					65.14	
MEDIAN SCORE					63.83	

APPENDIX D. Overall ranking for 20 largest Illinois cities – Comparison between 2009 and 2011

City	Population	Rank by population	Raw score	Highest possible score	Weighted score	Rank by weighted score	Weighted score in 2009	Rank by weighted score in 2009
Naperville	141853	5	70	78	89.74	1	87.18	1
Aurora	197899	2	63	74	85.14	2	82.43	3
Elgin	108188	8	65	78	83.33	3	78.21	5
Chicago	2695598	1	61	74	82.43	4	86.49	2
Peoria	115007	7	64	78	82.05	5	75.64	6
Schamburg	74227	16	61	78	78.21	6	60.26	10
Champaign	81055	11	60	78	76.92	7	79.49	4
Skokie	64784	19	60	78	76.92	7	57.69	13
Evanston	74486	15	59	78	75.64	8	74.36	7
Des Plaines	58364	20	59	78	75.64	8	75.64	6
Decatur	76122	13	58	78	74.36	9	51.28	17
Arlington Heights	75101	14	58	78	74.36	9	55.13	14
Rockford	152871	3	53	74	71.62	10	74.32	8
Bloomington	76610	12	55	78	70.51	11	58.97	12
Waukegan	89078	9	51	74	68.92	12	48.65	18
Palatine	68557	18	52	78	66.67	13	65.38	9
Springfield	116250	6	49	74	66.22	14	59.46	11
Joliet	147433	4	47	78	60.26	15	51.28	17
Bolingbrook	73366	17	43	74	58.11	16	54.05	15
Cicero	83891	10	40	74	54.05	17	52.7	16
MEAN SCORE					73.56		66.43	
MEDIAN SCORE					75.00		62.82	

APPENDIX E. Methods

This report examines the potential for local e-government to facilitate civic engagement through a content analysis of the official websites of the 20 largest Illinois cities and 75 largest U.S. cities (as measured by population). Appendices A and B contain a list of the U.S. cities ranked by Civic Engagement Index score and population, and C and D show the same information for Illinois. Prior studies have identified large cities as the leaders in local e-government, so an assessment of the largest cities may be more likely to reveal cutting-edge practices in civic engagement.

Content analysis was conducted from March through May 2011, assessing cities on 90 to 94 different variables (or 74 to 78 variables for comparison with 2009), depending on whether or not they had a city manager. The coders examined each website to determine how many of the 90-94 features were present, and the Civic Engagement Index (weighted score) is the percent of all possible features. A detailed coding manual with website examples and instructions was used to train the 5 coders and to assure reliability.[3] Pre-tests of the website-assessment instrument were conducted for both the U.S. and Illinois cities. Intercoder reliability ranged between 62 and 93 percent (the mean is slightly over 80 percent), which parallels the results for other website coding (see Musso, Weare and Hale 2000). The greatest challenge is the complexity of websites and layout that often makes it difficult to find features. To insure greater reliability, each website was coded carefully and independently by two coders, and differences were reconciled by a third coder.

Measurements that are dichotomous – such as the presence or absence of background information on an issue – are more appropriate for this method than a judgment about the quality of the information. The measures show the availability of some information, but not the ease of finding it, the prevalence of the information, or its utility.

One issue in website content analysis is how to define the "website," especially for governments that have a variety of departments and multiple links (Weare and Lin 2000). In most cases we restricted our analysis to the main website and avoided examining separate departments. Conceptually, we were most concerned with the policies of the city leadership, especially the mayor, city council, and city manager (where applicable). We recorded links from the main website to the election information for that variable. Coders did go to the community or neighborhood page (where it existed) to find descriptive or policy information or participatory opportunities. For certain documents, such as budget or audit information, coders were allowed to go to a separate finance page, if necessary. It is possible that this research understates some participatory opportunities or information located only on department websites. For that reason, we emphasize that we are researching the main city web page, the city leadership, and major city-wide policy documents.

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[3] Available from the authors upon request.