GAC-in-Projects How-To Notes

Value Chain Analysis

Poor governance and corruption can severely undermine the development effectiveness of a project. Over the last decade the donor community has dedicated increasingly more attention to addressing corruption at the national and sectoral levels, but there is little evidence that these efforts have been successful. By some accounts, the global cost of corruption exceeds $1 trillion annually and is rising every year.

Designing a corruption-proof project is not an easy task. Because corruption can affect a project throughout implementation, it is difficult to address wholesale. Research and practice suggest that breaking the problem into smaller, more manageable pieces allows the development of tailor-made solutions that fit a specific phase of implementation. Value Chain Analysis can help with this process by making risk identification more direct and systematic during a project's design stage. In fact, many task teams are now using Value Chain Analysis to complete the governance and fraud and corruption sections of the Operational Risk Assessment Framework (ORAF).

What is Value Chain Analysis?

Value Chain Analysis is a tool used by the private sector to categorize the primary activities firms undertake to produce and deliver (or "add value" to) a final product. By breaking the service-delivery process into its aggregate parts, value chains help businesses identify inefficiencies and weaknesses in their own supply chains.

The World Bank has adapted the value chain approach to analyze process flows in projects and sectors. Task teams use value chains to explain the process by which funds are transformed into development outcomes by laying out the sequence of activities, called stages or phases, that a sector undertakes to deliver a particular output. Through Value Chain Analysis, task teams can map the critical points in a sectoral supply chain where value is created and where critical decisions are made that affect the delivery of services in that sector. Value Chain Analysis can be used in projects to

- Provide a deeper understanding of the political and economic forces that inevitably influence a project.
- Assess risks, identify key vulnerabilities, and locate weaknesses in institutions.
- Identify project elements vulnerable to fraud, waste, and the misdirection of resources.
- Develop strategies for combating corruption and improving governance.

Putting Together a Value Chain: The Basics

Putting together a value chain isn't complicated. It involves the following steps:

1. **Think Through the Big Stages:** *Where Is Value Added?*
   To begin, think about the major processes needed to turn donor funds into a final product delivered to consumers. What steps are essential in planning, producing, and distributing a specific product or service? Making a list of the stages needed to turn donor dollars into a desired output gives you a general idea of where value is being added or transferred and provide a rough outline of the value chain.

2. **Follow the Money**
   You can further refine this model by considering major areas of expense in the project. What activities in the sector represent a significant share of the project's total costs? Major steps in the chain should (almost always) roughly correlate to the main areas of expense in your project. If critical phases of the value chain are inconsistent with spending, this may be a red flag for inefficiency, fraud, or corruption.

3. **Break the Pieces into Pieces**
   A value chain can be very broad or quite specific. Breaking a value chain into smaller constituent pieces is a good way to get a more detailed picture of what's going on in a sector. It also makes it easier to locate the root source of corruption and poor governance. Task teams often "break the pieces into pieces": after using Value Chain Analysis to identify the critical processes and decision points in a sector, they further break down the stages they uncover in their initial analysis. For example, it is quite common to create an independent value chain for the procurement process that is nested within the sector-level value chain. Depending on the project, it may also be useful to look at the delivery of a specific good or service within a sector, such as textbooks for primary education or, as the next section discusses, pharmaceutical products for health care.

What Does a Value Chain Look Like?

The dimensions of the sector you work in (as well as the time and resources you have available to dedicate to the analysis) largely determine what your value chain will look like. The following examples demonstrate how Value Chain Analysis has been applied to different sectors.

Health Sector:
Delivery of Essential Drugs

Tackling decision points vulnerable to corruption

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Manufacturing

         Registration

Prequalification                Selection          Competition &
process with                                       Transparency
document                                                              Tracking
verification      Monitoring                Procurement               systems
                  based on                                                              User
                  performance        Open                                               surveys
                  standards          meetings                Distribution
                                     and detailed
                                     criteria/rules                      Prescription &
                                     for the                             Disbursement
                                     selection
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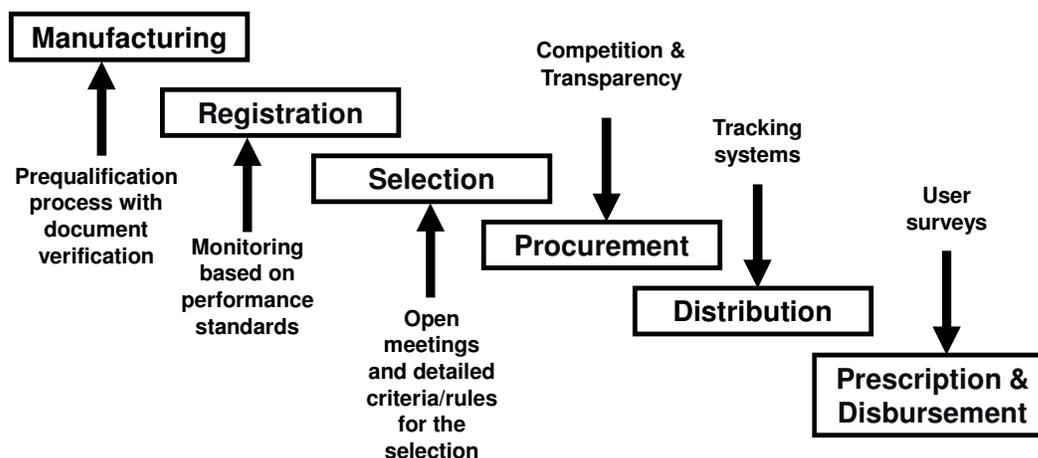
Figure 1. Value Chain Analysis in the Health Sector.

Figure 1 diagrams the process by which pharmaceutical products are manufactured and distributed to consumers. By identifying the major stages of product development and distribution (in the boxes), the diagram makes it easier to locate obstacles that may affect a project operating in the sector.

For example, during manufacture drugs are susceptible to substandard production. During registration, they may be subject to a lengthy approval process with a weak legal framework. After drugs have been registered, they are vulnerable to under- and over-inclusion during selection by governments and the private sector. During procurement, purchase orders are often "tailor-fit" to suit a specific bidder. When drugs are being distributed, they are vulnerable to theft, tampering, and poor storage. Finally, when drugs are prescribed and disbursed, consumers are vulnerable to biased prescriptions and bad drugs because of a severe asymmetry of information.

This short description of the pharmaceutical sector value chain and its attendant vulnerabilities is by no means comprehensive. However, it provides an effective starting point for a wider discussion of corruption throughout the sector. It also facilitates a more focused discussion of possible mitigation measures. As the diagram shows, it's possible to devise preemptive mitigation measures at each level of the value chain. For example, vulnerabilities during manufacturing can be addressed through random

inspections. Under- and over-inclusion of drugs during the government's selection process is made more difficult when the media effectively cover drug selection committees. And problems with prescription and disbursement can be identified and rectified through end-user surveys that monitor consumer satisfaction.

Petroleum and the Oil and Gas Sector

Stage	*Vulnerability*	*Response*
Exploration	Absence of competition, unbalanced contracts	Transparent negotiation and bid process
Development	Noncompetitive bidding, "odd" procurement awards	Competitive procurement, complaints handling
Production	Volume discrepancies, absence of metering	Volume audits, external oversight
Trading	Underreporting of volume	Full reporting of sales
Transport	Rent extraction for infrastructure access	Rules and tariffs for infrastructure access
Refining and marketing	Product adulteration, smuggling/theft	Price liberalization, competitive tendering
Accounting and taxes	Tax evasion, money laundering	Full, transparent, independent, publicized audits

Figure 2. Value Chain Analysis in the Oil and Gas Sector.

The example shown in Figure 2 was developed by a team examining governance and corruption risks in the oil and gas sector. The chart breaks down the process by which government and the private sector locate, develop, and deliver oil and gas products to consumers. As in the drug example, every stage of this process is affected by unique vulnerabilities that require specific mitigation measures. Breaking the delivery of petroleum (from exploration to marketing) into its specific phases makes it easier to identify the form corruption takes at different points in a sector and allows for a more focused, context-specific approach to combating corruption.

Exploration. This stage of the value chain involves negotiating and awarding exploration and production rights. While there are many forms of corruption at this stage of the value chain, most center on the awards process and the subsequent negotiation of contract terms. Noncompetitive bidding, awards to companies without a demonstrated ability to perform, unbalanced contract terms, and waivers of essential requirements can all affect oil and gas projects during the exploration phase. One of the most important steps that can be taken to reduce exposure to corruption during this phase is to build full

transparency into the negotiation and bidding processes. Simplifying bids, publicly announcing policies, and empowering an independent monitor can further reduce prospects for corruption.

Development and production. Other forms of corruption tend to appear during the development and production phases. Procurement is an especially rich source of illicit revenue. Kickbacks and rigged bids can quickly inflate costs or result in the acquisition of sub-par or unnecessary equipment. Grand theft is also a major obstacle (especially during production). Addressing these problems requires an array of tools, many of which need to be tailored to fit the local political and economic context. In general, establishing a transparent and competitive procurement process is an essential first step. Creating a mechanism to handle complaints in an efficient and anonymous manner can also stem the spread of corruption, but it is more effective in some cases than in others.

Trading and transport. Trading and transport present their own set of challenges. During trading, petroleum is often subject to underinvoicing, allowing it to be resold by middlemen at an inflated margin. At the transit stage, unofficial rents are charged for the use of transport infrastructure, including pipelines, storage terminals, and port jetties. These problems can be addressed through such steps as full reporting and regular audits of sales, which improve transparency and make it more difficult to underinvoice petroleum at the point of sale. Public rules and tariffs for the use of transportation infrastructure make it less likely that efforts to extract rent will succeed. Complaints-handling mechanisms can increase accountability throughout the system, creating another barrier to theft and corruption.

Refining and marketing. When petroleum is refined into usable commercial products (gasoline, jet fuel, etc.) it is vulnerable to intentional sub-par processing, which results in an adulterated final product. It is also subject to theft and smuggling. Approaches to address these problems might include competitive transparent tendering or price liberalization (with an equitable distribution of the proceeds).

Corporate accounting and finance. The problem of tax evasion and money laundering appears throughout the value chain, not only in the oil and gas sector, but also in most other sectors and enterprises. Combating it effectively requires a range of tools, from independent, publicized audits to outside monitoring and evaluation.

Putting Value Chain Analysis to Work

Value Chain Analysis is best used during the project's design phase. Developing an understanding of the value chain in a sector, subsector, or project phase will inform and enhance the risk assessment and identification process. When using Value Chain Analysis, the following aspects are important.

- **Engage your team in the process.** The task team's discussions of the value chain can and should be linked to the broader risk assessment process. By using Value Chain Analysis to identify and categorize risks, you can facilitate a wider discussion of the obstacles in the project and in the sector.
- **Engage the client.** Your client can provide you with critical knowledge of the value chain and associated vulnerabilities in the sector, improving the depth and scope of your analysis.

Engaging your counterpart in the Value Chain Analysis process will foster understanding of the risks in the project and sector and ownership of the mitigation measures to address them. Moreover, Value Chain Analysis can help you approach your client about governance issues from the perspective of identifying risks and obstacles to successful implementation, without appearing to be judgmental about corruption.

- **Link your efforts to the country-level GAC analysis.** Governance and anticorruption (GAC) work at the country level will inform your efforts to develop value chains and engage in the wider risk assessment process. By situating your work within the country level analysis, you can develop a fuller understanding of the threats that may affect your project.

- **Identify mitigation measures.** When constructing your value chain (and discussing the risks it will inevitably uncover), it is important to indentify mitigation measures that will effectively respond to the obstacles you've identified. Your value chain can assist with this process by identifying entry points where you may be able to promote reform.

As an initial step in the process, try filling in the basic value chain matrix shown in Figure 3.

ACTIVITY	RISK	IMPACT	PROBABILITY	MITIGATION ACTION

Figure 3. Basic Value Chain Matrix.

What Now?

Putting Value Chain Analysis to work in your project can be relatively simple or quite complex-- your timeline, budget, and background will all influence your use of this tool. Here are some possible approaches.

The Back-of–the-Envelope Approach

Even if your time and resources are limited, you can put together a simple value chain. The "back-of-the-envelope" approach to Value Chain Analysis relies on the task team's collective knowledge (which is often quite extensive) and the anecdotal information they are able to gather from government officials, end-use consumers, and others who work in the sector. With this information in hand, the task team only needs a conference room, a flip chart, and a few hours to sketch out the major stages of the value chain and some of the more easily-identified vulnerabilities. This approach, which typically identifies 80 percent of the risk, is often suitable for an initial assessment.

The Middle-of-the -Road Approach

If you have a little more time and resources available, you can take a more formal and comprehensive approach to gathering relevant data about the sector—interviewing government officials, holding discussions with experts, consulting with stakeholders, and involving of local consultants with experience in the sector. In this approach, a value chain is developed over several weeks as consultants and the task team analyze information as it is received. This approach may be suitable for developing a sectoral understanding that will inform the design and implementation of multiple projects in a sector, or for addressing serious concerns about fraud and corruption.

The Resource-Intensive Approach

Task teams with both time and adequate resources can take Value Chain Analysis deep into their project and sector. This approach draws information from international consultants with an extensive technical background as well as from local consultants who are familiar with the political and economic conditions in the sector. Task teams might also conduct a formal survey of end-users in the sector to assess vulnerabilities associated with service delivery. By conducting a concurrent analysis of the sector's political economy, this approach is informed by (and contributes to) work done on GAC risks at the country level.

There is no "right" approach to Value Chain Analysis. One of these approaches, or a combination of some of their features might work for you. Ultimately, only you and your task team can determine which one best fits your needs. If you're unsure about where to begin, starting with the simple, low-cost "back of the envelope approach" will give you a clearer sense of what you do and don't know.

Where Do I Go From Here?

If you'd like to learn more about Value Chain analysis or about the anticorruption measures mentioned in this note, there are a number of sources you can consult.

For more on the use of Value Chain Analysis in development projects, see:

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

For more general reading on governance and risk assessment, see:

Operations Policy and Country Services. Dealing with Governance and Corruption Risks in Project Lending: Emerging Good Practices. Washington DC: The World Bank Group, 2009.

Fritz, Verena, Kai Kaiser, and Brian Levy. Problem Driven Governance and Political Economy Analysis: Good Practice Framework. Washington DC: The World Bank Group, 2009.