Sydney's local government online: A Review of web based communications

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INTRODUCTION

Many of us conduct a significant part of our lives online paying bills, ordering groceries, booking travel, biding on auctions, and catching up with long lost friends. The extent to which modern society has become reliant on online services influences the way in which people communicate with one another and the way we conduct our lives (Wellman and Haythornthwaite, 2002). Th*e specific focus* of this paper is web based communication for planning in local government. Despite communication with the community being an integral part of local government functions, the types of communication being used are rarely monitored or analysed. This paper provides a comparative snapshot of the types of web based communication being employed by local *g*overnment in Sydney, New South Wales (NSW), Australia, and *investigates some of the correlates of this communication process*. We begin by reviewing the U.S. based studies that this paper seeks to make a comparison with and then move onto recent research that has a specific focus on emerging social networking tools such as Facebook. We then provide details of the study area and present a comparative study of web based communication by local government in the state of NSW with the U.S. based studies previously conducted by Evans-Cowley and Conroy (**2010**). After outlining the extent and types of electronic communication employed and their correlation with other easily accessible statistics, the paper also highlights a number of third party hosting techniques being employed to extend the use of web based communications locally.

Web-based interaction in local government planning

Healey (1993) refers to a shift from a modernist to a post-modernist view of planning as the *communicative turn in planning theory*. This shift is described by Harris (2002) as a re-orientation from technical planning models towards a more interactive understanding of planning activity. Others have further developed the area of communicative planning and added terms such as *deliberative planning* (Forster, 1999) and *planning through consensus building* (Innes, 1996). While literature discusses and debates communication in planning theory, less attention is paid to how local government planning provides information and services through the use of the Internet and how it promises to increase community understanding of planning, while also increasing the number of participants in the planning system (Yigitcanlar, 2006). A number of recent studies have been undertaken to measure the extent to which local government engages with its respective communities electronically. To gain an understanding of how local government communicates with its community via the Internet, a number of communication models have been utilised, with this study using an Internet communications model developed by McMillan (2002).

Evans-Cowley and Conroy (2006) categorised typical U.S. Municipal Council web site functions into the four-part model developed by McMillan (2002), with the council being the Sender and Citizen being the Receiver. Evans-Cowley and Conroy's (2006) conclusions were firstly, that the *monologue* approach is the most common form of communication because it saves time and costs to the council and is relatively simple to implement. Secondly, *responsive dialogue* and *mutual discourse* are challenging both technically and financially, with little expertise employed in-house. Thirdly, citizens have increasing expectations for planning web sites, with the public regularly inquiring about information availability. And finally, a small portion of local government is providing the full array of communications. Likewise, Simpson (2005) conducted a large survey of U.S. local government as a representation of the various interactions that occur between government and citizens, observing that planning is a unit of local government that most often effects people at the property level and actively seeks community input on planning issues (Simpson, 2005). Simpson concluded that the majority of U.S. planning agencies are not using

web enabled technology to engage the public in discourse, rather providing a one-way communication channel in the form of static documents and maps. Furthermore, most planning agencies are considering the adoption of more interactive applications, but most activity is focused on basic information. It is unclear what forces, technological or otherwise, will push agencies toward more interactivity (Simpson, 2005). Walsh (2009) suggests that innovative communications is not limited by its ability to implement new systems and infrastructure, but perhaps the most important factor is a genuine understanding at management level of the benefits that could be gained.

More recently, Evans-Cowley and Conroy have transformed their 2003 study into a longitudinal study that reviews Municipal Council web sites on an annual basis. Evans-Cowley and Conroy's (2009) latest results conclude that municipal planning webs sites are still dominated by simple monologue information, although the number of municipalities offering this information has increased between 2003 and 2007. Municipalities are also experiencing significant technical and financial challenges in adding tools such as interactive GIS and e-commerce to their sites, due to planning department staff being responsible for maintaining the web sites. Finally, there is evidence of an increase in online participation tools, although the number of municipalities offering discussion forums and special interest group listservs has decreased since 2003. Evans-Cowley and Conroy (2009) conclude that all levels of government are facing continuing challenges to be more responsive to their citizens and engage them in decision making; however, the success of online participation tools is tied to the public's use of these services.

An area of online participation that has emerged since the initial studies by Evans-Cowley and Conroy (2006) and Simpson (2005) is social networking, which includes Facebook, MySpace and Twitter. The use of Facebook can be broken into two separate groups of *Government-initiated* and *Citizen-initiated social networks* (Evans-Cowley, 2010; Evans-Cowley and Hollander, 2010). Citizen-initiated social networks focusing on planning issues form the majority of social networks found by Evans-Cowley (2010), and typically were organised to oppose a proposed development or draft plan. Facebook is a popular social network that attracts millions of user across the world; however, the use at a personal level may not constitute what is required for participation in planning processes, due to people's interpretation of what a *friend* is, and their belief that simply joining a network is an action for a cause. Furthermore, the slow take up of social network tools such as Facebook may also be attributed to local government employees actually being banned from accessing the site from work equipment (Evans-Cowley, 2010). An example of Facebook being used as a *citizen-initiated* action group took place in the industrial city of Newcastle, New South Wales, Australia. In this instance, Newcastle's Central Business District (CBD) has been suffering significant retail tenancy and pedestrian traffic issues due to a decline in manufacturing and the rise of suburban shopping malls. To tackle the issues, a citizen created the *Renew Newcastle* action group through Facebook that aimed to revitalise the CBD block by block. The group attracted thousands of followers and has played a significant role in revitalising the CBD by creating leasing arrangements for small creative projects and start up enterprises (Judd, 2011). This example also supports the findings of Evans-Cowley (2010) and Foth (2006) that *citizen-initiated* social networks are predominately placed-based planning efforts and are populated by people who live locally.

Finally, recent research by Evans-Cowley and Hollander (2010) investigated the potential use of online computers games such as *Second Life* to generate web based public participation. The basis of the research is two university projects that set-up virtual environments to present proposed land use zoning changes and allowed citizens to engage in debates and discussions within the virtual environment. These examples demonstrated that games such as *Second Life* can be used in novel ways to bring people together in an electronic environment to interact and discuss the future of their community. Moreover, Elliott (2011) and the City of Melbourne (2011) engaged in a public consultation process by transforming a *Draft Council Plan 2009-2013* into a Wiki site and allowed local government staff, stakeholders and the general public to edit the wiki pages and/or comment on specific sections of the plan. This example represents a deeper level of engagement with the public than traditional public consultancies processes using a wiki

interface that is generally understood by the Internet user and is a crowdsourcing method of harvesting collective intellect to provide creative solutions from networks of citizens in a controlled manner that serves local government (Brabham, 2009).

STUDY AREA

The Sydney metropolitan area is covered by 43 local government areas (LGA), with an average population per LGA of 98,473 persons. Sydney metropolitan LGAs range from very small areas of 6 sq kms close to the Sydney CBD, up to large areas on the urban fringe of 2776 sq kms.

The number of development applications varies considerably in LGAs across Sydney, peaking at 2,400 per year in the outer ring LGAs that often contain growth areas of new land release and subdivision (DoP, 2008). The average number of development applications per LGA in the 2008/09 financial year was 848. The LGAs with the highest number of development applications were Blacktown City with 2,454, then Sydney City with 2,305, followed by Hornsby Shire, Warringah, Penrith City, The Hills Shire, Camden Shire, Fairfield City, and Gosford City who all processed between 1,200 – 1,500 Development Applications (DoP, 2009a).

The average number of effective full time (EFT) development assessment staff employed to process the volumes of development applications is 14.7 staff per LGA. The number of staff ranges between 2 and 30 staff (DoP, 2009a).

The average population growth rate in Sydney LGAs is 1 percent. Growth rates vary from 4.89 percent in some inner city LGAs, down to -0.48 percent in middle ring suburbs, and in the Northern and Macarthur areas (DoP, 2008).

METHODOLOGY

Using a similar methodology to that of Evans-Cowley and Conroy (2006), our data collection involved a desktop review of planning documents and planning services functionality that is available on each of Sydney's 43 local government web sites. The web site review was conducted between December 2009 and January 2010. The review used binary coding for documents and services either being available (1) or not available (0). There was no weight given to the look or feel of web sites. Local government web site address details are published by the NSW Division of Local Government and that at least one page is devoted to local planning matters (DLG, 2010).

To provide equitable scoring of all local government web sites, the review used the 18 types of communication, GIS and planning services listed in *table 1*.

TABLE 1
Communication tools by Communication Type

Monologue Communication	Feedback Communications	Responsive Dialogue	Mutual Discourse
Planning Instruments	Customer Service Email	E-Commerce	Discussion Forum
Zoning Maps	Submit Comment to Development Application Online	Lodge Development Application Form Online	Blogs
Meeting Agenda	Submit comment to Plans on Exhibition online	Development Application Form	Social Media

Meeting Minutes			
Audio/Visual of Public Meetings			
Electronic Newsletter			
GIS Available			
Planning controls query tool			
Development Assessment Tracking			

Following from the research of Cowley and Conroy (2006), the model developed by McMillan (2002) was used to categorise the various forms of communication via the Internet. Each communication type can be summarised as follows:

> ***Monologue*** is one way communication with the receiver, being the public, having no control over the format or type of information provided.
>
> ***Feedback***, the receiver has some control of the interaction. However, the extent of the communication is not guaranteed.
>
> ***Response Dialogue*** is two-way communication, and is typically initiated by the public. When a planner responds to the communication it becomes responsive dialogue, however, the planner retains control of the communication.
>
> ***Mutual Discourse*** is pure two-way communication where both parties have control of communication, and both parties have the opportunity to send and receive messages.

McMillan's model was successfully used in the Evans-Cowley and Conroy 2006 study; therefore, collecting data under the same framework would provide a sound opportunity for a comparison study.

RESULTS

The communication tools shown in Table 1 were used for assessment of each LGAs overall performance. The total score out of 18 for each LGA, total number of communication tools used by a LGA, was used as the basis for the analysis that follows. Scores for LGAs could then be averaged or rank ordered. With population growth and high development activity, the desktop review found that the Sydney metropolitan LGAs average ranking was 12 out of 18. Pittwater Council topped the list with 16 out of 18. Sutherland Shire, Parramatta City and Hornsby Shire all scored 14 out of 18, closely followed by Mosman, Sydney City, The Hills Shire and Warringah. These are all well established LGAs mostly spread across Central and Northern Sydney.

Throughout the remainder of this paper, the word *council* will be used to refer to city, municipal and coastal councils in both Sydney and the U.S.

TABLE 2 Communication tools by Communication Type		
	Metropolitan Sydney#	**United States of America***
Monologue		
Planning Instruments	100%	93%
Zoning Maps	79%	88%
Meeting Agenda	96%	80%
Meeting Minutes	98%	60%
Audio/Visual of Public Meetings	5%	37%
Electronic Newsletter	71%	47%
Geographic Information System (GIS)	29%	42%
Planning Instruments Query Tool	21%	-
Development Application Tracking Tool	83%	-
Feedback		
Customer Service E-mail	100%	44%
Submit comments to Development application online	83%	-
Submit comment to Plans on Exhibition online	62%	-
Responsive Dialogue		
E-Commerce	100%	27%
Lodge Development Application form online	17%	7%
Development Application Forms	100%	79%
Mutual Discourse		
Discussion Forum	12%	3%
Blogs	5%	-
Social Media	21%	-

- No data collected for comparison
36 of Sydney's 43 LGAs have a population greater than 50,000 people.
* Evans-Cowley & Conroy (2009), surveyed local government with a population greater than 50,000 people.

MONOLOGUE

Monologue communications provide planning information directly to the public. The most common forms of monologue communications found on Sydney council web sites was static copies of planning instruments, meeting agendas and minutes and electronic newsletters.

Planning Instruments & Zoning Maps

All Sydney councils and a high percentage of U.S. Councils provide planning documents online, commonly in PDF format. Complimentary to planning instruments are zoning maps. Just under 80 percent of Sydney councils and 88 percent of U.S. councils provide zoning maps of their LGA in PDF format. The operation of councils in NSW is administered by the *Local Government Act 1993*, which states that "everyone" is entitled to inspect free of charge a current version of council's environmental planning instruments, development control plans and contributions plans made under EP&A (DLG, 1993:cl12). Making these planning instruments available online is an extension of these requirements.

Meeting Agenda and Minutes
Publishing council meeting agendas prior to the event and publishing the minutes of these meetings is a common form of monologue communications. A high number of Sydney councils engage in this practice, which is a rich source of information for the community, while 80 percent of U.S. Councils provide meeting agendas, and 60 percent provide meeting minutes. Public meetings of several different types are held by elected councilors on a regular basis, usually weekly. The meeting items up for discussion are of interest to the community and high rates of availability were found for both meeting agendas and minutes. Council meetings are held in business hours at many councils, therefore, the provision of meeting minutes online is an important source of information. The *Local Government Act 1993* states that the community must be given notice of public meeting times and places, and that meeting agendas and associated business papers must be made available at local government offices and at public meetings. Making the information available online is another extension of these requirements (LGA, 1993:cl9).

Audio/Video of Public Meetings
Council meetings are open to the public to attend and are held on regular days of the month and vary from daytime to early evening. Providing online visual recordings of public meetings is not common in Sydney, while 37 percent of U.S. councils do provide this service. Warringah Council, in Sydney's Northern suburbs, has taken the provision of meeting access a step further by providing live video streaming of public meetings (Warringah, 2010). Web casting of council meetings on Warringah Councils web site is an example of how councils are willing to enable their communities with more options to gain a better understanding of how decisions are made and the issues involved in reaching a decision. The advantages are greater community consultation and engagement by allowing citizens to view meetings at a time and place of their choosing; however, such a service requires a broadband Internet connection at a minimum, and only 74 percent of private dwellings in Warringah have access to the Internet (ABS, 2006).

Electronic Newsletters
A high percentage of Sydney Councils provide an email subscription service on their web sites for citizens interested in receiving regular newsletters about council's events and business, while this service is less common in U.S. councils, with 47 percent offering this service. Sydney council newsletters are a whole of council publication with generous amounts dedicated to planning.

GIS
29 percent of Sydney councils and 42 percent of U.S. councils provide online GIS. These interactive GIS tools provide a high level of information, including the ability to view several layers of information generated from both local and State data sources. Sutherland Shire Council in the southern suburbs of Sydney provides a comprehensive interactive GIS to the public that contains planning information, including land use zoning, flooding control lots, bushfire prone land and acid sulfate soils. Also available is public transport routes, vegetation and terrain mapping (Sutherland, 2010).

Planning Instrument Query Tool
A small percentage of Sydney's councils have taken their planning instruments and dissected them into a planning instrument query tool. This tool allows a citizen to drill down into the local planning instrument using their address and a proposed type of development. The planning controls query tool allows the user to choose a specific parcel of land and a development type and receive details of which sections of the planning instruments and associated controls are related to the chosen combination. An example of the tool can be found on the Pittwater Council web site www.pittwater.gov.au (Pittwater, 2010). The U.S. studies offered no comparison.

Development Application Tracking
83 percent of Sydney councils provide development application tracking software that allows the public to view the details of current applications lodged with the councils planning department. The *Local Government Act 1993* states that "everyone" is entitled to inspect a current version of

any development application and associated documents, free of charge (DLG, 1993:cl12). The usefulness of this service lies in its ability to provide the applications current status to the applicant or other interested parties without having to telephone the relevant councils customer service or planning department to gain this information. The software also provides broad search capabilities and a simple interface for the public to submit comments back to council on a specific development application. This software is typically used in Sydney councils that have a medium to high number of development applications per year. The U.S. studies offered no comparison.

Summary of what monologue communications contribute

Planning instruments, zoning maps, meeting agendas, minutes, electronic newsletters and development application tracking are all provided online by significant percentages of Sydney and U.S. councils. However, the implementation rate of audio/visual recordings of public meetings in Sydney councils, and planning instrument query tools is considerably slower. As Evans-Cowley and Conroy (2006; 2009) concluded, most forms of monologue communications are relatively easy and inexpensive to provide. However, the reasons why U.S. councils are reluctant to provide the slightly more complicated forms of communication remains a topic of future research. Possible barriers may include: no perceived need by the management, especially in areas with low volumes of development proposals and a reluctance to engage in the ongoing costs for the administration and maintenance of these communication tools in areas where information technology personnel are not readily available (Stenning and Associates, 2004; Yigitcanlar, 2005; Hornery, 2008).

FEEDBACK

Feedback communications provide the public with the opportunity to offer feedback or input into the planning process (Evans-Cowley and Conroy, 2006). The community has some control in feedback communications, but it is not guaranteed. Overall Sydney Councils scored highly for e-mail contact and provision of online comments to publically exhibited development proposals and draft plans.

Customer Service Email

All Sydney councils provide a general customer service email address on their web site. However, unlike the findings of Evans-Cowley and Conroy's (2006; 2009), there is very little provision of email addresses for departments or individual staff members. It was observed that a number of councils provided pictures and brief backgrounds on senior staff, but no direct email address is given. It is believed this is because councils are required under the *State Records Act* to keep full and accurate records of all business activities, including advice to the community, and to maintain a records management program (NSW Ombudsman, 2000). Therefore, all correspondence is handled through a single channel, where it is recorded in customer relationship management (CRM) software and placed in councils electronic document management system (EDMS), and then internally distributed to staff for attention and/or action.

Submit comments to Development Applications online / Submit comment to Plan on Public Exhibition

83 percent of Sydney councils accept comments submitted online to development applications currently on exhibition. In most cases this is functionality included within the development application tracking software, while 63 percent of Sydney councils accept comments submitted online to plans that are on public exhibition, while the U.S. studies offered no comparison. In most cases this is just an advertised email address. However, there are still a significant number of Sydney councils who prefer hard copy public submissions to be posted to council. The EP&A provides directions on what needs to be publicly exhibited and for how long, but makes no direction on how public comment is to be received. It should be noted that the majority of councils will still place hardcopies of relevant documents, pictures and models on exhibition at their respective customer service centers and public libraries; hence, online comments via email are complimentary to traditional practices.

Summary of what feedback communications contribute

Feedback communication using email is a valuable communication channel for the community and the planning system which allows interested parties to raise questions or issues with their local government at a time and place of their choosing. Recent studies by Stern et al. (2009) demonstrates that web participation differs according to age groups and education background, while finding that citizens are empowered by the opportunity to use both traditional and web based participation tools, although web based participation is not yet a replacement for traditional participation. Similarly, Conroy & Evans-Cowley (2010) survey of U.S. planners found that online participation is supplementary to traditional process, and also some evidence that participation tools are not reaching the broader population, especially underserved or disenfranchised section of the population. However, Carver et al. (2001) also suggests that well organised community groups could utilise all channels of participation, resulting in a loud minority putting their interests over the majority, and also puts forth the question of trusting information sourced from the Internet needs to be established to provide online participation with a level of legitimacy and accountability.

RESPONSIVE DIALOGUE

Responsive Dialogue communications offers the public a greater degree of interaction with the planning process. Responsive dialogue is demonstrated by planning in the form of applications and e-commerce. The main applications used by local government planning in Sydney are development applications and planning certificates. There are a large number of different development applications, but they can be collectively referred to as applications, as they are all lodged in a similar process. A planning certificate contains information for a specified parcel of land, including zoning and any State or local plans and restrictions that may apply.

E-commerce

Sydney Councils are well set up to accept payments for an array of online transactions. The availability of plug-in payment gateway software from Australian Banks and links to third party online payment systems have been taken up by councils in high numbers. This is considerably different to U.S. Councils, where planners are responsible for supporting this type of functionality on their web sites (Evans-Cowley and Conroy, 2009).

Lodge Development Application form online/Development Application Form

All Sydney councils provide online development application forms in PDF and Microsoft Word formats, however, only 17 percent of Sydney councils accept lodgment of electronic development applications online. While 79 percent of U.S. councils offer applications forms, and only 7 percent accept lodgment of applications online. As observed by Evans-Cowley and Conroy (2006; 2009), providing downloadable application forms is considered monologue communication when the form is not submitted online, hence, responsive dialogue mode of using electronic lodgment is heavily under utilised and there is little explanation about why this attitude persists. Furthermore, Hornery (2008) found that 89 percent of respondents to an NSW council e-readiness survey are operating electronic document management systems. Which suggests that applications lodged on paper will be electronically scanned by staff after lodgment at customer service in a high percentage of NSW councils.

The NSW planning system is promoting and councils are increasingly utilising pre-lodgment meetings and final checks of development application before accepting for lodgment (DoP, 2009b). This final checking helps the council avoid complications and loss of time due to incomplete applications in a planning system that places strict time limits on the determination of development applications. Of the 17 percent of Sydney councils that allow online planning certificate submission, the majority use *Smartforms* (Business.gov.au, 2010), an Abode Live Cycle technology that could be described as an interactive PDF form that is typically combined with a hosting service.

Summary of what Responsive Dialogue communications contribute
Submitting application forms and making payments are common practice on the Internet in both the public and private sectors. Evans-Cowley and Conroy (2006) make the observation that any security and privacy issues have been overcome by the private market; therefore, the low usage of online application form submissions is not a technical issue, but rather a cultural or operational change issue. Yigitcanlar (2005) found that a lack of citizen demand, limited value to the community, budgetary limitations and a lack of experienced technical staff as the most common obstacles sighted by councils to the automation of businesses processes that would result from the implementation of responsive dialogue communication tools.

MUTUAL DISCOURSE

Mutual discourse communications provide the public with the opportunity to engage in extended communications with the planning process. Walsh (2009) explains that moderated blogs and forums offer a chance to post an issue and get a quick response from the community in an environment where all voices are heard equally. Examples of mutual discourse are forums, blogs and a number of social media tools, such as Facebook and Twitter, which have emerged in more recent times.

Online Forums
Twelve percent of Sydney councils host discussion forums on local planning issues, while 5 percent of Sydney councils host blogs on local planning issues on their web site. It could be concluded that the results of the web site review displayed a very low take up rate by Sydney councils. However, it was discovered that a number of councils are using *Bang the Table* (Bang The Table, 2010). This independently hosted and moderated service provides an online discussion forum that is easy for councils to set-up and requires little modification of their web site. A search of the *Bang the Table* web site found hundreds of forums belonging to NSW councils, with several councils having multiple forums.

Social Media
The use of new social media tools, such as *Facebook* and *Twitter* was observed on 21 percent of Sydney council web sites. Once again, social media tools offer an opportunity for councils to engage with the community without major modification or maintenance to their existing web sites. Evans-Cowley and Conroy (2009), also found the uptake of social media has surpassed the use of discussion forums. Although the U.S. study did not provide a percentage of councils, but rather sighted examples of U.S. council usage.

Supporting web based delivery of municipal planning
A significant theme to emerge from the desktop review was the use of third party web based applications and hosting services, specifically, *smartforms* and *Bang the Table* and to a lesser extent *Facebook*. *Bang The Table* is an important example which shows Sydney councils are willing to use these forms of communication channels, but are less willing to use their own web sites. This finding concurs with the conclusion of Evans-Cowley and Conroy (2006; 2009) that U.S. local government avoids the financial and technical issues that come with implementing such technology online. For example, Wollondilly Council is situated on the South West fringe of Sydney and is currently planning its future as the sprawling suburbs of Sydney fast approach its large tracks of rural-residential land. In order to engage their community in this strategic planning process, Wollondilly is using *Bang the Table* to host a public communication and consultation exercise for their Draft Growth Management Strategy (Wollondilly, 2010). Wollondilly's council web site was ranked quite low in the review process; however, this example demonstrates that when a council is provided with a cost effective option, council will engage with web based communications.

FURTHER ANALYSIS

In an attempt to gain further understanding of what factors may promote the adoption of electronic communication on local government web sites, four easily accessible statistics were correlated against the web site review rankings determined by our present study. Simpson (2005) performed a similar exercise with population, number of tools and available web interactions. In our study correlations were performed against population, population growth rate and the Socio-Economic Indexes for Areas (SEIFA) statistics published by the Australian Bureau of Statistics (ABS). Furthermore, the number of effective full time development assessment staff and number of development applications determined per annum for each LGA were also correlated. This information was obtained from the NSW Department of Planning's Local Development Performance Monitoring Report (DoP, 2009a). A correlation matrix is provided in Table 3.

Population Correlation

Simpson (2005) found a significant positive relationship between technology offered and population size. Our analysis has found a poor relationship with population size and population growth rate. Population size has a slightly better relationship with web site review rankings than population growth rate. Simpson (2005) explains that his result demonstrates a relationship between population size and the use of technology. It could be assumed that the increased rate-payer base and the resulting increase in resources and staff allow councils to adopt more technological options, however, this result was not replicated in the Sydney data.

Planning Staff and Number of DAs determined Correlation

The web site review rankings were also correlated with planning staff and number of development applications determined per annum. Higher correlations were found than the population statistics. Unfortunately there is a lack of literature specifically addressing the costs and benefits of using electronic tools in the development assessment process, however, one can conclude that the higher the number of development applications and respective staff employed to process these applications, the greater the number of web based communications employed by the council, although this correlation is not strong. An example could be Pittwater Council, who achieved the highest web site ranking in Sydney, however, the number of staff and number of DAs determined per year is quite modest compared to many other Sydney councils.

Socio Economic Index Correlation

The socio-economic Index for areas (SEIFA) is a regularly calculated and published set of statistics that compare the relative social and economic conditions of cities, suburbs and towns across Australia (ABS, 2006b). SEIFA is generated from Census variables such as income, educational attainment, unemployment, and dwellings without motor vehicles.

The strongest relationship was found between SEIFA and the web site review rankings. An explanation for this result is less than clear when the data is consulted. For example Ku-ring-gai and Mosman Councils have the highest SEIFA scores in NSW, but achieved average web site rankings of nine and eleven respectively. While Liverpool, Fairfield, Auburn and Blacktown councils have significantly lower SEIFA Indexes, but equal to or higher web site rankings. Innovative usage was observed on several web sites that have lower SEIFA scores by using their web sites as a means to promote their area and attract business and people.

Overall, in contrast to Simpson's (2005) findings, population, planning staff and DAs determined statistics have very weak correlation to the web site rankings, while the SEIFA index has an improved correlation, it is still a moderate correlation. Therefore, it could be concluded that these factors are not strong determinates for Sydney Councils take up online communication through their web sites.

TABLE 3

Statistical Correlations between Population, Population Growth Rate, Planning Staff, Development applications SEIFA Index and Web Site Rank Order

		Web Site Rank Order	Population	Population Growth Rate	Number of DAs Determined	Number of DA Staff	SEIFA Index
Web Site Rank Order	Pearson Correlation	1	.093	.072	.129	.229	.397
	Sig. (2-tailed)		.556	.651	.415	.144	.009
	N	42	42	42	42	42	42
Population	Pearson Correlation	.093	1	.039	.816	.615	-.231
	Sig. (2-tailed)	.556		.808	.000	.000	.142
	N	42	42	42	42	42	42
Population Growth Rate	Pearson Correlation	.072	.039	1	.301	.284	-.066
	Sig. (2-tailed)	.651	.808		.053	.069	.677
	N	42	42	42	42	42	42
Number of DAs Determined	Pearson Correlation	.129	.816	.301	1	.740	.033
	Sig. (2-tailed)	.415	.000	.053		.000	.835
	N	42	42	42	42	42	42
Number of DA Staff	Pearson Correlation	.229	.615	.284	.740	1	.113
	Sig. (2-tailed)	.144	.000	.069	.000		.478
	N	42	42	42	42	42	42
SEIFA Index	Pearson Correlation	.397	-.231	-.066	.033	.113	1
	Sig. (2-tailed)	.009	.142	.677	.835	.478	
	N	42	42	42	42	42	42

CONCLUSION

This paper has presented a comparative study whose findings for the most part concur with the U.S. based studies conducted by Evans-Cowley and Conroy (2006; 2009) and Simpson (2005). The results of all three studies demonstrate that local government is familiar with *monologue* communication; however, the implementation level of more interactive tools that act in *feedback*, *responsive dialogue* and *mutual discourse* communication modes is significantly lower. The results from this study have provided the following findings.

Firstly, some five years after the studies of Evans-Cowley and Conroy (2006) and Simpson (2005), this snapshot has demonstrated that *monologue* communications are the dominant form of communication used by planning departments in Sydney's local government. The follow up

study by Evans-Cowley and Conroy (2009) also found that monologue communications is still the dominant communication channel in the U.S. The low costs and simple functionality associated with monologue communications represents quantifiable time and cost savings for local government customer service.

Secondly, the use of interactive tools for *responsive dialogue* and *mutual discourse* communication is a challenge for local government. Previous Australian studies by Yigitcanlar (2005) and Hornery (2008) have found a number of budgetary and operational obstacles sighted by local government that prevent them from implementing and operating these communication tools on their own web sites. However, a significant finding from this study has been the programs such as *Smartforms* and *Bang The Table* that provide cost effective hosting and maintenance options for interactive web based communication for local government. Evans-Cowley and Conroy (2006; 2009) concluded that the main obstacle to implementing interactive communications tools is a lack of technical expertise that you would not expect to find in a planning department. These newer technologies and hosting programs simplify the technical aspects for the planning department, by providing planning staff with a less technical interface by using content management systems to build and maintain the communication tools.

Thirdly, Evans-Cowley and Conroy (2006) found that U.S. planning departments were receiving considerable pressure from the public to increase the functionality on their web sites. While this study did not interview local government planning staff, previous studies by Yigitcanlar (2005) and Hornery (2008) utilised similar data collect methods, but did not find similar pressures in Sydney. A recent study conducted by the Environmental defenders office (EDO, 2010) concludes that the NSW community generally feels disconnected with the NSW planning process and deeply cynical about how worthwhile it is to engage with the planning system. These types of community feelings would certainly restrict the level of engagement the community is seeking, but it should also be recognised that communication tools such as those discussed in this paper could be used to improve the situation.

Fourthly, this study demonstrates that the use of social media has gained early traction and has over taken discussion forums and blogs. Recent work by Evans-Cowley (2010), Evans-Cowley and Hollander (2010) and Brabham (2009), demonstrates that there is potential for social media to supply a platform for public participation in planning processes and even if planners do not take up the technology to engage their citizenry, the citizenry are looking to take it up to engage the planners.

Finally, Evans-Cowley and Conroy (2006) noted that U.S. cities have not begun collecting participant evaluations of online activities and interactions, and there is no publically available information of this nature for Sydney local government. Correlations presented in this paper display some idea of what drives councils to provide online communications; however, deeper analysis of the demand-side factors, such as the recent studies by Stern et al. (2009) and Conroy and Evans-Cowley (2010), need to be conducted to gain further knowledge of the drivers for online participation in local government.

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