A Practical Approach to Combating Corruption:

The Value Chain Methodology

By J. Edgardo Campos

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Since the mid-1990s, the donor community, World Bank, and Asian Development Bank have significantly increased technical assistance and support for anticorruption activities in developing countries. The expansion in assistance was a result largely of increasing empirical evidence that corruption discourages private investment, retards growth, and inhibits poverty reduction efforts. While considerable aid has been funneled into anticorruption-related programs over the last 10 years, little empirical analysis and evidence indicate how much of an impact these activities have had, particularly in the poorer countries in Asia and Africa where corruption has been much more difficult to root out.

Corruption is a multidimensional phenomenon that rears its head in many places. For this reason, it is difficult and challenging to assess how well a country is doing in addressing it. In many developing countries, corruption is pervasive. Hence, it is not unusual for the general public and the business community to perceive a lack of progress on combating corruption though there may be isolated successful efforts. In India, for instance, a number of cities appear to have succeeded in curbing corruption in the delivery of some key public services, but the country as a whole is still considered to have serious corruption problems. The same is true of the Philippines, which is considered one of the worst in East Asia on the TI corruption index but where genuine progress has been made at the subnational level and in some key areas, such as in the procurement of goods and supplies. Such microlevel efforts can be leveraged through public opinion to ratchet up efforts in other perhaps more challenging areas. But this requires a credible evidence of progress.

Because of its many manifestations and its ability to morph into different forms, corruption is difficult to address wholesale. For instance, attempts to strengthen, if not overhaul, the civil service and transform it into a reputable, merit-based institution, where corruption is the exception and not the rule, are laudable. But in many developing countries, the capacity, understanding, and appreciation for the needed reforms are still absent or in their seedling stage. In the long run, such reforms may eventually be embraced and bear fruit. But what does a country do in the meantime?

This dilemma suggests that corruption should perhaps be addressed "in the small": chop up the elephant into tractable bits that allow microlevel reforms, however small, to occur and enable progress to be evaluated and measured more readily. This would imply that the typical broad remedial measures anchored on increasing account-

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ability and transparency will need to be translated into concrete actions targeted to and tailor-made for specific areas. One promising approach in this direction is the value chain methodology applied at the sectoral or subsectoral level.[2]

The Value Chain Framework: A Synopsis

A sector is, in some ways, like a large corporation. In particular, it produces goods and services, though generally with a public good aspect. For example, the health sector is tasked with delivering among others essential drugs, vaccinations, and basic clinical care, and regulating the pharmaceutical industry. The power sector is responsible for providing electricity to businesses and private households and for regulating its generation, transmission, and distribution. Most large private corporations, especially those engaged in manufacturing, have long used value chain analysis to improve the efficiency and effectiveness of producing and marketing their products. Hence, it makes good sense to adapt this approach to analyzing and understanding corruption at the sector level. After all, corruption (or at least its manifestations, such as poor quality roads) is the equivalent of poor sales of and revenues from a product line.

The value chain basically lays out the sequence of activities, called stages or phases, that a sector would have to undertake in sequence to deliver a particular output, such as roads. The specific examples in the ensuing sections illustrate how it might be adapted to specific areas and how useful it can be in getting traction on combating corruption in concrete ways. The approach forces one to focus on the output(s) of a sector, offers a useful way for identifying the vulnerabilities to corruption along different points of the chain, and consequently provides a concrete basis for devising practical measures to reduce the incidence of corruption throughout the "production process."[3] Since it enables one to gain a better understanding of the real nature of corruption in a specific context, the approach opens up new avenues for developing actionable indicators—indicators that reflect the nature of corruption in a particular area, e.g., the delivery of textbooks, and which can be tracked over time to monitor progress of reform interventions that have been introduced.

At the heart of the value chain approach is the basic theoretical foundation laid out by Klitgaard (1988) almost 20 years ago. As Klitgaard argues, corruption is a product of incentives: does the (expected) benefit of engaging in a corrupt transaction exceed the (expected) cost of doing so? Hence, to reduce the risk and incidence of corruption, one needs to shrink the potential benefits and amplify the potential costs of a corrupt act. The following heuristic formula (again due to Klitgaard) is a useful guide for applying the theory to identify and address corruption vulnerabilities: *corruption = monopoly power + discretion – accountability* where each variable is a function of the degree of transparency, i.e., the greater the transparency, the less the potential for illegitimate manipulation of the variables. De facto monopoly over a decision gives the decision maker ample room to extract bribes from those who might be affected by the decision and for the latter to easily focus on a single target to corrupt. Wide discretion of decision makers generates similar opportunities. Establishing clear accountabilities of decision makers, including monitoring of decisions and actions, helps counter these tendencies. Moreover, increasing transparency of all aspects of the decision-making process strengthens accountability, weakens monopoly power, and restrains discretion.

The Delivery of Essential Drugs (Health Sector)

Public access to good quality and safe pharmaceuticals is an important objective of any government. And in most developing countries, access of the poorer segments of society to essential drugs is a major program in the health sector. But poor governance and corruption often plague the public delivery systems, hampering efforts to cure and/or prevent the spread of disease. Even in developed countries like the United States, incidents of questionable drugs have occasionally graced the headlines. Improving governance and corruption in the delivery systems is, thus, an important task of government.

The delivery of essential drugs lends itself easily to the value chain approach The process involves several stages, each of which can be diagnosed for potential vulnerabilities to corruption and within which corresponding remedial measures can be developed. Figure 1 lays out the typical "value chain" for the delivery of essential

[2] See Campos and Pradhan (2007) for an elaboration and application of this methodology.

[3] A corruption vulnerability refers to a point along the chain where corruption might occur. At each stage or phase of the chain, there is some likelihood that corruption might indeed occur and some "spots" will be "hotter" than others.

Figure 1: The Value Chain for the Delivery of Essential Drugs[4]

Decision Point	Processes
Manufacturing	• Adherence to Good Manufacturing Practices[5] • Quality management • Packaging and labeling Active Pharmaceutical Ingredients • Master, batch, and laboratory control records • Production and in-process controls • Certificates of analysis • Validation • Track complaints and recalls
Registration	• Full registration or abbreviated drug applications • Safety and efficacy • Labeling • Marketing • Indications • Pharmacovigilence and warnings • Batch testing • Reevaluation of older drugs
Selection	• Determine budget • Assess morbidity profile • Determine drug needs to fit morbidity profile • Cost/benefit analysis of drugs • Consistency with World Health Organization (and other evidence-based) criteria • Pricing and reimbursement decisions
Procurement	• Determine model of supply/distribution • Reconcile needs and resources • Develop criteria for tender • Issue tender • Evaluate bids • Award supplier • Determine contract terms • Monitor order • Make payment • Quality assurance
Distribution	• Import approvals • Receive and check drugs with order • Ensure appropriate transportation and delivery to health facilities • Appropriate storage • Good distribution practices and inventory control of drugs • Demand monitoring
Prescribing and Dispensing	• Consultation with health professional • Inpatient and outpatient care • Dispensing of pharmaceuticals • Adverse drug reaction monitoring • Patient compliance with prescription

[4] Reproduced from Cohen, Mrazek, and Hawkins. *Corruption and Pharmaceuticals: Strengthening Good Governance to Improve Access,* in Campos and Pradhan (2007).

[5] Manufacturing section adapted from the Food and Drug Administration's *Good Manufacturing Practice Guide for Active Pharmaceutical Ingredients*. July 2000. Available: www.fda.gov/cder/guidance/4011dft.htm (Accessed 18/08/06).

Each stage in the value chain is potentially susceptible to some form of corruption

drugs and indicates the activities and processes that comprise each stage in the chain. It begins with the manufacturing of the drugs (internationally and locally), in-country registration of drugs that can be legitimately sold/used in the country, selection of registered drugs that the public sector will procure, procurement of the drugs, distribution, and finally, prescription and dispensation.

Each stage in the chain is potentially susceptible to some form of corruption. A number of examples are presented below:

- **Manufacturing:** In some producer countries, pharmaceutical firms purposefully manufacture substandard drugs for sale internationally in places where regulation of the pharmaceutical industry is weak and/or corruptible. This occurs primarily because of the lack of monitoring and inspection of manufacturing plants to ascertain that quality standards are met (accountability and transparency). Major manufacturing firms have taken it upon themselves to organize to address this problem, partly to protect their reputations and partly to protect market share. But this does not fully resolve the problem as those firms not party to the effort are not bound by the agreements.
- **Registration:** Registration is like a funnel that channels only certain pharmaceuticals into the country. Consequently, it gives government officials responsible for their decisions an opportunity to extract bribes from pharmaceutical firms (monopoly power, transparency). Or alternatively, it encourages firms to offer bribes. In some cases, it can even lead politicians to use their influence to pressure government officials to include certain drugs in the list (or to exclude some to pressure the affected firms to pay up). One possible solution to this is for the government simply to adopt the prequalification list of the World Health Organization. This effectively delegates the decision to a reputable third party and thus avoids the monopoly problem and is more transparent.
- **Selection:** Selection is a smaller funnel that "picks" which registered drugs will be procured by the government for use by state-owned hospitals/clinics and for distribution to the poorer segments of society. It is a demanding process which, if not monitored closely, can be easily corrupted (discretion, accountability, transparency). Because the government is the largest single buyer of drugs, pharmaceutical firms have strong incentives to get their products selected and this can easily lead to bribery. There are no easy solutions to this problem, but one that has worked in a number of countries is to open the meetings of the drug selection committee to the general public and the media. In countries where there are civil society organizations or groups with knowledge of pharmaceuticals, this can be a reasonably effective way of reducing the risk and incidence of corruption.
- **Procurement:** This stage is common to all sectors and is perhaps one that is most susceptible to manipulation and thus to corruption. A synopsis of the difficulties and vulnerabilities within this stage is presented in the following section. Suffice it to say, at this point all aspects of the procurement process are highly vulnerable to corruption.
- **Distribution:** The distribution process for essential drugs is quite complex and involves a number of activities that are well-known breeding grounds for corruption, such as importation. One aspect which tends to escape public scrutiny is warehousing. In some countries, large-scale theft of drugs in government warehouses has been a perennial problem (accountability). Legitimate, safe, and quality drugs are replaced with substandard versions in exactly the same (flawlessly replicated) packaging, making detection ex post difficult. One possible solution is to use satellite tracking technology. Each legitimate package is assigned a (difficult-to-alter) computerized code which can be tracked by satellite as it leaves the manufacturing plant all the way to the ultimate delivery point, typically the district clinic or hospital. Recent advances in technology have now made the necessary equipment for a tracking system affordable.
- **Prescription and Dispensation:** This last stage would seemingly appear to be relatively immune from corruption. In fact, cases have come up quite frequently. For instance, in a number of countries, it has become standard practice for pharmaceutical firms to host groups of doctors to participate in international conferences as part of their continuing education. But there can be an implicit exchange for this: a predisposition of the doctors to recommend their drugs over their competitors' (discretion).

The major challenge in undertaking a value chain analysis is in collecting information to adequately characterize the value chain: of critical importance, for instance, are the de facto rules that govern and the key activities that characterize the decision process in each phase or stage of the chain. This is where the depth of experience and knowledge of sector specialists (in government, the donor community, specialized nongovernment organizations, and/or think tanks) becomes indispensable. Focus group discussions can be held with a few such specialists (in the country of interest) to gather information and to obtain feedback on progressively revised versions of the value chain. During this process, the corresponding vulnerabilities can be discussed within the context of the emerging value chain. A variant of this is the preparation of a detailed questionnaire organized along some initial notion of a chain. Once a satisfactory generic instrument has been developed, it can be used for discussions with in-country specialists and adapted accordingly. An example of such an instrument for the delivery of essential drugs is presented in the annex to Cohen, Mrazek, and Hawkins (2007).

Needless to say, the value chain will differ across sectors/subsectors, and the vulnerabilities will likely differ across countries for any given sector. Moreover, a given value chain may need to be revised in response to changes in the environment, e.g., a shift from centralized purchase of pharmaceuticals to a more decentralized system.[5] What is important to keep in mind is that (i) the value chain is simply an organizing framework for diagnosing corruption risks and formulating remedial measures and (ii) the sector output or service for which the chain is being developed must be well defined. For example, it does not make much sense to talk of a value chain for health care as this involves multiple outputs and services.

Finally, the development of a value chain will benefit greatly from the collaboration of sector experts and core governance specialists. The former can bring in-depth knowledge of the sector to bear on the effort. The latter, on the other hand, can provide guidance on the identification of vulnerabilities along various stages of the chain and on the assessment of the potential magnitude of the corresponding risk(s).

Public Procurement: A Common Thread

All sectors engage in procuring goods and services. In the infrastructure sector, the public works ministry typically contracts private firms to help maintain existing road network or construct new roads. The health sector purchases drugs and the education sector textbooks in large volumes. All ministries purchase common supplies and contract consultants. Public procurement thus is a critical function of government and, by necessity, a core component of most value chains.

Public procurement usually accounts for between 10% and 20% of a country's gross domestic product and thus involves a substantial amount of funds. Not surprisingly, it becomes a magnet for corruption, from petty to grand. Moreover, unlike other major components of a country's annual expenditures, public procurement typically involves a relatively low volume of high-value transactions (a few hundred procurement transactions conducted annually by each government agency, the most valuable of which involves millions of dollars). By contrast, for example, expenditures on government salaries involve a very large volume of low-value transactions, each of which is less attractive to potentially corrupt public officials.

Though highly prone to corruption, public procurement does have one advantage—the steps to complete the process (the process flow) are very much the same everywhere, whether in a poor African country to a large, developed one like the United States. Hence, the problems that plague it will tend to be generic, with country systems differing only in the degree of strain and weakness along different steps in the process. This makes it easier to identify vulnerabilities, understand what drives them, and develop corresponding remedial measures. Figure 2 illustrates the basic process flow of public procurement.

Over the past 10 years, the World Bank has built a sizable data bank comprising hundreds of corruption cases that it has investigated in its programs and projects. The investigations and associated analyses have revealed that only a few core schemes appear to have been used to corrupt procurement systems, regardless of time, country, sector, or place:

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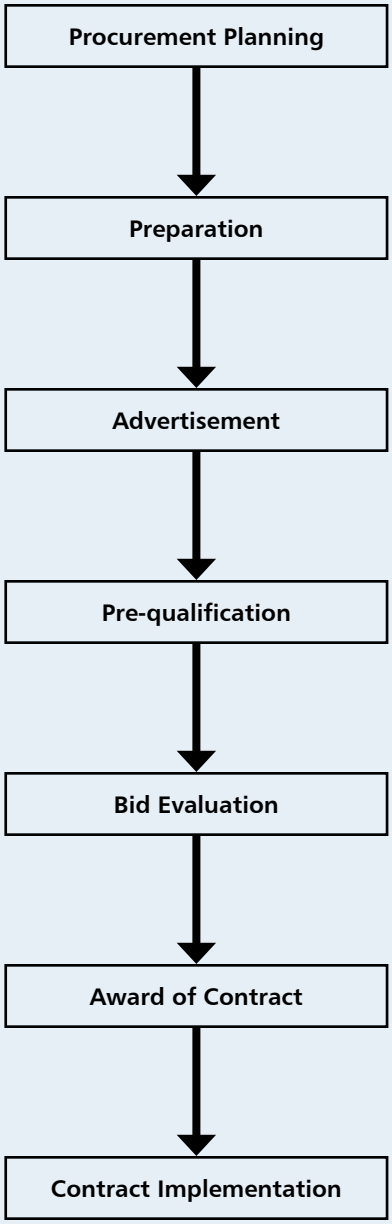
[5] Various chapters in Campos and Pradhan (2007) illustrate the range of possibilities across different sectors, e.g., oil and gas, rural water. The value chains presented in many of these chapters are not as fully developed as that for the health chapter partly because some sectors involve more complex processes. Nevertheless, the value chain provides a powerful organizing framework and the prototypes presented in these chapters can be easily improved through collaborative effort among sector and core governance specialists.

Figure 2: The Public Procurement Process



Source: Author's construction.

- **Kickback Schemes:** This typically involves a third party "broker" whose main function is to collect bribe money from the contractor and channel it surreptitiously to public officials responsible for or with influence over a contract. It takes two basic forms. The first is through subcontracting arrangements with the main contractor where one subcontractor is tasked with providing a seemingly related output or service in exchange for a substantial fee but where nothing of substance is produced and the fee channeled to corrupt officials. The second is through use of a "project advisor" who is hired directly by the government agency but whose fees are used as a cover for bribes.
- **Front Companies:** This is a well-known technique to circumvent conflict of interest provisions. Politicians and public officials set up legitimate companies with a credible management team and "puppets" as owners or shareholders to be able to bid for, or, worse, corner government contracts.
- **Bid Rigging:** Unlike the first two, this scheme could very well involve only private sector contractors. Private firms collude to limit competition and raise contract values so that even legitimately structured and conducted bids end up being "corrupted" without the knowledge of public officials.[6] But there is also a prevalent form, so-called "low balling," that involves public officials. In such instances, public officials responsible for the bidding will typically inform a specific bidder that it could bid quite low with the assurance that the awarded contract would be renegotiated to "readjust" the price to level above the agency's estimate (and the potential price that could have emerged under true competitive bidding). The bidder then forks out a portion of the premium to the officials.

These schemes are all meant to manipulate and distort the procurement process "all in the name of corruption." They manifest themselves throughout the process, creating vulnerabilities every step of the way. The World Bank has been able to identify "yellow flags" corresponding to each step in the process that strongly suggest that there may potentially be a problem with corruption at certain stages, if not all.[7] These flags

[6] See Ware, Moss, Campos, and Noone. *Corruption in Public Procurement: A Perennial Challenge*, in Campos and Pradhan (2007) for an elaboration of various forms of collusion—complementary bidding, round robin, divide the pie, and coercion.

[7] Footnote 6. Based on the internal investigations, the correlation between these flags and the actual occurrence of corruption is quite high.

can be useful in monitoring developments as the procurement process unfolds and in alerting concerned parties to possible corruption. For instance, in the advertising stage, evidence of some restriction on public dissemination of the proposed tender can potentially signify some form of bid rigging. Specifically, a tender may have been advertised in a particular province but not nationally, though there are nonprovincial firms that could have potentially qualified to bid.

In conclusion, as the once famous Austrian satirist Karl Kraus (1874–1936) posited: "Corruption is worse than prostitution. The latter might endanger the morals of an individual, the former invariably endangers the morals of the whole country."

New tools are being developed to combat this social scourge. The value chain methodology is one that shows promise.

Further Reading

Campos, J. Edgardo, and Sanjay Pradhan, eds. 2007. *The Many Faces of Corruption: Tracking Vulnerabilities at the Sector Level*. Washington, DC: The World Bank.

Klitgaard, Robert. 1988. *Controlling Corruption*. Berkeley: University of California Press.

Spector, Bertrand. 2005. *Fighting Corruption in Developing Countries: Strategies and Analysis*. Bloomfield, CY: Kumairan Press.