

The Chinese Public Administration Review
Vol.14 No.2 March 2005, pp.53~75

A Study of Digital-Democracy and E-Voting –The Experience of Practical Process in Taiwan *

By

Chung-Yuang Jan **, Chun-Yuan Wang, and Keng-Ming Hsu ***

National Chengchi University

Abstract

Our society has undergone several transformations by the coming of information age, and one of which is the public service delivery. Nowadays, many governments provide services such as Internet, BBS, or IC cards by new technologies. These e-techs will inevitably propel the mutation in organization structure, culture, management, and so on.

According to a investigation of performance priority of central government's web sites in 2001, Taiwan was ranked the second highest among 196 countries. The investigation makes the experience of e-government and digital-democracy in Taiwan more conspicuous. Taiwan, recently, is stepping into the practice level on which the value of digital-democracy will be examined, and e-voting will be developed. Therefore, some points will be discussed in this paper: first, the formation of e-government, digital-democracy, and e-voting; second, the case of e-voting of the USA and UK; and finally, the comparison of these two cases, and the enlightenments and implications to Taiwan.

Key words: e-government, digital-democracy, e-voting, New Public Management

1. Introduction

As use of the internet and World Wide Web by citizens has increased, a number of scholars have touted the web as a means to increase democratic

* The draft of this paper has ever presented on the world conference "E-Governance: Challenges and Opportunities for Democracy, Administration and Law", held by The International Institute of Administrative Sciences (IIAS), Seoul, Korea, July/14-19.

** Professor of Department of Public Administration, National Chengchi University, Taiwan, R.O.C.. (E-mail: cychan@nccu.edu.tw)

*** Wang and Hsu are Ph.D. students of Graduate Institute of Public Administration, National Chengchi University, Taiwan, R.O.C..

participation and strengthen political community. It has been argued that new information technologies will transform the nature of political activity by infusing representative democracy with the direct democratic ideals of Ancient Greek city state, or by fostering local communitarian political structures.

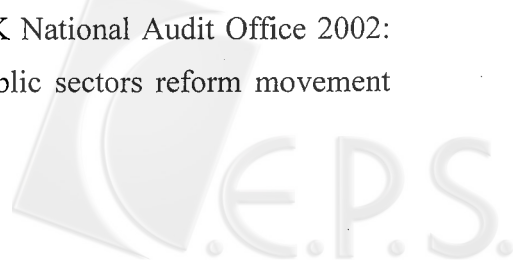
In this paper, first of all, the influence of electronic government and digital democracy will be examined thoroughly. Second, the paper will focus on the issue of E-voting. Third, the paper will discuss the cases of e-voting of the USA and UK. Finally, the development of e-voting of Taiwan will be explored, and some recommendation of the development in Taiwan will also be provided in this paper.

2. Review of the development of Digital-Democracy and E-Voting

2.1 E-Government

E-government comes in part from a belief that technology can transform government's often negative image. Citizens have relatively limited access to and knowledge of internal government procedures and policy-agenda details. The purview and responsibility of the public official is consequently richer than that of citizens (Moon and Welch, 2004: 7).

In most political systems, e-government can refer to the impact of the Internet and related network technologies on the values, processes and outcomes of central and local government and their administrative structures, with the objective of providing public access to information about all the services offered by government and enabling the public to conduct and conclude transactions for all those services(UK National Audit Office 2002: 1). E-government emerged in the form of public sectors reform movement



during the early 1990s.

The proponents of New Public Management advocated that political system should shift from the inward-facing mainframe computer systems of bureaucracy (in the 1960s) to outward-facing networks framework of public sectors, and make citizens involved in public affairs easier. Government becomes an opening and learning organization and is expected to respond to the needs of its citizens by the way of email and web sites rapidly. In this view, citizens are perceived mainly as the 'consumers' of public services.

Three models concerning the operation of e-government nowadays (Oakley, 2000):

- (1) The new economy model: This model stresses the delivery of high quality public services and the movement toward a more self-service citizenship. E-governance is deemed that a response to the demands of citizens. Besides, e-government stresses convenience and the citizen can get information and service in 24-hour. In this model, the development of infrastructure tends to follow the market, with a consequent 'digital divide'. The US is the best example of this, but other countries such as UK have adopted elements of this model.
- (2) The e-community model: In Europe, which have a strong tradition of civil society and freedom of information, high levels of educational and technological penetration and a relatively even distribution of wealth. This model focuses on potential social innovations resulting from widespread access and the role of citizens.
- (3) The planned economy model: The model is used in countries which traditionally use forced public sector tools to drive and shape private sector activity and investment. In this model, economic development is very much a driver, but the development of infrastructure is seen as a government responsibility, with heavy subsidies for the construction of networks.

“E-government” is challenged by several scholars. For examples, Chadwick and May(2003)suggested that changes are limited to a managerial agenda of service delivery more consistent with the New Public Management and that the opportunities offered by the Internet for invigorating democracy and citizenship might be missed. Another argument is that the issues of unequal access to web sites services are being neglected. The other discussion is that if we carry out the policy of electronic channels replace traditional face-to-face contacts with public service delivery completely, the representative political system might damage the core spirit of democracy.

If we want to correct the criticism of e-government, we should pursue the digital-democracy at the same time.

2.2 Digital-Democracy

The initial goal of e-Government was o achieve efficiency of government. Due to advancement of information technology and the increased participation by citizens, e-government has been emphasized on efficiency as well as democracy (Kim, 2004: 4).

Digital-democracy can be understood as the capacity of the new communications environment to enhance the degree and quality of public participation in government (Kakabadse et al., 2003: 47). To explore how the Internet and the World Wide Web might be used to improve the democratic process, the focuses will be put on three types of improvements enhance citizen participation. First, we examine the contention that citizens do not have the civic education necessary to act meaningfully in the political process; technology might provide citizens with better information, elucidate values and contribute to public debate regarding public issues. Second, we consider the perception that there is a general apathy towards civic affairs among the general public, and a decline in the ‘social capital’ required to build political

community and encourage participation. Third, we discuss the idea that citizens are disconnected from with their government. Also we will examine the extent to which technology might bridge the gap between the governing and ordinary citizens (Jan, 2000).

The civic education required for democratic decision-making involves not only the dissemination of information but also the building of the values underlying democratic decisions. Effective democracy requires that the public reconstruct value choices in civic or collective, rather than individualistic, terms. Democratic renewal required not merely information, but a shift in values at the most fundamental level. Also civic education must develop the public's ability to understand and confront the value trade-offs inherent within policy choices (Hale, Musso and Weare, 1999).

One line of criticism holds that citizens lack the basic education and decision-making skills necessary to be active participants in the political process. Without civic education, democratic choice is little more than the expression and aggregation of private prejudices' (Barber, 1984: 278). Barber echoes a common view among media scholars and political scientists that ignorance on the part of the American voter severely constrains their ability to develop consistent political positions, 'to understand and evaluate policy options, and hence, to participate meaningfully in democratic politics' (Yankelovich, 1991). Importantly, Barber appears to equate information and education with 'good' political judgment. From this perspective, polls that consistently find that most people cannot name their Congressional representative, let alone state or local representatives, might be considered proof that citizens are unable to participate effectively in the political process. Whilst information may be necessary to engage the public in policy decisions, many argue that it is not sufficient. Yankelovich, for example, argues that this emphasis on the role of information is elitist, in that the traditional definition

of 'well-informed' is to have the knowledge base of the governing elite. From this standpoint, civic education would imply the mere conveyance of facts from experts to the citizenry at large. Yankelovich wryly comments: The logic is this; they, the experts, are well informed; the public is poorly informed. Give the public more information, and it will agree with them' (Yankelovich, 1991:16). From this perspective, the civic education required for democratic decision making involves not only the dissemination of information out also the building of the values underlying democratic decisions. Effective democracy requires that the public reconstruct value choices in civic or collective, rather than individualistic, terms. Etzioni (1988), Putnam (1995) concur that democratic renewal requires not merely information, but a shift in values at the most fundamental level. Finally, Yankelovich believes that civic education must develop the public's ability to understand and confront the value trade-offs inherent within policy.

A second line of argument regarding the failure of democracy is that citizens have become so alienated from and frustrated with the political process that they have become apathetic. Scholars, politicians and public administrators routinely herald declining voter turnout and lack of attendance at public meetings as evidence of citizen apathy (Landers, 1988). Putnam cites declining membership in civic and fraternal associations as evidence of a withdrawal from the public sphere (Putnam, 1995). Similarly, Blakely and Snyder (1997) contend that people are retreating from civic life to the insularity of gated communities.

Political economists argue that citizen non-action is actually the result of a rational calculus comparing the costs and benefits of participation. Given that any single individual's effort is unlikely to make a difference, that it is usually difficult to exclude non-participants from enjoying the benefits of political action, and that the costs of participation are high, most citizens will

choose to 'free ride' on the political activities of others (Ostrom, 1990; Miller, 1997).

Critical theorists have argued that citizen apathy stems from a shift in focus and power away from communities and towards the world of work. Barber contends that this shift leads to apathy. As he argues, people are 'apathetic because they are powerless, not powerless because they are apathetic' (Barber, 1984: 272).

The policy prescriptions for reducing citizen apathy range from technical interventions aiming to lower costs of participation, to more fundamental efforts to build political community. On a deeper level, a number of scholars contend that to address political apathy, one must build effective local political communities based on neighborhood organizations to bring about democratic renewal. For example, Barber argues that there is a need to reinvigorate our 'thin' (liberal/pluralist) democracy with a 'strong' democracy that combines democratic participation with meaningful association of citizens within a civic community: Community without participation first breeds unreflected consensus and conformity and finally engenders unitary collectivism of the kind that stifles citizenship and the autonomy on which political activity depends. Participation without community breeds mindless enterprise and undirected, competitive interest-mongering. (Barber, 1984: 155). Barber and others (Etzioni, 1988; Ostrom, 1990) believe that to embed democratic participation within the community requires that interest group politics be replaced with the politics of association within and among civic groups, at the neighborhood level. The importance of networks of associations in a strong democracy is not a new idea.

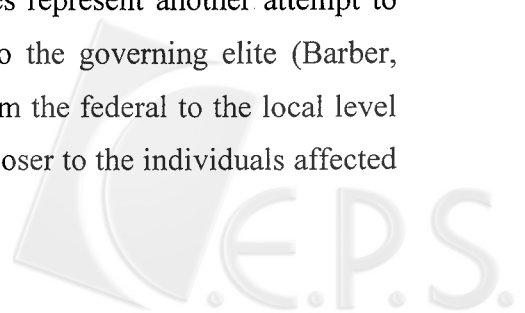
Much of the recent work on social capital highlights the importance of building strong civic associations as a means to reduce apathy and improve the democratic process (Coleman, 1988; Newton, 1996). According to this

literature, democratic processes function better when individuals operate within social networks of overlapping groups that have repeated interaction over time. Such networks of civic engagement increase confidence in social relations by increasing the costs of defection, foster norms of reciprocity, and improve information about the trustworthiness of individuals (Ostrom, 1990). These values of N generation in turn facilitate the negotiation and compromise that democratic governance entails (Hale, Musso and Weare, 1999).

The third line of criticism is that democracy is not functioning properly because there is a fundamental disconnection between citizens and their government. As Yankelovich describes: "When the proper balance exists between the public and the nation's elite, our democracy works beautifully. When the balance is badly skewed, as in the present era, the system malfunctions" (Yankelovich, 1991: 8).

Some have attributed this disconnection to the increased size and power of the bureaucracy (Niskanen, 1971), or to the so-called 'iron triangle' of interest groups, administrative agents and legislators. Others have argued that meaningful citizen involvement is barred by the information asymmetry between the governing elite and the general public. Still others (Stigler, 1971) contend that high communication and organization costs bias the policy process to be more responsive to small, well-organized interests than to large, poorly organized groups.

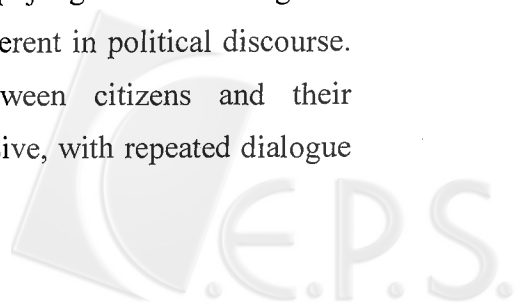
Many of the proposals for reuniting government with the governed call for a transfer of power from representatives and the business elite to 'ordinary' citizens. The initiative and referenda processes represent another attempt to give more direct power to citizens relative to the governing elite (Barber, 1984). Efforts to 'devolve' decision; taking from the federal to the local level also aim to move government policy making closer to the individuals affected



by policy decisions.

Many of these 'fixes' are little more than incremental and often, politically symbolic attempts by politicians to engender public confidence in their ability to affect change. They seek to reduce the costs of citizen involvement in politics or the degree to which the complex language of government prevents citizens from engaging in political dialogue. The assumption is that reducing financial or information barriers will inevitably improve the level and quality of citizen-government communication and interaction. Many scholars (Yankelovich, 1991; Putnam, 1995; Fox and Miller, 1995; Bimber, 1996), however, contend that a functioning democracy requires more than the removal of barriers to communication. It is not enough simply, to provide citizens with the opportunity to become active in civic affairs: arcane public hearings held at midday are of little use to those who work. More fundamentally, political communication processes typically stand outside the daily consciousness of most citizens. Fox and Miller characterize the existing political process as the: Politics of hype reality a rapid sequence of images and symbols with unknown or uncertain referents racing through the public consciousness (where) simulation and media spectacle replace political debate' (Fox and Miller, 1995: 43).

As with civic education, improvement in democracy is not simply a function of improving the mechanisms of communication, rather it requires developing a process that is deliberative in nature. Inherent in 'good' public judgment for Yankelovich and the authentic discourse of Fox and Miller is a focus on the value consequences of various policy options. Fixing democracy requires moving beyond mass opinion and snap judgments to thoughtful consideration of the important value conflicts inherent in political discourse. Consequently, improving the connection between citizens and their representatives requires public debate to be recursive, with repeated dialogue



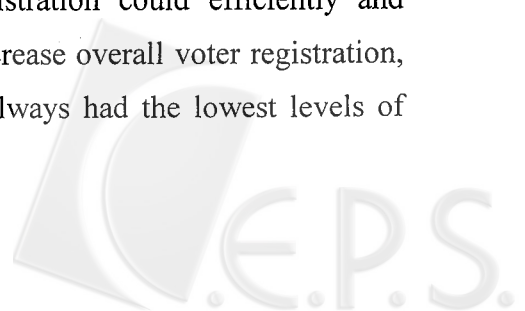
regarding goals' and the value consequences of various options for achieving them. This type of repeated interaction between citizens and the governing elite will arguably provide opportunities for the process of 'working through*' described by Yankelovich, wherein individuals acknowledge the value trade-offs inherent in political choices. It is not enough for citizens and government to have the opportunity simply to talk past one another. Democratic renewal requires what Barber terms 'dialogical' communication: cross-communication between citizens and citizens, and between citizens and public officials (Hale, Musso and Weare, 1999).

As young citizens participate dialogical communications, the values of democracy will be deeper in mind.

2.3 E-Voting

E-voting in public elections seems to be an extension of digital-democracy. We view it as tinkering around the edges of digital-democracy, having the technical capacity to work and making voting more convenient for citizens. With such a proliferation of the method, we should stress on the participation of citizens. Furthermore, we should focus on the groups of young people and others who seldom involve in political activities before.

The participation of voters that is essential to a healthy democracy could be increased with Internet technology. The digital divide between those who do and do not have computers and access to the Internet decreases every day as Internet technology becomes more affordable. Internet voting could also create gains in efficiency and effectiveness for voting technology, democracy, and the voting process. Internet voter registration could efficiently and effectively accomplish this and could also increase overall voter registration, especially among young people, who have always had the lowest levels of voter registration.



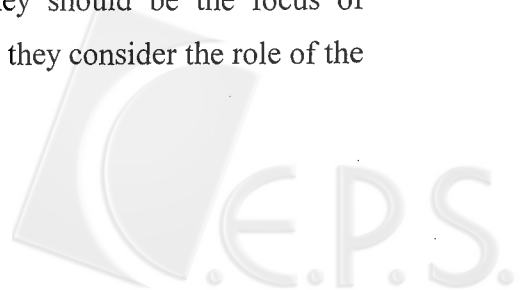
Thus, the e-channels could create a more efficient and effective voting process. The efficiency and effectiveness of e-channels could also result in increased voter participation. Clearly, e-voting could also increase rates of voting among those in the voting age population who have been never or seldom to vote. However, while the Internet could yield many benefits to the democratic process, there are some shortcomings that must be overcome.

In the true political life, Globalization affects the development of e-governance. So we have to discuss the development of e-government in the US and the UK and the main e-government, digital-democracy and e-voting policies.

3. The cases of the USA and UK

3.1 The Case of the USA

In 2000, Arizona democratic presidential preference election provided experience and insightful experience to the possibility of Internet voting systems. Internet voting systems could capitalize on opportunities to improve the efficiency and effectiveness of voting. It provided us three key points to rethink the e-voting. First, state and local jurisdictions should continue to experiment on Internet voting within locally limited-scope elections for school board and city council members. Second, in collaboration with state and local experimentation, the level of research and development to improve Internet transaction security should be increased. Third, social scientists should study the effect of Internet voting on voter participation and the democratic process. Ultimately, Internet voting systems should be neither accepted nor rejected out of hand. Instead, they should be the focus of vigorous research that can assist policy makers as they consider the role of the Internet in the democratic process(Done, 2003).



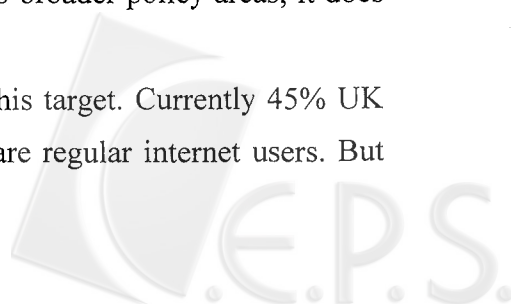
In March 2002, Vice President Cheney announce the US government got an online project that provided citizens to do everything over the Internet. The redesigned site ropes together 35 million federal Web pages, along with state and local government sites, to provide an array of services and information. Another pioneer cases include the City of Los Angeles, and also a few smaller authorities such as the town of Blacksburg in Virginia. Indeed, according to research reports in the US, while over 60 percent of the population find out policy issues related to their lives by using G websites which have been used by them for a long time. This suggests that the re-design of public interactions with government may be a bigger incentive to use e-governance than the re-design of public services.

3.2 The case of the UK

The Representation of the People Act (2000) provided a kind of mechanism in which local government can pilot electronic means of voting. In May 2000, some local government elections that included e-voting or counting in polling stations. Some other local governments have also implemented with e-voting in local referendums. These e-voting pilots are taking place within the context of the government's commitment to e-enable all public services by 2005.

The Cabinet Committee set up by the UK Parliament has divided digital-democracy into two distinct camps: e-voting and e-participation. The various forms of e-voting have been tested during elections at the local level in May 2002. But if the experience of e-governance in the UK has anything to teach us, it is that technology has to be integrated into broader policy areas, it does not work as an add-on.

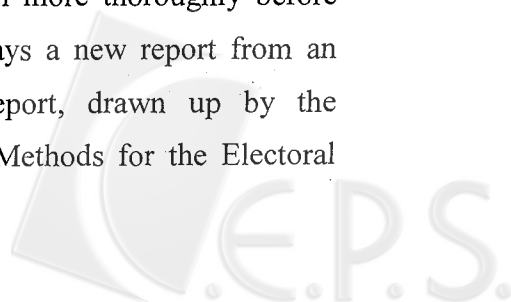
UK government is on track for achieving this target. Currently 45% UK households are online and 47% of UK adults are regular internet users. But



take-up among the most disadvantaged groups in society – those on low incomes, the elderly and people with disabilities – is lower. These groups are traditionally heavy users of public services and potentially have most to gain from convenient, customer-focused channels of electronic delivery. Services like benefit applications, access to health records and GP appointment bookings will all be available online. But without access to the internet or the skills to use it confidently, these groups may face further social exclusion. We need to transform digital opportunities available to all UK citizens. The People section of this report sets out our progress against our target for access and our strategy for encouraging take-up among “digitally divided” groups. There are four themes to this strategy, which together address key barriers to take-up and use of the internet.

The goal of UK is to make all government services available electronically by 2005, with key services achieving high levels of use. The 2005 framework for implementing electronic government does not assume that every service will be provided through electronic means. The vision of an e-enabled election is one that is likely to support a range of different ways of voting, from the traditional polling station through to internet voting from any location in the world. Within this framework, the policy commitment is that it would be sensible to hold an e-enabled General Election sometime after 2006 - probably the election after next. In the meantime, the various initiatives in place support the development of extensive experimentation with different technological options as a precursor to full implementation of e-voting in the UK.

Online voting schemes should be tested much more thoroughly before being rolled out for elections in the UK-wide, says a new report from an influential think tank. The findings of the report, drawn up by the Independent Commission on Alternative Voting Methods for the Electoral



Reform Society, come as Local Government and Regions Secretary Stephen Byers prepares to announce a series of new schemes to pilot new voting systems.

As Julia Glidden, the UK director of election.com, said: "The UK e-voting pilots will be the first major public sector implementation of online voting. Providing 21st century voting methods for 21st century lifestyles is a natural extension of the Government's path-breaking digital-democracy agenda and represents a potentially important step in the effort to address declining voter turnout.

After the discuss the two e-voting cases in the USA and UK, we can make a comparison of these:

Table 3.1 The Comparison of the USA and UK's experience of e-voting

	Goal	Participation	Center Gov.	Local Gov.
USA	The re-design of public interactions with gov. may be a bigger incentive to use e-governance.	Over 60 percent of those who use Gov. websites have used them	Vice President Cheney	Arizona, Los Angeles, and Town of Blacksburg in Virginia
UK	Make all government services available electronically by 2005	45% UK households are online and 47% of UK adults	Representation of the People Act	Bolton, Broxbourne, Chester, Chorley, and et al.

From table 4.1, we can find that the goal of e-voting the USA is to increase public interaction with government, and it is to make all government services on-line in the UK. Besides, there are almost half on-line people have participated in e-voting.

4. The Practice Process and the Experience in Taiwan

In Taiwan, the visions The E-government includes (RDEC, 2002, visited

on 10/20/2004):

- a. To employ information and communications technology in support of government re-engineering, provide innovative services, improve administrative efficiency, and raise the quality of public service.
- b. To reform civil servants' operating procedures and re-engineer the handling of public business so as to take advantage of modern computer and network communications technology, thereby making government agencies dramatically more flexible and responsive, accelerating service speed, extending service time, broadening geographical service scope, enriching service options, and lowering costs.
- c. To enable government agencies, businesses, and the public to conveniently obtain a variety of government services via a broad range of channels at any time and place, and to provide integrated, innovative interdepartmental services such as "exemption from need for physical transcripts," "paperless applications," "one-stop services," "multi-point, multi-channel, 24-hour services," and "service to the home," etc.

With the development of information and communication technologies (ICTs), there are more and more people communicate through Internet. From table 4.1, we can also understand the trend of the online population in Taiwan. In June 1996, there were only 1.7% of Taiwan's population online, however, when it was in July 2001, there were over half people online in Taiwan.



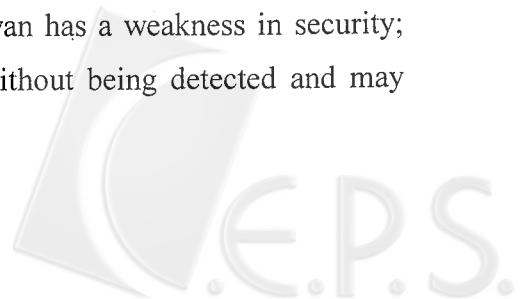
Table 4.1 The Rate of Online Population in Taiwan

Date	Number	% of POP	Survey Source
July 2001	11.6 million	51.85	Nielsen Net Ratings
July 2000	6.4 million	28.84	Iamasia
December 1999	4.79 million	21.66	Computer Industry Almanac
September 1998	2.8 million	12.9	Institute for Information Industry, Taiwan
December 1997	1.66 million	7.7	Institute for Information Industry, Taiwan
December 1996	441,000	2.5	Institute for Information Industry, Taiwan
June 1996	365,000	1.7	Institute for Information Industry, Taiwan

Resource form: http://www.nua.ie/surveys/how_many_online/asia.html, visited on 2004/9/7.

West (2001) has ever investigated the center government's web-sites in 196 countries. In his research, he made a performance priority of central government's web site in these countries, and Taiwan was ranked the second highest. But he also found that the development of e-government are not as our expect.

Lin, Hwang, and Chang(2003) pointed out that an electronic voting system makes it possible for the voters to cast their ballots over the computer network. Hence, voters can participate in elections without having to go to the polling places, which is more convenient and efficient. However, the scheme of the E-voting development in Taiwan has a weakness in security; that is, some voters may still double vote without being detected and may even reveal information they should not.



Not only Lin, Hwang, and Chang's research suggested the security system is not sufficient in the development of E-voting in Taiwan, but Liaw and Fan(1998)also analysis the e-voting from the technology viewpoint in Taiwan. Norris(2004: 6-7)also considered that "the theory suggests that rational citizens will be less likely to vote if they face major electoral costs in registering as electors, in finding suitable information about the issue, parties and candidates that is useful in making voting decisions, or in casting a ballot to express their voting choice." So there are some problems should be resolved in E-voting facilities when Taiwan develops E-voting. Besides the technology, Fong(2002) addressed that E-voting from the law perspective. However, from the discussion of e-government and e-democracy above, it is more important that we should ask the question about the role of government and the democracy in Taiwan's E-voting development.

In Taiwan, there were several studies which were about information and democracy, and these researches also point out that there were some aspects which can be improve in Taiwan's e-government. Chen, Huang, and Hsiao(2000)examines the information circulation and aggregation function of the web sites of Taiwan's Legislative Yuan(LY) and 23 city (county) councils. In the results, they found that the information functions of web sites of Taiwan's legislative bodies has reached world average, however, the LY web sites focused on the provision of academic and professional information and neglected the information need of common people.

Shiang(1999) has ever pointed out that digital-democracy has opened a new page for democratic administration, but after his investigation of on-line forums of Taiwan's municipal web sites, he found that it doesn't reach a high standard in terms of democratic practice. Lin and Kuo(2000)used a analytical framework of WAES(website Attribute Evaluation System) , which was developed by the Cyberspace Policy Research Group(CyPRG) of Arizona

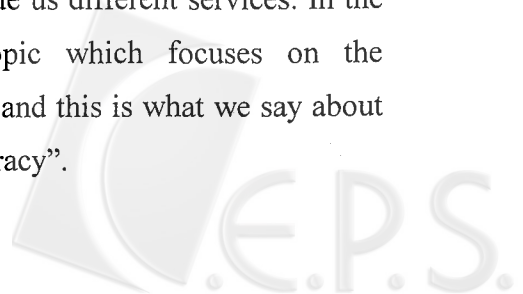
University to explore the local government of Taiwan by three criterion(openness, transparency, and interactivity). In their research, they found that many web sites of local governments of Taiwan were correspond the criteria of openness, however, many web sites do not realize the value of democracy. In other words, these sites cared most of the skills or technologies, and not the democracy.

Even so, we do not disappoint about the development of Taiwan's e-government. West(2004: 17) suggested that there are four general stages of e-government's transformation: 1. the billboard stage; 2. the partial-service-delivery stage; 3. the portal stage; and 4. interactive democracy with public outreach and accountability enhancing features. After examining the case of Taiwan, we can find that it is going from stage 3 to stage 4.

In 2004, the Research, Development, and Evaluation Commission of Taiwan's Executive Yuan have a research proposal of digital-democracy, and the key point of this proposal is about "e-voting". In order to help the transformation of e-government of Taiwan, we can fide two experience from the USA and UK' cases. The First one is that government should have an explicit goal to develop e-government, digital-democracy, and even e-voting. The other one is that the government should encourage citizen to participate public affairs on-line.

5. Conclusion and Recommendations

Our society has undergone several transformations by the coming of information age, and one of which is the public service delivery. Through e-government, there are different model to provide us different services. In the discussion of e-government, there is a topic which focuses on the improvements of enhance citizen participation, and this is what we say about "in order to increase the degree of direct democracy".



Digital-democracy can be understood as the capacity of the new communications environment to enhance the degree and quality of public participation in government(Kakabadse et al., 2003: 47), and e-voting is one way to practice Digital-democracy.

What we have learned from the cases of US and UK is that e-voting certainly benefits the practice of digital-democracy. Nonetheless, whether the public ability is developed by civic education should be taken into consideration more seriously. Consequently and finally, two suggestions are proposed for the purpose of the improvement of digital-democracy and e-voting in Taiwan: first, the establishment of an explicit goal; second, a broader coverage of on-line participation.

References

- Barber, B. (1984) . Strong Democracy: Participatory Politics for a New Age. Berleley: University of California Press.
- Blakely, E.J. and Snyder, M.G. (1997). Fortress America: Gated Communities in the United States. Washington, DC: Brookings Institution Press.
- Chadwick, A. and May, C. (2003). "Interaction Between States and Citizens in the Age of The: "E-Government" in the United States, Britain and the European Union", *Governance*, vol. 16 (2).
- Chen, D. Y., Huang, T., and Hsiao, N. (2000), "Information and Democracy: An Evaluation of the Political Functions of Legislative Bodies' Web Sites on Taiwan", The Politics and Information Conference, 1st, held in Fo-Guang Uni., I-lan, Taiwan, on 2000.12.21~22.
- Coleman, J.S. (1988). "Social Capital in the Creation of Human Capital", *American Journal of Sociology*, 94 (Supplement), S95-S120.
- Done , Rober S. (2003), "Internet Voting Bringing Elections to the Desktop",

- in Abramson, M. A. & Morin, T. L. (eds), *E-Government 2003*, IBM Endowment for the Business of Government, New York: Rowman & Littlefield Publishers, INC. 2003.", pp. 237-265.
- Etzioni, A. (1988). *The Moral Dimension: Toward a New Economics*, New York: The Free Press.
- Fong, Jerry G. (2002). "Electronic Voting and Its Development in Corporate Governance--A Comparative Introduction," *Socioeconomic Law and Institution Review*, Vol. 29, 139-179.
- Fox, C. J. and Miller, H. T. (1995). *Postmodern Public Administration: Toward Discourse*, Thousand Oaks, CA: Sage.
- Jan, Chung-Yuang (2000). "Developing Digital Democracy: the Values and Behavioral Patterns of N Generation", 5th International Symposium on Asian Youth Studies, Organized by Macau Education and Youth Department.
- Hale, M., Musso, J., & Weare, C. (1999). *Developing Digital Democracy: Evidence from Californian Municipal Web Pages*. In B. Hague & B. Loader (Eds.), *Digital Democracy*. pp. 96-115. London: Routledge.
- Kakabadse, A, Kakabadse, N., and Kouzmin, A. (2003). "Reinventing the Democratic Governance Project through Information Technology? A Growing Agenda for Debate", *Public Administration Review(PAR)*, 63(1), pp. 44-60.
- Kim, Seang-Tae. (2004). "Toward a New Paradigm of E-Government: Form Bureaucracy Model to Governance Model", presented at the 26th International Congress of Administrative Sciences, Seoul, Republic of Korea, 14-18 July 2004.
- Landers, R. K. (1988). "Why America Doesn't Vote", *Editorial Research Reports*, F19, pp. 82-95.
- Liaw, Horng-twu, and Shiou-wei Fan (1998). "The Practical Application for



Electronic Voting and Electronic Loting Systems Based on a Untraceable Decryptor,” *Journal of Shin-Hsin University*, Vol.8, pp.19-34.

Lin, H. and Kuo, Y. (2000). “A Study of Democratic Openness of Taiwan’s E-government—A Positive Observation”, *The Politics and Information Conference*, 1st, held in Fo-Guang Uni., I-lan, Taiwan, on 2000.12.21~22.

Miller, G. (1997). “The Impact of Economics on Contemporary Political Science”, *Journal of Economic Literature*, 35, pp.1173-1204.

Moon, Myung Jae and Eric Welch. (2004). “Same Bed, Different Dreams?: a Comparative Analysis of Citizen and Bureaucrat Perspectives on E-Government”, presented at the 26th International Congress of Administrative Sciences, Seoul, Republic of Korea, 14-18 July 2004.

Newton, K. (1996). “*Social Capital, Trust and Confidence in Advanced Democracies*”, paper presented at the conference on the Erosion of Confidence in Advanced Democracies, Palais des Academies, Brussels, 7-9 November.

Niskanen, W.A. (1971). *Bureaucracy and Representative Government*, Chicago: Aldine-Atherton.

Norris, Pippa (2004). “E-voting as the Magic Ballot ? ”, <http://ksghome.harvard.edu/~pnorris/Acrobat/EUI%20E-Voting%20as%20the%20Magic%20Ballot.pdf>, visited on 2004/9/5.

NUA (2002). http://www.nua.ie/surveys/how_many_online/asia.html, visited on 2004/9/7.

Lin, Iuon-Chang, Min-Shiang Hwang, and Chin-Chen Chang (2003). “Security enhancement for anonymous secure e-voting over a network,” *Computer Standards & Interfaces*, 25(2), 131-139.

Oakley, Kate (2000). “E-Government: An International Study of Online

- Government,” *Cable & Wireless Communications*, London 2000.
(<http://www.cwcom.co.uk/cwuk/press/pressreleases/e-govt.pdf>)
- Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*, New York: Cambridge University Press.
- Putnam, R. (1995). “Tuning in, Tuning out: The Strange Disappearance of Social Capital in America”, *PS. Political Science and Politics*, 28, 4, pp.664-671.
- RDEC (2002), “E-government Development in Taiwan”,
<http://enable.rdec.gov.tw/eng/index.htm>, visited on Oct., 2004.
- Shiang, J. (1999). “Ideal and Reality: Realization of Democratic Administration and On-Line Forums of Municipal Web Sites”, *Tunghai Social Science review*, Vol. 18, pp. 149-178.
- Stigler, G. J. (1971). “Theory of Economic Regulation.” *Bell Journal of Economics and Management Science*, 2 (spring) pp. 3-21.
- UK National Audit Office (2002). *Better Public Services Through E-Government*. HC704-1, HMSO.
- West, D. M. (2001). “World Markets Research Centre Global E-Government Survey 2001”, available on-line
(<http://www.worldmarketsanalysis.com/pdf/e-govreport.pdf>),
accessed 2004.4.15.
- West, D. M. (2004). “E-Government and the Transformation of Service Delivery and Citizen Attitudes”, *Public Administration Review(PAR)*, 64(1), pp. 15-27.
- Yankelovich, D. (1991). *Coming to Public Judgment: Making Democracy Work in a Complex World*, Syracuse: Syracuse University Press.



中國行政評論
第14卷第2期 民國94年3月 頁75

數位民主與電子投票：台灣實踐過程之初探

詹中原、王俊元、許耿銘

國立政治大學

摘要

隨著資訊社會的來臨，當代的社會有了許多的轉變；其中之一，即是公共服務傳遞的模式。今日，許多政府藉由網際網路等新科技來提供服務，而這些電子化的科技，也無可避免的影響了公部門組織的結構、文化，及管理面向。

根據調查，台灣的政府網站在世界196個國家中排名居於領先之位置，此也突顯出了台灣在發展電子化政府及數位民主此一議題研究上之重要性。近年來，關於「電子投票」之議題，尤其在電子投票技術發展的部分，在台灣逐漸的受到了重視。值得注意的是，「數位民主」乃是電子投票發展之核心。因此，本文首先將探討電子化政府的背景、數位民主的意涵，以及電子投票的發展；其次並將介紹、比較英國與美國之經驗，最後將分析探討台灣目前實踐之現況，及提出相關之建議。

關鍵詞：電子化政府、數位民主、電子投票、新公共管理。

