
Toward Digital Equality: The Study of ICT and the Effective Public Service Delivery in Taiwan

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Abstract: Our society has undergone several transformations with the coming of the information age, one of which is the method of public service delivery. Nowadays, some governments provide services through new technologies, such as Internet, BBS, or IC cards. These e-techs will inevitably propel the mutation in org structure, adv process...and so on.

From the public administration perspective, obviously, NPM is also a force underpinning the e-governance. In the early 1980s, G. Caiden described that administrative reform came of age. Under the Thatcherism and Reaganism, the core values of government reform are entrepreneurship and competition, and these will be helpful to the formation of E-government.

In this paper, some points will be discussed. First, the formation of the society of Information under the development of Information and Communication Technology (ICT) . Second, the transformation of public service delivery in e-government context and the approach of New Public Management (NPM) , and of course, the issues of equality, such as digital divide, and digital democracy will also be discussed under the context. Finally, the case of public service delivery of digital equality in Taiwan will be analyzed.

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

Information and communication technologies are undoubtedly powerful, but they are not so autonomously (Scarborough and Corbett 1992). On the contrary, the deployment of computers, telecommunications and information systems is the consequence of human choices which are themselves constrained and shaped by social context. The importance of ICTs derives from the potential for supporting new informational capabilities, as well as for introducing changes in the way that information is communicated. By the same token, much of the resistance to ICT-induced innovation lies in the political and cultural significance of information and communications processes.

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 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 the Ancient Greek city state, or by fostering local communitarian political structures.

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public service delivery in e-government context and the approach of New Public Management (NPM) , and of course, the issues of equity (such as digital divide) and democracy (such as digital democracy) will also be discussed under the context. Finally, the case of public service delivery of digital equality in Taiwan will be analyzed.

New Public Management Movement and Information and Communication Technologies (ICTs)

The proponents of New Public Management advocated that political system(s) should shift from the inward-facing mainframe computer systems of bureaucracy (in the 1960s) to the outward-facing networks framework of public sectors, and make it easier for citizens to become involved in public affairs. 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 service (Jan, Wang, and Hsu, 2004) .

Terry (1998) pointed out that the public management includes four approaches, that is quantitative/analytic management, political management, liberation management, and market-driven management:

- a. Quantitative/analytic management has its intellectual roots in policy analysis and the discipline of economics. Its emphasis is on the strategic use of sophisticated

- analytical techniques, such as forecasting and cost-benefit analysis.
- b. Political management focuses on the politics of public management, and it rejects outright the politics/administration dichotomy.
 - c. Liberation management is guided by the idea that public managers are highly skilled and committed individuals who already know how to manage. Consequently, the supposedly poor performance of public bureaucracies is not the result of managerial incompetence or malfeasance.
 - d. Market-driven management is influenced by two fundamental ideas. The first of these, competition, is guided by the neo-classical economics belief in the efficiency of markets. The second idea relates to the universal or generic character of private-sector management.

Ho (2002) pointed that the reinventing government movement, which started in the late 1980s, is an effort to reorient the focus of government operations from an inward-looking approach to an outward-looking one by emphasizing the concerns and needs of the end user. Under the model proposed by Osborne and Gaebler (1992), citizens are regarded as "customers" who become the central focus in designing government service delivery.

A scholar in the field of digital government in Taiwan, Shiang (2001), pointed out that free flow of information promotes the creation and utilization of added values, and makes the distribution of resources more even and utilization more efficient and effective. Ultimately, it raises competitiveness of the society and nation, and enhances people's welfare.

In putting forward those argument(s) about the movement of New Public Management and the development of ICTs, Ferlie, et al. (1996) postulated the view that transformational change involves multiple processes of change from different sources occurring simultaneously. In "The National Performance Review" report (Gore, 1993), it suggests that e-government will allow citizens broader and more timely access to information and service through an efficient, customer-responsive process—thereby creating a fundamental revision in the relationship between the federal government and everyone served by it.

Combining the major ideas of New Public Management and the development of ICTs, there are some transformations of public delivery system in many countries, and "One-Stop Service Centers" is an example. Just like Ho (2002) pointed out that "A one-stop service center is an umbrella organization that operates on top of existing functional departments and is

intended to maximize the convenience and satisfaction of users through service integration.

Meeting the challenges of the 21st century, Taiwan's government believes that it is vital for Taiwan to sharply enhance its overall national competitiveness, put its economy on a sound footing, accelerate industrial upgrading, foster full participation in civil life, enrich the cultural substance of democratic society, and establish a just, humane, and culturally progressive society (RDEC, 2003). To all the goals mentioned above, Taiwan's government has prepared for more than one decade. In 1993, the Former Premier of Executive Yuan, Lien Chan had carried out the program of "Administrative Reinventing." It stressed three main goals: efficiency, honesty, and customer-oriented. In 1998, the following Premier Vincent C. Siew established the Committee of Government Reform, and implemented organization reform, human resource and public service reform, and juridical reform. In 2001, in response to a suggestion made by the "Economic Development Advisory Committee" at a meeting, the Office of the President in Taiwan set up a "Government Reform Committee," which has charged with the task of improving government efficiency. Reviewing the missions, goals, and actions of these program or committees, we can find that the theoretical base of them are "new public management," which means looking for the value of competition, free choice, and efficiency in Taiwan's public sector.

The promotion of government reform in Taiwan aims to build an energetic government that is globally competitive. Facing critical international challenges and significant diplomatic difficulties, Taiwan relies heavily upon its economy and competitive commercial advantages to ensure prominence in the international arena. Over the past decade, however, statistics showed that Taiwan had lost some of its prevalence to rivals who worked harder and faster. This is the only way that Taiwan can consolidate its existing socioeconomic progress, realize the national vision of an "economically-sustainable, fair, peaceful, and contented homeland," and respond to the intense global competition of the future (RDEC, 2003). In order to make an effective government in Taiwan, developing e-government becomes a key to an open and transparent Taiwan government.

To further broaden the scope of e-government applications, RDEC (Research, Development, and Evaluation Commission) in Taiwan issued the E-government Program (2001-2004) in April 2001 and expects to enhance the depth and breadth of government online applications during the four-year period of this plan. The ultimate goal of the program is to raise national competitiveness by promoting Internet applications throughout society and industry (RDEC, 2003). To make a brief summary here, we can find that the administrative reform in Taiwan was influenced by the movement of NPM. Besides, we can also

understand that using information and communication technologies (ICTs) is one of the important approaches to realize the goals of Taiwan's administrative reform, and there will be a deliberative analysis of Taiwan's case in the following part.

ICTs, Equality, and Democracy

Features of ICTs

The digitalization of information and their communication should be the core focus of social scientific inquiry of the information age. While the physical machinery has become the common-sense focus of attention, this process has meant that we have become purblind to the distinctive properties of these technologies. What are the specific properties of information and communication technologies which have lent themselves to such a dichotomized view of the information age? What is it about these technologies that leads commentators to adopt such definite, but contradictory, convictions about their social implications? To address these questions we will refocus our discussion on the information and communications capabilities associated with ICTs (Jan, 2000).

In fact, there are two interrelated qualities of ICTs which help us to answer these questions. Each of these qualities is concerned with information. The first highlights the significance of "informatization." The second relates specifically to new capabilities for communicating information (Jan, 2000) .

The key features of information and communication technologies (ICTs) are claimed to be the potential for the development of a new variety of democracy. The reasons are as follows (Hague and Loader, 1999):

- a. Interactivity - users may communicate on a many-many reciprocal basis.
- b. Global network - communication is not fettered by nation-state boundaries.
- c. Free speech – net users may express their opinions with limited state censorship.
- d. Free association – net users may join virtual communities of common interest.
- e. Construction and dissemination of information – net users may produce and share information that is not subject to official review or sanction.
- f. Challenge to professional and official perspectives – state and professional information may be challenged.
- g. Breakdown of nation-state identity – users may begin to adopt global and local identities.

From these points of view, we can find that the importance of ICTs derives from the potential for supporting new informational capabilities, as well as for introducing changes in the way that information is

communicated. By the same token, much of the resistance to ICT-induced innovation lies in the political and cultural significance of information and communications processes.

Digital-divide and Equality

Knowing how to search, access, and use the potential opportunities created by new telecommunication technologies and available resources, the quality of life and social-economic position of people would be improved. However, due to different social backgrounds, it has created uneven opportunities on availability of information and telecommunication technology. Consequently, the unequal phenomenon in Taiwan information system society — called "Digital divide" (Reduce Digital Divide) . As the Internet has become increasingly central to life and work, it becomes even more important if certain groups are systematically excluded. Much of the discussion and debate around the digital divide had emphasized the gap between "information haves" and "information have-nots" with respect to either technology access or equitable access to benefits associated with technology (US Department of Commerce, 1999) .

From the report on 2000, these data provide concrete evidence that the Internet is being used by an increasing number of Americans. More than one-third of Americans go online from any point, either at home or outside the home. Approximately one-quarter access the Internet at home. For those households with a computer, approximately two-thirds have Internet access. Households that do not have Internet access most frequently explain that they either do not want it or that it is too expensive; for those households that have dropped off the Net, cost is the most important reason (NTIA, 2000) .

The "digital divide"-- the divide between those with access to new technologies and those without -- is now one of America's leading economic and civil rights issues. The report of 2000 revealed that the number of Americans connected to the nation's information infrastructure is soaring. Nevertheless, 2000's report found that a digital divide still exists, and, in many cases, is actually *widening* over time. In the experience of the U.S., there was 63% of the population online in 2003, and the government expects that the digital divide will be alleviated in 2008 (NTIA, 2000) . Johnson (2004) pointed out that even today, some 40 percent of citizens do not use e-mail. Over time, the figure will undoubtedly drop, but there will be a persistent minority of individuals untouched by e-mail, Internet, and electronic communication. Lawmaker must be able to communicate with them from the old-fashioned, non-technical means of letters, post cards, and face-to-face conversation.

In order to realize the digital government, there should be several values stressed, and we can call them the 3 "es" of e-government. First of all, the ICTs help

government enhance its “efficiency”, and secondly, we should make use of ICTs to improve the “effectiveness” of public administration. Finally, and it might be the most important, the government should pay much attention to the “equality” of digital government, such as accessibility, digital literacy, and so on.

Digital Democracy

Shiang (1999) thought that the “base on the development of modern information and communication technology and computer-mediated communication (CMC), electronic democracy is argued to be a help in realizing openness of the government, removing barriers of citizen participation, achieving interactive communication and Habermas’ ideal speech situation, and arriving at an authentic consensus.” Besides, “Democracy and democratic administration assisted by CMC has been a recent trend in modern governments. With the democratic ideology and development of modern ICT, digital democracy seems to be a new paradigm of – government-citizen relationship(s) of the next century” (Shiang, 1999).

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 focus will be put on three types of improvements, which 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 their government. Also we will examine the extent to which technology might bridge the gap between the government 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 (1984) 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.

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 (1991) believes that civic education must develop the public’s ability to understand and confront the value trade-offs inherent within policy.

No one can deny that the main issue of democracy is about equality. In the discussion of digital democracy, how to improve digital divide is also an important issue. The U.S. government has noticed the phenomenon about ten years ago. The National Telecommunications and Information Administration, U.S. Department of Commerce, has issued the report on “Falling through the Net” from 1995. From above, we can agree that digital democracy might be the “last mile” when we discuss digital government.

Toward Digital Equality—The case in Taiwan

A survey of the state of e-government in 196 nations published by the World Market Research Center in August 2001 ranked Taiwan second, behind only the United States. This survey primarily assessed the service content and functionality of government websites. Taiwan ranked first in the item of diversity of government website services, and was one of the few nations worldwide that had actually used electronic certificates in e-government services. In addition, Taylor Nelson Sofres conducted a survey of public use of e-government services in 27 of the most progressive nations in September 2001. Taiwan was ranked ninth in this survey, indicating that Taiwan’s e-government efforts are delivering real benefits and have attracted a degree of international recognition (RDEC, 2002).

To enhance the quality and efficiency of government services by taking the advantage of the benefit offered by the ICT, the government has established an “Electronic Government Program (2001~2004)” in April 2001 (RDEC, 2003). The vision of the E-government is (RDEC, 2002):

- 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.

From these visions, we can find that the E-government in Taiwan expected to improve government operational procedures, promote service efficiency and quality, cut-down service cost, and provide private sectors and individual citizens with many innovative and convenient services. In the program of Taiwan's governmental reform, RDEC (2003) realize that developing an e-government is a key for open and transparent government. It is an inevitable trend in government informatization to use the open, high-speed online environment to provide the public convenient information and services.

Framework of Measures



Figure 4.1 The Program of Taiwan's E-government
Resource from: RDEC, 2002

In figure 4.1, we can find the framework of Taiwan's E-Government Program. There are three themes of the program: improve service effectiveness, enhance clerical efficiency, and improve decision-making quality. Additionally, there are four levels of the program, and they include infrastructure, computerization, information sharing, and finally, the two-way on-line service. For example, in order to improve the effectiveness of public service, the on-line services will provide the model of government to customer (G2C) or government to business (G2B).

There were several studies about information infrastructure and digital democracy, and this research

also point(s) out that there were some aspects which can be improved in Taiwan's e-government. Chen, Huang, and Hsiao (2000) examine 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. Table 4.1 shows the rate of online population in Taiwan from 1996 to 2001.

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

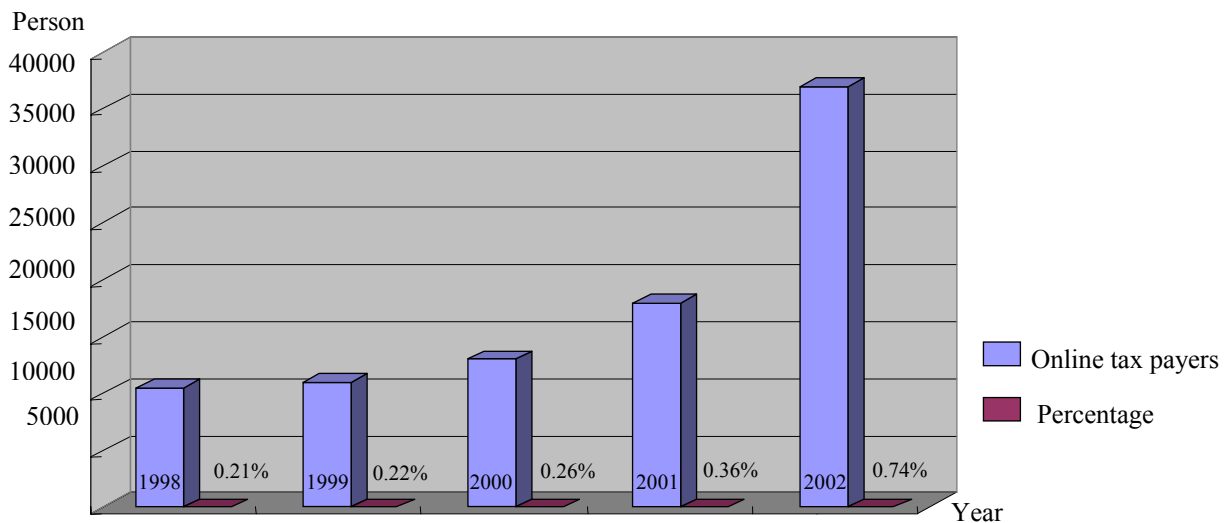
Resource form: http://www.nua.ie/surveys/how_many_online/asia.html, visited on 2004/9/7

Table 4.1 points out the rate of on-line population in Taiwan rose from 1.7% in 1996 to 51.85% in 2001. The on-line population has increased almost 30 times in those 5 years. Furthermore, we can also find that the on-line population has increased 5 million since 2000 to 2001. To respond to the on-line population,

Taiwan's government will focus more on digital government in the nearest future.

Take e-taxation, for an example. We can find that Taiwan's government uses ICTs to help public service delivery:

Figure 4.2 The On-line Tax Payers in Taiwan



Resource from: Resource from: RDEC, 2002

From figure 4.2, we can find that the population of on-line tax payers has increased gradually from 1998 to 2001, from 0.21% to 0.36 between 1998 and 2001. However, Taiwan's government implemented the E-government Program since 2001, and the population of on-line tax payers has doubled from 2001 to 2002. Although we do not have direct surveys to verify the causal relationship between Taiwan's E-government Program and on-line tax payers, we do believe that they should be related.

As for the practice of digital democracy in Taiwan, Shiang (1999) points 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 an 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 corresponded with the criteria of openness; however, many web sites do not realize the value of democracy. In other words, these sites cared most about the skills or technologies, and not the democracy.

Chen, Tseng, and Huang (2005) investigated the digital divide in Taiwanese governmental agencies, which include different levels, such as executive yuan, department of executive yuan, county government or bureau of central government, bureau of county government, and local governmental agency, and found that the level of agencies shows a significant effect on on-line civil service. There might be three factors. First, the higher level governmental agencies tend to have more resource. Second, the top-down promotion of the new public management (NPM) might enhance those upper agencies' on-line web service by product. Finally, the effect might reflect citizens' needs of information transparency and surveillance toward upper governmental agencies.

Table 4.2 shows that the status of PC uses in different counties and cities in Taiwan in the end of 2000, and this also shows the nature of digital divide in those districts. Some points can be discussed from table 4.2:

a. The comparisons of different districts.

From table 4.2, there are 7 districts in Taiwan, those are northern, middle, southern, eastern, Taipei City, Kaohsiung City, and Lienchuang District. Compare with those different districts, we can find that both the lowest rate of PCs and connections to Internet are in the eastern district. In contrast, the highest is in Taipei City. There might be two factors related to this data: the resources and the information literacy.

Besides, some people may argue that Lienchuang district is far from Taiwan main Island, and why does it have a higher rate? We can find that there are Kinmen Kaoliang Liquor companies in Lienchuang and Kinmen county, and those companies high taxes to the two counties. Therefore, the resources of this district might be enough to develop E-government.

b. The comparison of different counties.

In the northern district, the highest rate of PCs is in Hsinchu City, however, it is not the highest rate of connection to the Internet, but Taipei County is. A reasonable factor is that the urbanization of Hsinchu City is higher than Taipei County, however, the people who live in Taipei County might be influenced by its neighborhood, Taipei City, which has the highest rate of connection to the internet in Taiwan's main Island, and therefore they get a higher rate of connection to the internet than Hsinchu City.

In the middle and southern district, we can find that the highest rates of PCs and connection to the internet are in Taichung City and Tainan City, and each of them has the highest urbanization of its district.

c. The comparison of different counties among different districts.

From table 4.2, we can find that Penghu county has the lowest percentage of people connected to the internet (7.35%); while Taipei City has the second highest rate (55.79%) and Lienchuang county has the highest rate (60.05%). First, both of Penghu County and Lienchuang County are islands of Taiwan. However, the main industries of these two counties are different.

As mentioned above, there are liquor companies in Lienchuang County which will pay high taxes to the government, and the main industry of Penghu County is fishery. Comparing them, we can find that Penghu County is poor than Lienchuang. Besides comparing Lienchuang County and Taipei City, we can also find that Taipei City has much more population than Lienchuang, and therefore, the population might influence the rate between Lienchuang County and Taipei City.

In order to improve digital divide and enhance digital democracy, for instance, the Taiwan government continued on the work of E-voting which seems to be an extension of digital-democracy in public elections. Jan, Wang, and Hsu (2004) viewed 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 the participation of citizens. Furthermore, we should focus on the groups of young people and others who were seldom involved in political activities before.

Table 4.2 Status of PC Uses in Families in Taiwan and Its Surrounding Areas

District Item	Number of Family	Popularization Ratio (%)	PC number in every 100 households	Connection to Internet (%)
Total	6,681,685	46.02	49.75	33.58
Taiwan	6,588,644	46.49	50.27	33.91
Taiwan Province	5,211,413	42.82	46.53	29.81
Northern District	2,096,641	50.63	55.73	36.99
Taipei County	1,115,962	52.76	57.39	41.85
Keelung City	128,073	42.72	44.35	30.17
Ilan County	131,604	35.32	39.42	21.00
Hsinchu City	110,400	57.01	67.79	33.28
Hsinchu County	114,249	46.70	50.96	26.93
Taoyuan County	496,353	51.41	57.67	35.22
Middle District	1,504,563	41.28	44.73	26.00
Miaoli County	144,591	31.87	34.59	22.24
Taichung City	302,877	56.67	59.76	35.35
Taichung County	393,351	47.02	51.62	30.16
Changhua County	316,168	39.44	42.76	26.00
Nantou County	149,363	34.46	38.77	16.64
Yunlin County	198,213	21.31	23.12	13.29
Southern District	1,432,033	34.56	36.78	25.30
Chia-I City	79,151	39.62	42.33	24.81
Chia-I County	153,673	24.27	25.30	16.59
Tainan City	227,223	46.91	51.07	33.64
Tainan County	322,909	36.72	39.70	24.43
Kaohsiung Country	374,419	31.82	33.11	23.72
Pingdong County	247,300	31.06	32.49	27.17
Penghu County	27,358	18.57	21.13	7.35
Eastern District	178,176	30.37	31.90	15.82
Taitung County	72,483	25.44	25.84	13.79
Hualian County	105,693	33.75	36.05	17.22
Taipei City	885,492	67.48	71.19	55.79
Kaohsiung City	491,739	47.63	52.24	37.91
Lienchuang District	19,493	61.13	61.13	49.04
Lienchuang County (note)	17,985	62.28	62.28	60.05
Kinmen County (note)	1,508	47.44	47.44	38.44

Source: Survey of Families Plan in 2000 by Directorate General of Budget, Accounting, and Statistics, EY

Note: Computer popularization, amount of computers in every hundred families and the percentage of Internet connection are the estimations by the data from the investigation business department.

Resource from: Reduce Digital Divide

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, E-voting in Taiwan has issues 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 analyzed e-voting from the technology standpoint in Taiwan. Norris (2004: 6-7) also believed 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 that should be resolved in E-voting facilities when Taiwan develops E-voting. Besides the technology, Fong (2002) addressed 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.

Conclusion

As was mentioned above, information and communication technologies are undoubtedly powerful, but they are not so autonomously. On the contrary, the deployment of computers, telecommunications and information systems is the consequence of human choices which are themselves constrained and shaped by social context.

Combining the major ideas of New Public Management and the development of ICTs, there are some transformations of public delivery systems in many countries. "One-Stop Service Centers" are an example.

In this paper, we examined the development of e-government in Taiwan. The e-democracy, especially the research of e-voting was also discussed in the paper. Finally, the phenomenon of digital divide in different counties in Taiwan was explored, in order to move toward digital equality, several steps need to be taken: (1) Regard users' needs as the principle, classification and rearrangement on various topic contents; (2) Establish a complete and ordering digital divide database, in order to provide public on-line information referencing and searching; (3) Setup the information platform in the far and poor districts; and (4) Improve the information literacy to the information poor.

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