

CORRUPTION IN DEVELOPING COUNTRIES AND ICT: THE URGENT NEED FOR WORK SYSTEMS TO PRECEDE E-GOVERNMENT

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Abstract: As governments in developing countries (DC) come under increasing pressure to deal with corruption, Information and Communications Technology (ICT) has become an important strategic resource. Although the use of ICT in DCs is not new, its use to deal with corruption is a challenge. This paper reports on an interpretive investigation into understanding the underlying principles common to the successful use of ICT to deal with corruption in DCs. The underlying principles are examined against South Africa's official ICT agency as a case study. The findings reveal that whilst there are many DC e-government successful efforts to deal with corruption, a most important challenge in DCs is the absence and lack of clarity of government work processes. Key to dealing with corruption is the existence of clear and complete work processes. Although many articles have appeared on the use of ICT to fight corruption, few have extended the discussion to the common underlying principles that lead to the successful e-government systems that deal with corruption. Methods that have the potential to provide governments in developing countries with a strategy, method and techniques for analyzing some of their work processes are required prior to implementing e-government to deal with corruption.

Keywords: Corruption, E-government, Developing Countries, Work Systems Method

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1. INTRODUCTION

Corruption exists in all societies. It is predominantly a public-sector phenomenon in which entrusted public power is abused for private gain largely taking the form of bribery, nepotism, fraud and embezzlement. There are two types of corruption in the public sector, political corruption and bureaucratic corruption. Political corruption occurs when political coalitions and elites influence the formulation of national laws, policies and regulations to serve their interest. For example vote-rigging, registration of unqualified, dead or non-existent voters, buying and selling of votes, and the alteration or outright falsification of election results. Bureaucratic corruption is when government bureaucrats alter the enforcement of laws, policies and regulations to their advantage (Mbaku, 1996). Some of the easier ways to identify that bureaucratic corruption has taken place are false or incomplete entries in accounts and/records, faked reconciliations, inferior items substituting genuine items and missing crucial documents (Jones, 2004, p. 4). This paper investigates the role of ICT in the public sector in dealing with bureaucratic corruption, particularly in developing countries.

There is a strong negative correlation between corruption and the development status of a country. The lower the development status, the higher the prevalence of corruption (Haque & Kneller, 2005). The motivation for corruption includes personal financial gain, cultural values which are tolerant of corruption, peer pressure, disgruntlement and malice (Jones, 2004). For corruption to occur, there must be intent on the side of the perpetrator and an opportunity (Jones, 2004). The perpetrators of corruption are typically entrepreneurs, individuals and groups seeking a favorable decision in exchange for bribes (Mbaku, 1996). Government officials can similarly be perpetrators with intent in seeking for a bribe in exchange for a favorable decision. The opportunity for corruption is created in an environment where government officials enjoy a monopoly of power and when their discretionary power is not properly checked (Klitgaard, 1987). Typically, there is a monopoly of power when one official controls a public good or service and is hence able to create artificial shortages. Having more than one official is designed to limit the monopoly of power. Discretionary power refers to the ability of an official to legally exercise power without the approval of other officials. Rules put into place to curb discretionary power are problematic when they are rigid and unrealistic, as such creating an environment for non-compliance and misinterpretation (Tanzi, 1998).

It is difficult to manage the intent of those who perpetrate corruption. The intent of corruption is rooted in the cultural, political, and economic circumstances of those involved in it (Zhang & Zhang, 2009). The emphasis is therefore placed on limiting the environments that nourish the opportunities for corruption (Jones, 2004). Transparency has been shown to be the best approach to limiting the environment for corruption (John Carlo Bertot, Paul T. Jaeger, & Justin M. Grimes, 2010).

A classical theory used to emphasize transparency as an antidote is the principal-agent theory (Zhang & Zhang, 2009). The principal-agent theory emerged from two independent yet similar theories of agency by Stephen Ross and Barry Mitnick (Mitnick, 2006). Ross presented agency from an economic perspective to explain agency as a problem of incentives whereby incentives are used to induce agents do what the principle intends (Ross, 1973). Mitnick on the other hand considered agency from an institutional perspective as how institutions evolve around agency to

deal with the imperfections that arise between what an agent does and what the principal intends (Mitnick, 1973). The principal-agent theory has since been used in law, economics and the public-sector to understand the relationship between agents and principals especially in contract (Dobson & Stokes, 2008; Elgström & Smith, 2006; Lane, 2005).

The essential premise of the principal-agent theory from a government perspective is that citizens are principals and governments are agents who work for the principals. Since principals are paying, they have a right to know what the government work processes are as well as the work outputs. The government agent however always knows more than the principal. The greater the disparity of knowledge between the principal and agent, the greater the risk of corruption (Smith & Bertozzi, 1998). In terms of the principal-agent theory, it is on the basis of giving citizens the ability to reduce the information gap with government that ICT can play a central role in the fight against corruption. ICT also provides the ability to reduce contact between government officials and citizens, which contact further creates an opportunity for corruption (Tanzi, 1998).

The use of ICT in government, broadly defined as e-government, promises to make government smarter and smaller, improve service delivery, and enable citizens to interactively relate with government. Almost all countries in the world have embraced e-government with many of them intentionally using ICT as a superior tool for opening up the government processes to the public and reduce corruption (John C. Bertot, Paul T. Jaeger, & Justin M. Grimes, 2010). The examples of e-government as a success story in developed countries has DCs enthusiastically embracing ICT, or having it pressed upon them, citing the perceived benefits that ICT will bring. High on the list of these example benefits have been the promise of better governance, corruption prevention through transparency, cost reduction and improved efficiency of service delivery (UNCTAD, 2006). E-government literature suggests that as countries transition into e-government, possibilities for improvement through government process redesigns are created (Davison, Wagner, & Ma, 2005). DC governments in adopting the utopian view have been drawn into the e-government frenzy and invested enormous amounts of the little financial resources and human capital in striving for the online utopia. The results have unfortunately been dismal.

1.1. Problem Statement and research question

There are exemplary case-studies from DCs such as India, South Africa and Chile where ICT has been successfully used as an e-government tool to limit bureaucratic corruption. Despite these case studies, many DCs still struggle to harness ICT to limit bureaucratic corruption. This paper sought to analyze the DC success stories, find commonalities and infer a set of guidelines on how DCs might effectively deal with bureaucratic corruption. The research question was; what are the common underlying principles between the successful use of e-government in DCs to fight bureaucratic corruption, and can a set of guidelines be drawn that can guide other DCs in the fight against corruption?

The remainder of the paper is structured as follows. Section 2 briefly reviews the literature on corruption and e-government. Section 3 takes a look at three DC success stories in their use of e-government to deal with corruption, finally coming up with a set of common elements between the case studies. Section 4 presents the interpretive research approach used to investigate the created set of guidelines against the agency tasked with consolidating and coordinating South Africa's ICT resources in government, the State IT Agency (SITA). Section 5 presents an analysis and discussion of the findings. Section 6 presents the conclusion of the investigation, later giving suggestions for further research and some of the limitations.

2. LITERATURE REVIEW

2.1. Corruption in Developing Countries

Corruption has some merit; it improves the economic efficiency for its recipients and their immediate and extended families (Bardhan, 1997). As such corruption is reported to be a way of life in DCs such as the Democratic Republic of Congo and Nigeria (Gould & Mukendi, 1989). In these countries, working in government places great expectation on the government official to share 'the meat' of public office with the nuclear and extended families. The unwritten entitlement places undue pressure on family members working in government to resort to corruption. Nonetheless, corruption is regarded within DCs as destructive. Citizens within DCs recognize that corruption increases government inefficiency, escalates the cost of basic transactions, redirects talent, and increases poverty as a result of the distorted distribution of income and wealth (Jain, 2001).

Colonialism, as the legal occupation and political/social control of a territory by people from another territory (Kohn, 2006), is for the most part blamed for damaging DC institutional structures, attempting to impose a foreign culture and then failing to flexibly re-create the institutions at allowing DC independence (Acemoglu, 2008, p. 67; Rodrick & Subramanian, 2008, p. 79).

The recent independence of most DCs and the resultant transition from a culture influenced by collectiveness and the attending sense of entitlement, to another culture driven by individualism and the associated belief in individual merit (Hofstede, 1980) is primarily cited as the main source of corruption in DCs (Mbaku, 1996). At independence, governments were suddenly thrust upon the responsibility for managing their countries according to a new set of laws and regulations. The regulations often turn out to be rigid, cumbersome and hard to interpret making their translation into practice very subjective. The subjectivity in the translation of rules and regulations results in considerable discretionary power (Gould & Mukendi, 1989).

As another result of colonialism, DCs acquired a complex of dependency effects (Cypher & Dietz, 2009, p. 102) whose susceptibility was further worsened by debt and foreign aid. While foreign aid and debt appears timely in quickly filling a badly needed gap, the money usually ends up doing more harm than good – for example, it ends up in the hands of corrupt government officials or is used for unproductive efforts such as purchasing weapons (W Easterly, 2006). Foreign aid and debt arguably only serves to stifle self-reliance and increase corruption (Perkins, Radelet, & Lindauer, 2006). The suggestion therefore to eliminate the problem of an unrealistic debt burden for DCs through debt relief (Sachs, 2008) is countered by others who say it sends the wrong signal; that corruption is acceptable (William Easterly, 2008).

There are three traditional methods to creating transparency in the public sector; establish professionalism using administrative reform, support law enforcement in society, and enhance bureaucratic quality using social capital (Andersen, 2009; Shim & Eom, 2009). In establishing professionalism through administrative reform, public administrators are employed based on their professional knowledge. Professionalism protects against unjust political influence by ensuring high standards of competence. However professionalism according to the principle-agent theory means that government officials have information and knowledge that is not easily understood by the public which if unchecked is a source of corruption. Law enforcement focuses on making corruption risky by making the legal consequences very high. Regardless, with poor law enforcement systems in DCs government officials are inclined not to consider the consequences of corruption. In countries where law enforcement is well-established, intensive external surveillance is adopted to increase the risk of corruption detection. Law enforcement can nonetheless be limiting when its activities delay service and even worsen red tape, for example investigative

auditing, internal surveillance and performance auditing (Anechiarico & Jacobs, 1994). Enhancing bureaucratic quality involves standardizing work as much as possible to reduce human intervention and to create a society where moral norms are elevated. Nevertheless, governments in DCs are plagued by cronyism and nepotism which create elite groups that determine how policies are implemented.

2.2. The role of ICT in fighting corruption: E-government

The role of ICT in dealing with corruption is perceived mainly in increasing transparency through reducing unnecessary human intervention in government work processes (Shim & Eom, 2009), monitoring the behaviors of officials at a reduced cost (Shim & Eom, 2009), in making government decisions, work processes and rules transparent and traceable to the public (John Carlo Bertot, et al., 2010; Shim & Eom, 2009) and by increasing public participation amongst the public and in their interaction with the government at a lower cost (OECD, 2001).

E-government literature suggests that the transition from government to e-government exposes governments to opportunities to improve their practices through process redesigns (Davison, et al., 2005). Many governments, in adopting the utopian view of what ICT can offer through e-government, have overlooked the fact that the strategies such as business process re-design used in the private sector cannot be directly applied to government. They quickly fall into the trap that many governments fall into, treating citizens as business clients. The business client concept borrowed from the private sector is a misnomer that suggests that citizens have a choice. The reality is that government is a monopoly and citizens do not have a choice when dealing with it (Jones, 2004). Citizens have rights from government and duties to government; business clients have a choice (Belanger & Hiller, 2006). Governments have a legal and moral responsibility to serve all the citizens and the different constituents within the country (Davison, et al., 2005).

2.3. Measuring E-government

Government has three constituents that ICT is targeted at improving as part of e-government; government itself, the business sector and citizens (Lee, 2010). All three constituents place high demands to employ ICT to increase their participation with government so as to make more effective and efficient the way in which they interact with government. The most commonly agreed upon means of measuring e-government is through the use of maturity models. Maturity models are conceptual reference models that are used as benchmarks to measure the maturity of an organisation and to provide for an evolution to higher levels of maturity (Becker, Niehaves, Poeppelbuss, & Simons, 2010). There are a number of e-government maturity models many of which are not congruent with each other (Nour, AbdelRahman, & Fadlalla, 2008). Lee (2010, p. 5) compared and contrasted the 12 most distinctive e-government maturity models created over the period 2000-2010 into a common frame of reference with five metaphors and two themes (Table 1 and Figure 1).

Table 1: Metaphors, their definitions, related stages, and themes (Lee, 2010, p. 5)

Metaphors	Descriptions	Stages/concepts	
		Citizen and service	Operation and technology
Presenting	Present information in the information space	Information	
Assimilating	Assimilates (or replicates) processes and services in the information space with the ones in the real world	Interaction	Integration
Reforming	Reform the processes and services in the real world to match the information space requirements, fitting for efficiency	Transaction	Streamlining

Morphing	Change the shape and scope of processes and services in the information space as well as the ones in the real world, fitting for effectiveness	Participation	Transformation
e-Governance	Processes and service in both worlds are synchronously managed, reflecting citizen involved changes with reconfigurable processes and services	Involvement	Process management

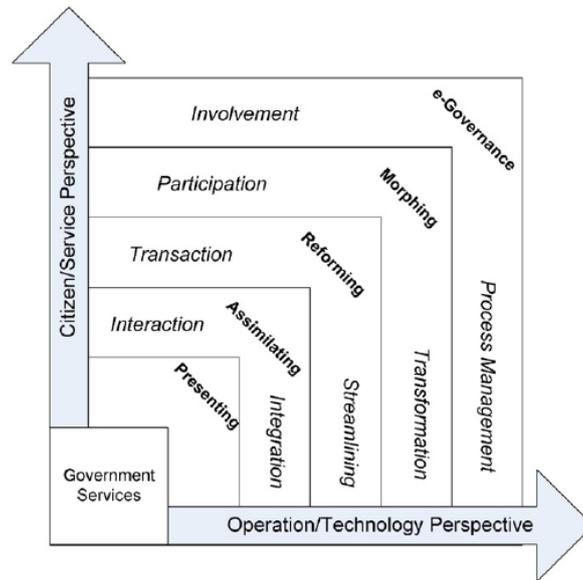


Figure 1: A common frame of reference for e-government stage models (Lee, 2010, p. 10)

The metaphors are described in Table 5.1. The citizen and service theme relates to the services of government towards its constituencies (information, transaction, interaction, participation and involvement), and the operations/technology theme relates to the technology and/or operational characteristics of government (integration, streamlining, transformation and process management). Whilst certain technology/operations stages can be skipped over without much consequence, there are likely negative repercussions from skipping over some progressive stages in terms of the services. Governments do not necessarily mature progressively from one stage to the next stage.

2.4. E-government Maturity in DC

The greatest success of ICT in the fight against corruption has been in the area of taxes and government contracts where the focus is predominantly on the controlling the behaviour of officials and not on the citizens who offer the bribes (Brown & Cloke, 2004; Mukabeta Maumbe, Owei, & Alexander, 2008; Sibanda Sr, 2009). The greater majority of e-government initiatives in DCs are nonetheless at the bottom-end and struggle to keep their sites updated (Mphidi, 2009). In DCs there is high level of (ICT) illiteracy and the success of e-government initiatives will often also face the ethical dilemma of progressing at the expense of more important development priorities such as illiteracy, poverty and unemployment (Mukabeta Maumbe, et al., 2008). The next section reflects on four cases of e-government anti-corruption initiatives in DCs to glean some key corresponding issues that led to their successes.

3. E-GOVERNMENT ANTI-CORRUPTION INITIATIVES IN DCs

We focus on four well-documented DC e-government systems in the three continents with the highest number of DCs; Africa, Asia and South America. The e-government systems all enabled a reduction in corruption:

- BHOOMI in India (Asia)
- BKMS in Kenya (Africa)
- GCNet in Ghana (Africa)
- COMPRA in Chile (South America)

3.1. The BHOOMI project of India

The BHOOMI project is an on-line delivery of land records in one of India's twenty-six (26) states called Karnataka. BHOOMI was built by the Revenue Department in Karnataka, with technical assistance from the National Informatics Centre (NIC) in Bangalore. Through BHOOMI, twenty (20) million records of land ownership of 6.7 million farmers in Karnataka were computerized. BHOOMI reduced the discretion of civil servants by making provision for recording a land registration online. Citizens are now able to monitor the progress of a transaction and raise complaints if necessary. The success of BHOOMI is attributed to two things (Zhang & Zhang, 2009);

- Strong and intentional political leadership by the departmental head in charge
- Active citizen participation

3.2. Ghana's Community Network – GCNet

As part of an effort to provide better customs services to its land-locked neighbors, Ghana decided to change the bureaucratic procedures of imports and exports which previously took up to four weeks to process. The excessively rigid procedures to register at customs were a source of corruption. The creation of the Ghana Community Network (GCNet) enabled largely all custom procedures for imports and exports to be performed electronically. The literature notes that the three things that led to its success were (Schuppan, 2009):

- There was personal and active political support by the Minister of Trade and Industry
- GCNet was based on a similar system already working in Mauritius
- Active financial collaboration between key government agencies and the business community

3.3. The Business Keeper Monitoring System of Kenya

In the fight against corruption, Kenya created an independent agency, the Kenya Anti-Corruption Commission (KACC). KACC however lacked the anonymity feature as reporting of corruption incidences could only be done by mail, phone and fax. To enable anonymity, a new system was created which allowed whistle-blowers to interact with KACC and other corruption investigators anonymously. The literature notes that the three things that enabled its success were (Schuppan, 2009):

- Donor funding by the German Development Cooperation (GTZ)
- Bypassed government political authorities
- Active citizen participation in reporting

3.4. COMPRA in CHILE

The COMPRA e-procurement system is internet-based. By a presidential act, it is a replacement of a previous manual system (DAE), and it is mandatory that all public organizations use it in all their procurements. Companies that choose to do business with the public sector in Chile under Chile's e-procurement system only need to register once in areas of their business interests. Whenever an opportunity comes for a government agency to buy goods or services, the agency will have to do a request in the electronic system, specifying in detail the kind of goods or services and all the documentations and information associated with the request. The system then automatically sends an email to all the private companies registered in that business area on the procurement system with optimum response time, and an equal opportunity for all the registered private companies. At the end of the stated response time, a bidding process takes place in the system at the end of which results are provided online, including standard details on the participants and their respective proposals, the financial and technical scores, and the winning (preferred) bidder. The key factors that led to the success of COMPRA are (Orrego, Osorio, & Mardones, 2001):

- Very strong political leadership in the fight against corruption by the President
- Regulatory compliance in forcing procurement through COMPRA

Taking from the above four cases from DCs, the following three common underlying factors emerged.

3.4.1. Strong political leadership

The highest common denominator for success in fighting corruption is clearly strong political leadership. The use of digital means to fight corruption requires a special political effort where a prominent political figure is actively involved in promoting the digital means. Despite bypassing political authority the legal mandate given by the president is enough to enable external agencies to assist where the efforts to add value to the fight against corruption are falling short.

3.4.2. Active community participation

Active citizen and business participation is necessary. The participation may be forced, as seen in Chile and India, or could be voluntary. In either case, it is necessary to create a critical mass that uses the system. This means there must be active efforts to aggressively market digital anti-corruption efforts if they are not forced. Citizens should be able to monitor the progress of what has been reported and is under investigation.

3.4.3. Funding for digital anti-corruption efforts

A critical element of implementing policy is putting a budget in place to enable the policy to be implemented (Barrett & Fudge, 1981). However well-meaning the political intention to fight corruption through creating laws and policies, if money is not attached it is a useless effort. In DCs, the perpetual lack of money, the dependence on donor funding means that certain projects which are not directly related to political gains will not be prioritized. The fight against corruption will therefore remain rhetoric. The example of GTZ funding shows the necessity of donor funding to support anti-corruption efforts that do not have a government budget attached to them. The participation of the public sector in making funds available can also be an important source of funding. Funds from the public may however raise the question of the objectivity necessary to create a system that will not serve the creators of it or undue influence by funding agencies to do things in ways which are not conducive to the context.

4. RESEARCH APPROACH

The principal-agent theory is flexible for use using different research paradigms but has predominantly been used from a positivist perspective using a-priori measures derived from contracts in seeking to balance the asymmetric relationship between principals and agents (Lane, 2005, p. 39). The contextual nature of this study is slanted towards the interpretive paradigm to empirically assess the three guidelines that emerged about the use of e-government in the fight against corruption in DCs. The interpretive approach falls under the qualitative approach which seeks to make sense of reality through the contextuality of human experience (Klein & Myers, 1999). The interpretive paradigm focuses on the research questions to be answered, the purposes of the study, and the strategies and information that can best answer the research questions.

The research strategy was a case study adopting South Africa's ICT agency with the mandate to consolidate and coordinate all government ICT efforts, the State IT Agency (SITA). The unit of analysis was ICT systems created with an intentional effort to deal with corruption. The data was collected using semi-structured interviews with two very senior SITA officials. Only two could be interviewed because they were the only two who made themselves available and their high level of seniority allowed them to shed light on their interactions with government agencies when contracted to build their ICT systems. Walsham (1995, p. 78) indicates the acceptableness of a low number of respondents on condition that interviews are used as the primary means of accessing data since they are an ideal means of accessing the interpretations that respondents have of events and their actions. The three over-arching questions that guided the interviews were:

- What ICT systems have SITA created and support to deal with corruption in South Africa's government?
- How do you go about in implementing such systems?
- What are your comments/recommendation concerning implementing such e-government anti-corruption systems?

The researchers are both academics independent from SITA and government.

4.1. South Africa's State IT Agency (SITA)

SITA was established in 1999 with a mandate to consolidate and coordinate the ICT resources of South Africa's government. SITA is required to leverage ICT as a strategic resource to deliver e-government services to all citizens and businesses. One of SITA's strategic imperatives is to use ICT to overhaul internal and external government processes to improve transparency in government. SITA's mandate makes it the single most important e-government resource to fight corruption in South Africa. It follows therefore that SITA is an ideal agency to assess the three elicited critical motivators for using e-government in the fight against corruption.

5. ANALYSIS AND DISCUSSION OF FINDINGS

The data collected was analyzed using hermeneutics. Hermeneutics is an approach to unearthing the meaning that humans assign to text (the parts) from within the context (the whole) in which they live. The hermeneutic circle is the fundamental principle of hermeneutics which posits the necessity to move back and forth between the parts and the whole in order to open up the researcher to new possibilities of interpretation and meaning (Gadamer, 1994). Subjectivity is an important part of the hermeneutic process and needs to be made as explicit as possible rather than avoided (Klein & Myers, 1999).

5.1. Political interest in ICT anti-corruption solutions

There is political interest in dealing with corruption in South Africa at the highest level as well as at departmental level. The most recent political interest is shown in the creation of a well-received

Special Anti-Corruption Unit within the Department of Public Service and Administration. Its primary task will be to investigate corruption in the public sector. Previous to this new unit, government acknowledged that “a lack of coordination, non-compliance and integration was hampering the effective rooting out of corruption in government departments” (SA - Good News, 2010b). Being a new unit, it is too early to assess how the anti-corruption unit will deal with corruption in practice.

The only evidence of political interest in using ICT to deal with corruption is the national anti-corruption hotline. It was recently revealed that in one year of creating the hotline, 235 officials had been found guilty of corruption (SA - Good News, 2010a). The main limitation of telephonic communication is that it is hard for other citizens to participate in what has been reported or for those who have reported to monitor the status on what has been reported. Though telephonic communication strictly falls under the general definition of ICT, it is not managed or supported by SITA.

5.2. An efficiency and effectiveness approach to ICT to deal with corruption

There is no ICT system that SITA has as yet developed to specifically allow external community participation to interact with government to deal with corruption. SITA's approach to corruption has been to develop and manage ICT systems that will make government work processes as efficient and effective as possible using good project management and governance principles. All projects are monitored using an ERP system that can track progress on every implementation. For each project, there is an account manager from SITA and another from the department. SITA has delivered on a number of its ICT implementations yet struggles for a number of others. The three main challenges it meets in achieving its mandate of coordinating and consolidating ICT across all government sectors are:

1. The work processes are in many cases not defined at the department side
2. A silo mentality across departments. Departments are very slow and almost seemingly unwilling to share information with each other
3. Funding for the implementation of the ICT system dries up midway ICT systems implementations

5.3. The work processes

The conditions for the creation of an ICT system for a department are determined by the requesting department. For each department, there is a different ICT strategy (Meerman, 2010). SITA has the technical resources to create ICT systems and can outsource the skills if they are not available in-house. The biggest stumbling block is that the sub-routines of work processes are rarely well defined within the departments which require an ICT to be developed.

“The biggest challenge we have in implementing systems for departments is the lack of work processes within the departments”

A critical element before creating any ICT system is understanding what the client desires down to the detailed sub-routines (Bentley, Whitten, & Randolph, 2007). The need for detailed information is similarly the single most critical factor to dealing with corruption in terms of the principal-agent theory (Section 1). The lack of detailed comprehensive policies and the sub-routines creates an environment of discretionary power where officials can misinterpret the policies to their advantage. The reality is that the policies of DCs are often sponsored by donors, and the urgency that accompanies donor-sponsored documents means they are usually not detailed (Duncan-Howell & Lee, 2008).

5.4. Community participation – internally and externally

The other danger of a lack of work processes down to the detailed level is that the ICT systems cannot be designed to provide clear information that enables external community participation. If citizens have less information than officials, they have little ground to challenge or monitor government decisions.

SITA has developed and supports an ICT system internal to government, a virtual discussion forum, for the Department of Public Service and Administration (DPSA). The forum only allows officials to discuss issues that relate to government amongst which could be corruption. Nonetheless, the lack of clarity of detailed work processes also affects the extent to which departments are able to collaborate and share information with each other. At the heart of collaboration is that participants share similar interests (Wood & Gray, 1991) and have the necessary information to enable them to work together (Kolfshoten, 2007).

5.5. Funding dries up

SITA has on many occasions found that funds set aside for ICT systems are often redirected to other priority departmental efforts midway development.

“It is very common for the funding to be redirected to other priority department areas away from ICT projects”

The withdrawal and redirection of funds is a typical indication of the strategic importance attached to ICT systems by departments. It is possibly understandable in the context of DCs which have to grapple with greater basic livelihood concerns such as poverty, disease, unemployment, sanitation and housing. Regardless, corruption affects even the provision of those basic needs and creates even worse conditions of deprivation. A balance between development needs and creating an environment for transparency needs to be considered.

6. CONCLUSION

In conclusion, we reflect on the primary research questions on the common underlying principles between the successful use of e-government in DCs to fight bureaucratic corruption, and whether a set of guidelines can be drawn that can enable other DCs in the fight against corruption.

The three common underlying and interrelated factors are strong political leadership for anti-corruption, active community participation and available funding for the creation of dedicated ICT systems that target corruption. The strong political leadership needs to go beyond creating policies for anti-corruption to an active interest in ICT systems that deal with corruption. It is ideal if the political leadership makes funds available for the creation of such a system but this is not to be expected in DCs as the norm. There are other critical development needs that supersede ICT systems. Hence, it is advisable that DCs additionally source donor funds to create ICT systems that target corruption. A number of models are available that can easily be transferred and made available to the community. An example is the famous WikiLeaks (www.wikileaks.org). ICT systems that enable active participation from the community have a clear advantage over those that provide one-way communications. Participation enables the community to monitor progress and have more information with which to participate in reporting and monitoring corruption.

The empirical evidence of the three guidelines when tested against South Africa portrays a different reality. Whilst there is active and strong political leadership for anti-corruption, the political interest in an anti-corruption supportive ICT system does not exist. South Africa’s official agency, the State IT Agency (SITA) mandated to consolidate and coordinate the creation of ICT systems, amongst which mandate include ICT systems that enable transparency, has a different

approach to dealing with corruption. SITA focuses on creating effective and efficient ICT systems its departments.

The effectiveness and efficiency route that SITA has adopted is underpinned by the best-practice literature which recommends that ICT systems can be designed based on models that have worked in developed countries. It is a danger for DCs to attempt to adopt the hyped best-practice approaches from developed countries because of the dire fact that developed countries have matured policies that have been established and iterated over many centuries, hence having detailed work processes down to the sub-routine level. Most DC countries, such as South Africa, rarely have such level of detail in the sub-routines of the departmental policies. It is therefore necessary that if ICT systems are to be designed to enable effectiveness and efficiency, the detailed sub-routines need to be determined before embarking on the development of the ICT systems. An approach fast gaining appeal in the Information Systems and in organizations is the Work System Method by Steven Alter. Work systems are systems in which people and/or machines perform work using information, technology and other resources to produce products and/or services for internal and external customers (Alter, 2006).

The two fold impact of detailing the sub-routines is that it enables the easy creation of ICT systems, and the sub-routine information can be made easily available for community observation – the internal government community and the external citizen community. Without clear work process, the risk of using ICT to even perpetrate greater corruption can be higher for example by using ICT to conceal transactions or records even more efficiently (Jones, 2004).

South Africa's external and internal community is keen on participating with government in dealing with corruption as is seen from the limited telephonic hotlines and the success achieved within only a year. Regardless, the creation of such ICT systems specifically targeted at anti-corruption efforts need to be funded. Because there are other higher competing development priorities, it may be necessary for DCs to find donors who will fund such ICT systems that enable community participation. An example is the crowd-sourcing participation of WikiLeaks that uses social media to encourage community participation.

There are two limitations of the paper; the low number of interviewed agents (government officials) and the lack of data from the principals (the public). This is an area for further research before the creation of a model that would aid in strategizing, organizing and analyzing the use of ICT in the fight against corruption in DCs.

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