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A FIRST LOOK AT USERS' PERCEPTION OF THE SEOUL OPEN SYSTEM

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INTRODUCTION

Governments around the world are increasingly deploying E-government strategies to provide citizens and businesses with greater access to services and information through highly innovative Internet-based information and communication technology (ICT) applications. It is, for example, now commonplace for citizens to file taxes, renew professional licenses, and track legislation through web applications available on Internet gateways. These applications offer numerous possibilities to use the Internet and web-based technologies to extend government services online, allow citizens to interact more directly with government, employ citizen-centric services, and transform operational and bureaucratic procedures. Additionally, E-government applications have the potential to galvanize public trust and democracy by opening the flow of information

between citizens and government, fostering a high level of authentic citizen participation in the political process, creating more transparent ways of doing business with different arms of the government, and enabling a new level of accountability for both elected and appointed officials and civil servants (Watson and Bundy, 2001).

In this paper, we examine the OPEN system, a groundbreaking E-government application implemented in the Seoul Metropolitan Government as a tool to reduce corruption in routine transactions between civil employees and citizens. To assess whether the OPEN system achieves this goal, we evaluated the survey responses of end users, comprised of Seoul citizens and civilian employees. Citizens and civilian employees were asked their opinion about the extent to which the OPEN system has prevented or reduced corruption in civil applications. The results vary by end user group, as one would expect. We find that the majority of end users feel that corruption has declined after the OPEN system was implemented. The effectiveness of the OPEN system also depends on how much contact each individual has had with the system through training and use. The paper provides an overview of the OPEN system and its development and implementation, describes important factors driving the acceptance of the OPEN system among end users, and analyses the survey responses. The paper concludes with a discussion of the key findings.

DEVELOPING AND IMPLEMENTING THE OPEN SYSTEM

The City of Seoul, South Korea designed and implemented an E-government application, known as the OPEN system, to stabilize further the public trust among its citizens and businesses through anti-corruption reforms in its metropolitan government. Mayor Goh introduced the OPEN system in April, 1999, as a way to reduce corruption in routine transactions between civil servants and citizens. The OPEN system is an acronym that stands for the On-line Procedures Enhancement for civil

applications system and is among the first application of its kind. Instead of making phone calls or a face-to-face visit, citizens and businesses can now use a personal computer to access an Internet-based application designed to make it easy to track applications for services, permits, and information offered by each department in the Seoul Metropolitan government. As Mayor Goh illustrated how the OPEN system works in a major speech at Syracuse University in May 2001, he said that,

“[T]he best disinfectant is sunshine,” as Benjamin Franklin noted. We have developed an Internet online system that makes completely open and transparent those administrative practices most vulnerable to corruption Let’s say that a person has applied for a building permit. He or she can check from a PC screen whether the application is properly registered, who is handling the case at any given time, how the case is being reviewed, when the final approval can be expected, whether there is any complication and, if so, why. The system requires that all officials concerned input the date and time when they are handling each application. With real-time information readily available to everyone, no official can sit on a case without justifiable reason, nor can he make arbitrary decisions. Free access to all stages of administrative procedures eliminates the need for personal contact with officials and for the paying of “express fees.”

The OPEN system is a central component of Mayor Goh’s Anti-Corruption Program. In addition to making each stage of the bid and permit system transparent, the Seoul government also instituted complementary reforms to fight corruption. The integrity of all departments is evaluated through independent audits and feedback from citizens. The Audit and Inspection Bureau notifies all citizens and businesses doing business with the Seoul government to report all suspicious activity. This is enforced through an integrity pact wherein all civil servants face severe penalties for bribery. Citizens and businesses also have two other recourses if they find themselves to be the victims of corruption. Citizens can avoid the army of civil servants and meet face-to-face with the mayor when they have complaints about corruption or other issues. Citizen and

business groups also can approach members of a group of five ombudsmen who will, among other things, help ensure each bid and permit are processed and evaluated fairly. The OPEN system and these reforms are designed to ensure that there is a high level of accountability in every transaction between citizens and civil servants.

Two Seoul government departments play critical roles designing and developing the OPEN system. The Audit and Inspection Bureau leads the development as analysts from this department are intimately versed in the administrative process in each Seoul government department. The Audit and Inspection Bureau selected the first 26 civil applications for development based on three general criteria. The bureau determined which administrative processes had a history of corruption scandals before, were complicated enough to inconvenience citizens, and were predisposed to receiving solicitation for special favors. The Information System Planning Bureau focused on systems development, personnel training, and system maintenance. After Mayor Goh proposed the new system in January, 1999, it took thirteen employees nearly three months to develop the OPEN system, including 3 weeks for system design and 1 week for system testing before full implementation. As of February 2001, 8,200 civil servants from 770 departments use the OPEN system. There are 54 civil applications open to the public with an average of 3,500 accesses per day.

USER ACCEPTANCE OF THE OPEN SYSTEM

Since the OPEN system is in the early stages of user acceptance, we expect that all end users, comprised of citizens and civilian employees, will find it challenging to use the new applications. Technology embodies change. End users face learning how to use a new technology and how to respond to changes in performing a new process. And acceptance will depend on how well the application, particularly its interface, is designed and functions, and on how well the complementary administrative processes are designed, function, and are integrated with the

OPEN system application.

We also expect that acceptance of the OPEN system will vary by the end user communities. For the citizen end user, acceptance of the OPEN system depends squarely on their perception of whether they can get their work or task done and whether they believe that the application will eliminate opportunities for corruption. The citizen end user acceptance of the OPEN system may also depend on their predisposition to using information and communication technologies (ICT), appropriateness of using ICT's for the task, and access to ICT's. The civilian employee faces additional challenges. Civilian employees may worry about job security as they may perceive the OPEN system as a technology that may make it easier to uncover earlier indiscretions. Moreover, the civilian staff may simply not trust the new application to work properly. Honest employees may worry that the new applications do not adequately allow users to generate a paper trail of their decisions. The OPEN system may create uncertainty among employees who may need to acquire new skills and possibly face new roles and responsibilities. Consequently, acceptance may vary by end user community, and the barriers that both citizens and civilian end users must overcome to accept and believe that the OPEN system resolves opportunities for corruption may be significant.

SURVEY DATA

The Seoul Institute of Transparency, established at the University of Seoul in January of 2000, conducted a survey of effectiveness of the Seoul OPEN system in 2001. Citizens, civil servants, and professors were asked a set of questions about whether the OPEN system affected administrative transparency, corruption, and efficiency. The Seoul Institute of Transparency conducted telephone interviews of 500 citizens. Fifty-nine professors and 2,192 civil servants responded to questionnaires. Most of the sample are males, including 70 percent (N=350) of the citizen subsample identifying themselves as male, and 87 percent

(N=1,852) of the civil servants identifying themselves as male. The citizen subsample differs remarkably in age characteristics as civil servants are much younger than the citizens in the study: 28 percent (N=139) of the citizens and 64 percent (N=1343) of the civil servants are under 40. The civil servants are slightly better educated in terms of formal education and computer training than the citizens in the sample. About half of the citizens (N=270) did not receive college level education, but 62 percent (N=1291) of the civil servants had a B.A. or higher degree. Additionally, 65 percent (N=323) of citizens have used computers whereas 94 percent (N=2018) of civil servants are experienced computer and Internet users. As reported in Table 1, most civilian employees have used the OPEN system, as 87 percent of them report using the OPEN system regularly and 64 percent (N=1386) have received training in the use of the OPEN system. Only 10 percent of the citizens have experience using the OPEN system.

Early reports indicate that the OPEN system is successfully reducing corruption. As *Business Week* reports, both city officials and citizens reveal that they are now less likely to accept or offer a bribe. There were no civilian employees indicted for corruption during the year following

Table 1. Comparison of Citizens and Civil Servants Experience in Using the OPEN System; Effectiveness of OPEN System in Reducing Corruption

OPEN Experience	Citizens	Civil servants	Total
None	450	287	737
	90.0%	13.2%	27.5%
2-3 times so far	18	458	476
	3.6%	21.0%	17.8%
1-2 times a month	11	629	640
	2.2%	28.9%	23.9%
1-2 times a week	14	425	439
	2.8%	19.5%	16.4%
Almost every day	7	377	384
	1.4%	17.3%	14.3%
Total	500	2176	2676
	100.0%	100.0%	100.0%

the introduction of the OPEN system, which was a dramatic reduction from earlier years. Citizens are also getting the message. *Business Week* reports that in a survey of 11,250 citizens seeking permits, only 6.7 percent admit offering a bribe to a civil servant. The same survey revealed that 38 percent of citizens admit offering a bribe in 1998.

Our research team also evaluated data from the Seoul Transparency Institute survey to determine the extent to which end users—both citizens and civilian employees—perceive that the OPEN system is reducing corruption. As indicated earlier, the primary goal of the OPEN system is to reduce corruption in routine transactions between civil servants and citizens. To assess whether the OPEN system has achieved this goal, respondents were asked the extent to which the OPEN system has prevented or reduced corruption in civil applications. Response choices ranged from significantly increased corruption to significantly decreased corruption. The results are summarized in Table 2, which summarizes responses for three categories of respondents—citizens, civil servants, and university professors. The number of responses for professors is quite small and is not likely to be representative, so these results should be viewed with

Table 2. Effects of the OPEN System on Administrative Corruption

	Citizens	Civil Servants	Professors	Total
Significantly increased	1	36	1	38
	0.20%	1.80%	1.80%	1.50%
Increased somewhat	18	57	2	77
	3.60%	2.90%	3.60%	3.10%
Stayed more or less the same	136	977	12	1125
	27.20%	50.10%	21.80%	44.90%
Decreased somewhat	287	492	35	814
	57.40%	25.20%	63.60%	32.50%
Significantly decreased	53	388	5	446
	10.60%	19.90%	9.10%	17.80%
No response/Do not know	5			5
	1.00%			0.20%
Total	500	1950	55	2505
	100.00%	100%	100.00%	100.00%

corruption or whether the system might produce other affects. Table 5 summarizes the results related to this question. In the survey, citizens, civil servants, and professors were asked which of the following is the greatest benefit of the OPEN system: improved efficiency, reduced corruption, extended social trust, achieving an information society, no difference, or increased inconvenience.

Among civil servants, the last of this list, increased inconvenience, was the most frequent response. Thus, although civil servants identified benefits from the OPEN system, they are also concerned about increased workload and red tape. Among professors, reduced corruption was seen as the most common benefit of the OPEN system. This contrasts with the perception of citizens where improved efficiency was perceived to be the most frequent benefit of the OPEN system. The civil servants' perception that the OPEN system increases inconvenience is probably easier to explain than the results for citizens or professors. In light of the simple technical model for the OPEN system, which does require more adminis-

Table 5. Benefits of the OPEN System by Respondent Group

	Citizens	Civil Servants	Professors	Total
Improved efficiency	182	179	24	385
	36.40%	8.30%	41.40%	14.20%
Reduced corruption	126	378	22	526
	25.20%	17.50%	37.90%	19.40%
Extended social trust	125	479	8	612
	25.00%	22.20%	13.80%	22.50%
Achieving information society	30	231	2	263
	6.00%	10.70%	3.40%	9.70%
No difference	24	296	1	321
	4.80%	13.70%	1.70%	11.80%
Increased inconvenience	12	596	1	609
	2.40%	27.60%	1.70%	22.40%
No response/Do not know	1			1
	0.2%			0
Total	500	2159	58	2717
	100.00%	100.00%	100.00%	100.00%

trative processing, it is not surprising that civil servants see increased inconvenience as the primary outcome of the OPEN system. The perceptions of the citizens, and to some extent the professors, appear to be assessments of two parties at the periphery of this process. Thus, they perceive that the OPEN system is an efficiency-producing process, but the evidence suggests something quite different.

Like the summary question for corruption, the effects of the OPEN system may be influenced by individuals' frequency of contact with the system. Tables 6 and 7 which cross-classify civil servants' perceptions of the benefits of the OPEN system with both their frequency of contact with the system and training in the system, provide some insights into this issue. Increased inconvenience still appears to be a concern for even experienced civil servants. A noteworthy result of the cross-tabulation in Table 5 is that relatively large numbers of civil servants see extended social trust as the chief benefit of the OPEN system. In some respects, extended social trust might be perceived as a positive way of

Table 6. Civil Servants' Perceptions of the Benefits of the OPEN System Based on Amount of Use

	No	2-3 times so far	1-2 times a month	1-2 times a week	Almost every day	Total
Improved efficiency	46	31	35	25	39	176
	16.8%	6.8%	5.6%	5.9%	10.5%	8.2%
Reduced corruption	61	84	79	80	71	375
	22.3%	18.5%	12.7%	18.9%	19.1%	17.5%
Extended social trust	61	89	158	91	78	477
	22.3%	19.6%	25.3%	21.5%	21.0%	22.2%
Achieving information society	22	44	87	39	39	231
	8.0%	9.7%	13.9%	9.2%	10.5%	10.8%
No difference	34	84	88	57	31	294
	12.4%	18.5%	14.1%	13.5%	8.4%	13.7%
Increased inconvenience	50	121	177	131	113	592
	18.2%	26.7%	28.4%	31.0%	30.5%	27.6%
Total	274	453	624	423	371	2145
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 7. Civil Servants' Perceptions of the Benefits of the OPEN System Based on Training

	Once	2-3 times	4-5 times	6 and more	Total
Improved efficiency	23 4.9%	43 7.8%	11 5.9%	10 7.1%	87 6.4%
Reduced corruption	73 15.5%	93 16.8%	28 15.1%	32 22.9%	226 16.8%
Extended social trust	100 21.3%	127 23.0%	42 22.6%	49 35.0%	318 23.6%
Achieving information society	53 11.3%	56 10.1%	19 10.2%	21 15.0%	149 11.0%
No difference	81 17.2%	65 11.8%	34 18.3%	6 4.3%	186 13.8%
Increased inconvenience	140 29.8%	169 30.6%	52 28.0%	22 15.7%	383 28.4%
Total	470 100.0%	553 100.0%	186 100.0%	140 100.0%	1349 100.0%

looking at the efforts to reduce corruption, thus rather than monitoring and punishing civil servants, the idea of extended social trust might be viewed as a positive complement that works to reduce corruption.

Civil servants' perceptions of the benefits of the OPEN systems may also vary according to the training they receive. The results in Table 7, however, are inconclusive. The distribution of responses is quite similar for civil servants who have participated in training once versus those who have participated two to three times and those who have participated more.

Another issue that merits consideration is whether the OPEN system is successful in all application areas or whether some are likely to achieve a higher standard of success. To access the OPEN system's efficacy across application areas, we asked respondents to identify the three most effective application areas and the three least effective application areas. Table 8 summarizes the results.

The most effective areas were not altogether surprising. Housing and architecture, construction and civil engineering, and city planning are

Table 8. Civil Application Areas Perceived Most and Least Effective by Civil Servants

	Most Effective	Least Effective
Housing/Architecture	1464 29.80%	221 4.80%
Transportation	480 9.80%	408 8.80%
Culture/Sightseeing	119 2.40%	732 15.80%
City Planning	488 9.90%	300 6.50%
General Administration	246 5.00%	780 16.80%
Construction/Civil Engineering	833 16.90%	238 5.10%
Environment	398 8.10%	450 9.7%
Industry/Economy	197 4.00%	511 11%
Health and Sanitation	373 7.6%	577 12.4%
Fire Protection	318 6.50%	430 9.3%
Total	4916 100.00%	4647 100.00%

home to the traditional civil applications such as building permits, occupancy permits, and construction permits. Thus, it is quite reasonable that housing and architecture, construction and civil engineering, and city planning are among the three areas for which the civil applications are rated most effective. These areas were not selected frequently for the least effective applications. Instead, general administration, culture and sightseeing, and the industry and the economy, were perceived as the least effective applications.

CONCLUSIONS

The OPEN system has the potential to reduce corruption by creating more transparent ways of doing business with the Seoul Metropolitan Government. The OPEN system includes various functions that allow information to flow between citizens and government in a way that holds both parties more accountable.

The OPEN system faces critical challenges to broader user acceptance. First, as with all ICT's, the OPEN system is embedded in a broader institutional context that influences how the system is accepted. The end users are likely to be very skeptical about the notion of "open government" since Korean citizens have experienced very few transparent administrative processes in their historic dealings with government. So it is likely that many citizens, even the most computer savvy ones, may not be comfortable transacting business with government using ICT's. Assuming that such alternative modes of getting a permit exist as appearing in person or using the phone, for example, there will remain opportunities for corruption outside the virtual space of the OPEN system. Second, at the operation level, the OPEN system has yet to integrate its web interface with the back-end administrative processes. This leaves citizens and civilian employees skeptical of the benefits of the OPEN system. Third, the OPEN system may exacerbate the digital divide. Citizens and businesses that are comfortable using the OPEN system may derive such benefits as faster processing, better service, or corruption-free transactions that are not easily available to others who have trepidation for or lack of access to ICT's.

Although the OPEN system is a relatively new innovation and faces challenges, end users show important signs of buy-in. The data show that both citizens and civilians who are familiar with the OPEN system are more likely to agree that the OPEN system will help reduce corruption. Training opportunities are critical for the success of the OPEN system. Training not only provides practical knowledge about the OPEN system—it also creates opportunities for users to share tacit knowledge derived from their experiences. The OPEN system has strong

executive level support, which is critical for leveraging resources necessary for sustaining the application.

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