**AFRICA CENTER FOR PROJECT MANAGEMENT**

**DEPARTMENT OF PROJECT PLANNING AND MANAGEMENT**

**THE PARTIAL FULFILMENT OF ASSIGNMENT IN PROJECT PLANNING AND MANAGEMENT MODULE “7” SUBMITTED TO**

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**ASSIGNMENT FOR MODULE SEVEN**

1.Explain project life cycle process with suitable diagrams

The project management life cycle is usually broken down into four phases: initiation, planning, execution, and closure, these make up the path that takes your project from the beginning to the end. Some methodologies also include a fifth phase, controlling or monitoring. For our purposes, this phase is covered under the execution and closure phases (Stephen Barker and Rob Cola, 2009).

*THE CHART SHOWING PROJECT MANAGEMENT CYCLE* Source: Lucid Chart

Initiation

Identify Scope

Developing business case

Identifying project stake holder

Planning

Estimating budget

Account used & unused budgets

Monitoring quality of work

Analyze & team results

Closure

Monitoring quality of work

Briefing team members

Create a workflow document

Gathering resources

Execution

Monitoring Budget

Initiation,in the initiation phase of the project, you identify a business need, problem, or opportunity and brainstorm ways that your team can meet this need, solve this problem, or seize this opportunity. During this step, you figure out an objective for your project, determine whether the project is feasible, and identify the major deliverables for the project.

Instead of waiting to have the project strategy decided for you, Moria Alexander advocates for a mental switch from being a project "manager" to becoming a project "leader":

"Project managers must be able to sell business leaders on the intrinsic value they offer to the business at a strategic level when they are at the table from the start of strategic planning instead of after the fact decision-making. Project managers effectiveness is drastically muted when offering a "fix-it" or "workaround" once high-level directional business decisions are made without their expertise."

Clearly, it's worth it to do what it takes to make your voice heard early, before the strategy is set in stone. Project management steps for the initiation phase, Steps for the project initiation phase may include the following:

* Undertaking a feasibility study: Identifying the primary problem your project will solve and whether your project will deliver a solution to that problem
* Identifying scope: Defining the depth and breadth of the project
* Identifying deliverables: Defining the product or service to provide
* Identifying project stakeholders: Figuring out whom the project affects and what their needs may be
* Developing a business case: Using the above criteria to compare the potential costs and benefits for the project to determine if it moves forward.

It is worth developing a statement of work or project initiation document, which may include basic project life cycle flowcharts.

Planning, once the project is approved to move forward based on your business case, statement of work, or project initiation document, move into the planning phase. In this phase, break down the larger project into smaller tasks, build your team, and prepare a schedule for the completion of assignments. During this phase, create smaller goals within the larger project, making sure each is achievable within the time frame. Smaller goals should have a high potential for success.

Project management steps for the planning phase, steps for the project planning phase may include the following:

* Creating a project plan: Identifying the project timeline, including the phases of the project, the tasks to be performed, and possible constraints.
* Creating workflow documents or process maps: Visualizing the project timeline by diagramming key milestones.
* Estimating budget and creating a financial plan: Using cost estimates to determine how much to spend on the project to get the maximum return on investment.
* Gathering resources: Building your functional team from internal and external talent pools while making sure everyone has the necessary tools (software, hardware, etc.) to complete their tasks
* Anticipating risks and potential quality roadblocks: Identifying issues that may cause your project to stall while planning to mitigate those risks and maintain the project’s quality and timeline.

The planning phase is also where you bring your team on board, usually with a project kickoff meeting. It is important to have everything outlined and explained so that team members can quickly get to work in the next phase.

Execution, you’ve received business approval, developed a plan, and built your team. Now it’s time to get to work. The execution phase turns your plan into action. The project manager’s job in this phase of the project management life cycle is to keep work on track, organize team members, manage timelines, and make sure the work is done according to the original plan. Project management steps for the execution phase, steps for the project execution phase may include the following:

* Creating tasks and organizing workflows: Assigning granular aspects of the projects to the appropriate team members, making sure team members are not overworked
* Briefing team members on tasks: Explaining tasks to team members, providing necessary guidance on how they should be completed, and organizing process related training essay.
* Communicating with team members, clients, and upper management: Providing updates to project stakeholders at all levels
* Monitoring quality of work: Ensuring that team members are meeting their time and quality goals for tasks
* Managing budget: Monitoring spending and keeping the project on track in terms of assets and resources

Closure, once your team has completed work on a project, you enter the closure phase. In the closure phase, you provide final deliverables, release project resources, and determine the success of the project. Just because the major project work is over, that doesn’t mean the project manager’s job is done, there are still important things to do, including evaluating what did and did not work with the project. Project management steps for the closure phase, steps for the project closure phase may include the following:

* Analyzing project performance: Determining whether the project's goals were met (tasks completed, on time and on budget) and the initial problem solved using a prepared checklist.
* Analyzing team performance: Evaluating how team members performed, including whether they met their goals along with timeliness and quality of work.
* Documenting project closure: Making sure that all aspects of the project are completed with no loose ends remaining and providing reports to key stakeholders.
* Conducting post-implementation reviews: Conducting a final analysis of the project, considering lessons learned for similar projects in the future.
* Accounting for used and unused budget: Allocating remaining resources for future projects.
* By remaining on task even though the project’s work is completed, you will be prepared to take everything you’ve learned and implement it for your next project.

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2.What are the roles of data collection and report in project completion

Some of the standard duties of a data collector are provided in the list below:

• Look through job orders to determine type of data collection activities required each day.

• Create strategies to obtain data from different avenues in a quick manner, and in accordance with specified guidelines.

• Obtain data fields from specified avenues and check them for accuracy and integrity by comparing them with original instructions.

• Identify and establish contact with people and agencies to ensure obtainment of data in a quite manner.

• Assist individuals and organizations to take part in data collection activities by providing them with information on the merits of the action.

• Collect required information and ensure that it properly saved until it can be punched into the system.

• Perform data entry work to place collected data into the company database, placing special emphasis on data integrity and accuracy.

• Ascertain that any data updates are properly punched into the system on a regular basis.

• Assess data to ensure that its confidentiality state and integrity is maintained throughout the time that it is in used.

• Respond to requests for information / data retrieval by first verifying requester’s access and then providing them with information or data fields as required (Berkun, 2005).

3.What is organizational design? Explain your answer with examples

Organizational design is the process of creating the hierarchy within a company. The elements of organizational design help business leaders establish the company departments, chain of command and overall structure. The aspects of organizational structure most notably reviewed is the organizational chart. The key aspects when creating the design of an organization include the following.

Work Specialization, work specialization is the first of the elements of organization structure. Business leaders must consider the job tasks and specific duties associated with given positions. Dividing work tasks among different jobs and assigning them to definite levels, is the role of work specialization elements. An example would be giving the first person in the assembly line the job of putting the first three components together. The second person in the assembly line might then put the decals on the product, and the third would put the item in the box. Leaders should be careful to not overly specialize in any one job because this can lead to boredom and fatigue. This results in slower work and even errors. Managers may have jobs assigned and adjust the roles depending on how specialized the job in one area is (Ferraro, 2012).

Departmentalization and Compartments, departmentalization and compartments are two other components of organizational design. Departments are often a group of workers with the same overall functions. They are often broken down by broad categories such as functional, product, geographical, process and customer. Common departments include accounting, manufacturing, customer service and sales. Compartments might have teams with different department members that are put together for efficiency. For example, a company delivering IT services to other businesses might have teams assigned to each company. Each team might have a project manager, a graphic designer, a coding specialist, a security specialist, a client representative and service provider.

Chain of Command, the chain of command is what the organizational chart typically illustrates. It shows who reports to who in the company's human resources structure. Some companies have a more traditional hierarchy with very clear department leaders and executives in charge. Other companies use a more fluid chain of command and structure where more people are considered part of the same level of command on a cross-functional team. There are pros and cons to any model. What is important is that employees know what is expected of them and how they get information to flow to the proper channels. If an employee isn't sure who his direct supervisor is due to an unclear chain of command, he might not properly relay the right information to the right party.

Span of Control, the span of control is the organizational design element that considers the capacity of any manager. There are limits to the number of people one person can oversee and supervise. The span of control addresses this design element. If a manager has too many people to oversee, he might lose his effectiveness and not recognize problems or successes. A span of four means that for every four managers, sixteen employees can be effectively managed. Other industries might use a span of eight or another number that describes how the human resources directors need to disburse managers.

Centralization and Decentralization, centralization and decentralization are organizational design elements deciding the degree which decision-making is made at one central level or at various levels by employees. For example, all major budget decisions would filter to the chief executive officer and chief financial officer in a centralized fashion. Customer service decisions might be decentralized giving those interacting with customer directions on how to handle issues but the authority to make certain decisions.

Formalization of Elements, smaller organizations tend to have informal elements where large organizations formalize roles more specifically. The reason smaller organizations use less formal standard is that employees may serve multiple roles as necessary. Bigger organizations need to formalize elements to ensure the right stuff gets done on time and correctly. Formalization might also be seen with specific job duties. For example, there may be a very specific way that payroll is done to ensure that everyone gets paid on time, with the correct withholding. The sales department might not be very formalized and might allow each representative to find his organic process so that he may succeed.

4.Discuss the goals of project management and explain the methods of project selection

As a project manager, you need to manage people, money, suppliers, equipment, the list is never ending. The trick is to be focused. Set yourself personal goals to achieve. If you can meet these simple goals for each project, then you will achieve total success.

These goals are generic to all industries and all types of projects. Regardless of your level of experience in project management, set these below goals for every project to manage (Garrett, 2011).

Goal 1: To Finish on Time, this is the oldest but trickiest goal in the book. It’s the most difficult because the requirements often change during the project and the schedule was probably optimistic in the first place. To succeed, you need to manage your scope very carefully. Implement a change control process so that any changes to the scope are properly managed. Always keep your plan up to date, recording actual verses. planned progress. Identify any deviations from plan and fix them quickly.

Goal 2: To Finish Under Budget, to make sure that your project costs don’t spiral, you need to set a project budget at the start to compare against. Include in this budget, all the types of project costs that will accrue, whether they are to do with people, equipment, suppliers or materials. Then work out how much each task in your plan is going to cost to complete and track any deviations from this plan. Make sure that if you over-spend on some tasks, that you under-spend on others. In this way, you can control your spending and deliver under budget.

Goal 3: To Meet the Requirements, the goal here is to meet the requirements that were set for the project at the start. Whether the requirements were to install a new IT system, build a bridge or implement new processes, your project needs to produce solutions which meet these requirements 100%. The trick here is to make sure that you have a detailed enough set of requirements at the beginning. If they are ambiguous in any way, then what was initially seen as a small piece of work could become huge, taking up valuable time and resources to complete.

Goal 4: To Keep Customers Happy, you could finish your project on time, under budget and have met 100% of the requirements, but still have unhappy customers. This is usually because their expectations have changed since the project started and have not been properly managed. To ensure that your project sponsor, customer and other stakeholders are happy at the end of the project, there is need to manage their expectations carefully. It is ensured always keep them properly informed of progress. “Keep it real” by giving them a crystal-clear view of progress to date. Let them voice their concerns or ideas regularly. Tell them upfront when one can’t deliver on time, or when a change needs to be made. Openness and honesty are always the best tools for setting customer expectations.

Goal 5: To Ensure A Happy Team, if one can do all of this with a happy team, then one will be more than willing to do it all again for the next project. And that’s how one’s staff will feel also. Staff satisfaction is critical to the project’s success. So, keep the team happy by rewarding and recognizing them for their successes. Assign them work that complements their strengths and conduct team building exercises to boost morale. With a happy motivated team, they can achieve anything.

On the other hand, importance of Project Selection using the right project management methodology for the company, selecting the right projects can mean the difference between one year in the black or several in the red. An unreasonable project scope, loosely defined deliverables, and unrealistic goals can all lead to an enormous drain on the budget and critically damage productivity as well. These calculations can be done in two different ways: using the Benefit Measurement Methods or the Constrained Optimization Methods

Benefit Measurement Methods, as the name suggests, rate potential projects according to a specific model and compare those results between the project candidates. Below are the most common Benefit Measurement Methods be used by Project Managers.

Cost Benefit**Ratio,** is simplest of the Benefit Measurement Methods, the cost benefit ratio is an effective way of communicating the potential value of a project in easily understandable terms. It measures the costs of investing in a project against the value of the return once it is completed. A project that requires $280,000 in resources to complete with an expected $420,000 return would have a 4:6 (or 2:3) cost benefit ratio. Essentially, every $2 invested in this project would yield $3 in revenue. Projects with a lower cost benefit ratio (or a higher benefit cost ratio) should be selected if evaluated only by this method.

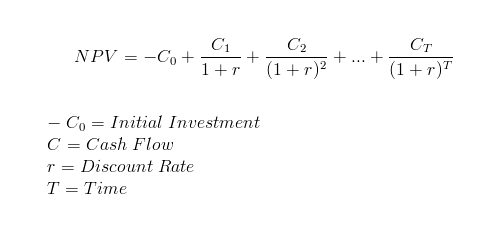
**Economic Model,** also known as the Economic Value Added (EVA), is similar to the Cost Benefit Ratio technique in that it describes the difference between costs invested and revenue generated in one number; profit. These defines EVA as “net operating profit after tax (invested capital X weighted average cost of capital).” This model provides a clear representation of the quantifiable benefits of a project once it’s completed and can help give you a solid idea of what kinds of returns to expect for each project.

**Payback Period,** the Payback Period Technique looks at how long it will take your company to recoup its expenses with a particular project. If our $280,000 project were to bring in $20,000 a year once it’s completed, the total payback period would be 14 years. It’s worth remembering though, that any time you try to factor in returns over time you should be looking at the present dollar value of the future revenue as inflation and interest will all come into play.

**Discounted Cash Flow (DCF),** the Discounted Cash Flow Analysis handles the problem of calculating the present value of future earned dollars. This is one of the best ways to calculate value of returns that occur over a long period of time rather than immediately after completion. While the Payback Period Model is easy to calculate and simple to understand, the Discounted Cash Flow (DCF) model incorporates the time value of money. This concept helps translate future earnings into present day dollar values since a dollar in hand has more earning potential than one promised for later.

**Net Present Value (NPV),** using Discounted Cash Flow, the Net Present Value (NPV) model helps put the whole lifecycle of the project into perspective in terms of earnings. For instance, calculating the earnings for year one of the project may return a net loss of, say, $800. Year two may see a loss of $200, while years three, four, and five may result in gains of $500, $1000, and $1500. All of these values would of course be informed by the DCF concept to translate future values into present dollars. The Net Present Value of the project, then, would be the combination of all of these numbers ($3000 minus losses of $1000) and would equal $2000. While there are a number of essential free tool at a project manager’s disposal in general, the easiest one for calculating NPV is Excel by far. For help in determining how to calculate NPV using Excel, head over to dedicated to the subject.

The equation for determining Net Present Value according to Finance formulas is:



**Scoring Models** may be the most flexible way of comparing projects to one another. Rather than focusing purely on financials, Scoring Models let you determine which qualities of a project are most important to team, and the company at large. For example, choose to look at profitability, overall risk, support from stakeholders, and difficulty of the project. Once the criteria are chosen, one want to weight them according to priorities and rank each project in terms of these four measures using a consistent scale. The total numbers for a single project are then combined and used to reflect the project’s total value, making it easy to compare your projects to one another.

**Internal Rate of Return (IRR),** incorporates the Net Present Value into its calculation by setting the NPV to zero. Essentially, this means that all cash flow from a project (both negative and positive) even each other out. Using the same equation as NPV where the NPV is set to zero, the IRR of a project is determined by solving for the variable “r” rather than NPV. If the Internal Rate of Return for a project is lower than the company’s required rate of return (RRR), then that project can be eliminated entirely.

**Opportunity Cost,** the concept of opportunity cost is crucial to understand for any certified project manager worth their salt. Essentially, Opportunity Cost comes down to what you’re missing out on by choosing one project over another. More a supplemental technique than a standalone method itself, Opportunity Cost can be a great way to put a certain project choice into perspective. If, for example, Project 1 and Project 2 are worth $75,000 and $85,000 respectively, going with Project 1 would have an opportunity cost of $10,000 since that’s how much your company would miss out on.

While constrained Optimization Methods are also known as the Mathematical Model of Project Selection. Given their complexity though, many project managers will likely choose the Benefit Measurement methods to meet their Project Selection needs. As discussed below.

* **Linear Programming,** this programming method involves bringing down the cost of the project through reduction of the time required to complete it.
* **Nonlinear Programming** aims at solving optimization problems within projects wherein some of the constraints or functions are nonlinear.
* **Integer Programming,** this method focuses on integer values rather than fractional ones. Some products, like tables for example, can never be fractional.
* **Dynamic Programming,** this method involves simplifying a complex problem by separating it into several simpler problems.
* **Multiple Objective Programming,** the Multiple Objective Programming approach focuses on deciding for a number of problems using mathematical optimization.

5.Using examples explain the following

I. Project evaluation is a systematic and objective assessment of an ongoing or completed project. The aim is to determine the relevance and level of achievement of project objectives, development effectiveness, efficiency, impact and sustainability.

II.Auditing

An audit is a systematic and independent examination of books, accounts, statutory records, documents and vouchers of an organization to ascertain how far the financial statements as well as non-financial disclosures present a true and fair view of the concern. It also attempts to ensure that the books of accounts are properly maintained by the concern as required by law.

Project auditing is designed to conduct an evaluation at several stages during the life cycle of the project. Even though a project will be evaluated at the end as part of the post control, an audit will help identify if the processes are being followed and are the resources and revenue being utilized throughout the project.

III.Termination

Project termination (or close-out) is the last stage of managing the project and occurs after the implementation phase has ended. Acceptance testing has been carried out, and the project deliverables have been handed over to the client.

6.What is expected of a project leader?

The project manager, operating within agreed reporting structures, is responsible for:

* Designing and applying appropriate project management standards for incorporation.
* Managing the production of the required deliverables.
* Planning and monitoring the project.
* Adopting any delegation and use of project assurance roles within agreed reporting structures.
* Preparing and maintaining project, stage, and exception plans as required.
* Managing project risks, including the development of contingency plans.
* Liaison with programme management (if the project is part of a programme) and related projects to ensure that work is neither overlooked nor duplicated.
* Monitoring overall progress and use of resources, initiating corrective action where necessary.
* Applying change control and configuration management processes.
* Reporting through agreed lines on project progress through highlightreports and end stage assessments.
* Liaison with appointed project assurance representatives to assure the overall direction and integrity of the project.
* Maintaining an awareness of potential interdependencies with other projects and their impact.
* Adopting and applying appropriate technical and quality strategies and standards.
* Identifying and obtaining support and advice required for the management, planning and control of the project.
* Managing project administration.
* Conducting a project evaluation review to assess how well the project was managed.
* Preparing any follow-on action recommendations.

However, in construction projects the project manager also provides the interface between the project sponsor and the supply side of the project team.

7.Discuss in detail the attributes of a project leader?

The project manager should be able to:

* Apply a prince 2 (an acronym for PRojects IN Controlled Environments) project management approach to the specific requirements of the project.
* Establish a good working relationship with the senior responsible owners.
* Direct, manage and motivate the project team.
* Develop and maintain an agreed project plan and detailed stage plans.
* Understand and apply business and risk management processes.
* Tailor expert knowledge to meet specific circumstances.
* Plan and manage deployment of physical and financial resources to meet project milestones.
* Build and sustain effective communications with other roles involved in the project.
* Apply quality management principles and processes.

8.With the help of the risks and mitigants pyramid explain project financing

Financing infrastructure projects, especially in developing countries, entails a formidable set of risks. It is the role of the project finance advisor, the project sponsor and other participants to structure the financing in such a manner that mitigates these risks. Lenders and investors always are initially concerned about financing immobile assets in distant, politically-risky areas of the world. The project finance advisor’s role is to carve out the risks, assigning them to the party who is best suited to be responsible for controlling them. The purpose of this section is to provide a checklist of the risks that a project finance transaction faces rather than a strict taxonomy of these risks.

Therefore, some of the categories listed below are naturally related and it is possible that some overlap exists between categories (Garrett, 2011).

Risks and Mitigants Pyramid

Environment

Country

Industry

Company

Competition

Market

Project

Product

Supply

Funding

Interest

Currency

Country, risks cover the political economy. Examples of country risk include civil unrest, guerrilla sabotage of projects, work stoppages, any other form of force majeure, exchange controls, monetary policy and inflationary conditions. The country risk in some cases serves as the ceiling for a project’s risk rating. For instance, Standard & Poor’s credit rating agency limits specific project ratings by the sovereign credit rating that the agency assigns the country. That is, no project, despite its particular circumstances, can have a higher credit rating than the country’s credit rating. Specific mitigants might include political risk insurance against force majeureevents or allocating risk to the local company. Involving participants from a broad coalition of countries also gives the project sponsors leverage with the local government.

Political,these risks cover changes within the country’s political landscape, i.e., change of administration, as well as changes in national policies, laws regulatory frameworks. Environmental laws, energy policies and tax policies are particularly important to pipeline projects. These risks are not confined to the most unstable regimes in the developing world. It is a mistake to simplify political risks into only the most drastic actions such as expropriation. In the political environment of the 1990s, these drastic actions are rare. Nevertheless, infrastructure projects in developing countries continue to face significant political risks, albeit in more subtle forms “such as price regulation, restrictions on working permits for foreign managers, renegotiation of contracts, and even buyouts.” In a recent article in Harvard BusinessReview, Louis Wells and Eric Gleason cite an example in Thailand where the government “unilaterally ordered a private toll road opened and lowered the amount its foreign owners could charge in tolls.” The local sponsor, Thai Expressway and Rapid Transit Authority obtained a court order to force the project sponsors to open the toll road at a lower. It would be a mistake to confine these political risks to the developing world. State regulatory bodies in the United States can be just as fickle with rate regulations for power plants as any foreign ministry of energy.

Mitigants include, again, political risk insurance as well as flexible tariff agreements that incorporate adjustments for these types of contingencies. An intimate acquaintance with the local political environment also increases a project sponsor’s ability to foresee trouble spots.

Industry, competitive forces within the industry represent significant risks to the project. It is necessary for project sponsors to analyze the potential risks that their particular project faces vis-à-vis global and local industries. The prices of substitute products, inputs and outputs are critical factors in determining the economics of the project. Other competing projects within the country or in the neighboring region have competitive implications for the project. Standard and Poor’s checklist for competitive forces for pipelines provides an example of the types of industry risks that creditors emphasize:

the influence of other existing or planned pipelines in the area;

* cost of transportation - the economics of the pipeline to the end users;
* substitutes - other sources of energy that could compete with the fuel being transported;
* the potential for other uses and/or users of the feedstock being transported by the pipeline, which could render the pipeline obsolete;
* present and prospective commodity price and supply situation;
* potential for supply disruptions and exposure to price fluctuations.

The primary mitigant against industry or competitive risk is thorough industry analysis and insight into the industry’s underlying dynamics.

Project risk is generally associated with the adequacy and track-record of the concerned technology and the experience of the project’s management. The chief mitigant in this area is the selection of contractors, developers and operators who have proven track records. Independent consulting engineers can play a role in assessing the technical feasibility of projects by making technical risks transparent to lenders.

Customer, the risk with customers is that demand for the product or throughput declines or widely fluctuates. Given the high fixed costs of infrastructure projects, it is difficult, if not impossible, for these projects to reduce costs to match lower demand. Thus, the chief mitigant against this type of risk is an offtake agreement, a contract which guarantees purchase of the throughput. Essentially, a project company agrees to sell a large share of its output to a customer or group of customers for an extended period of time. The price per unit of output can be fixed, floating or adjusted for inflation or other factors. The customer benefits from this arrangement by securing a long-term, guaranteed source of supply for the output, but generally forfeits a certain amount of flexibility in sourcing. The project company benefits by eliminating or substantially reducing its marketing risk.

Supplier, the general issue here is with securing supplies for the project - electricity, water and, again, long-term agreements that guarantee that the project will have access to critical inputs for the duration of the project’s life are the chief instruments used to mitigate the risk. The three critical dimensions of supply are quality, quantity and availability. For pipeline projects, rights-of-way might also be considered critical inputs because without them the project company would not be able to build the pipeline.

Sponsor, the project sponsor is typically an entrepreneur or consortium of entrepreneurs who provide the motivating force behind the project. Often, the project sponsor is an entrepreneur without sufficient capital to carry out the project. In other cases, the sponsor might have the necessary capital but is unwillingly to bet the parent corporation’s balance sheet on a high-risk venture. The primary risks with sponsors revolve around the sponsor’s experience, management ability, its connections both international and with the local agencies, and the sponsor’s ability to contribute equity. Investors and lenders can mitigate these risks by carefully evaluating the project sponsor’s track record with similar transactions.

Contractor, the principal construction risks are schedule delays and budget overruns. Standard and Poor’s, in fact, “believes that it would be difficult for a project to achieve investment-grade ratings prior to substantial completion of the project and initial startup.” Mitigating these risks involves scrutinizing the contractor, specifically the contractor’s experience with similar projects, reputation in the field, backlog of other projects and cash flow. The primary method of putting the burden of successful completion on the contractor, as opposed to on the lenders and investors, is a turnkey contract. A turnkey contract essentially binds the contractor to finish construction by a specified date for a fixed amount. The completed project must also meet the agreed upon technical specifications as certified by an independent engineer before payment is made. Additional mechanisms to ensure compliance with schedules and budgets include performance bonus and penalty clauses in the construction contract. Penalties for delays can be severe, as much as $750,000 per tariff day. It is also important to review the contractor’s bidding history. A contractor which has a history of consistently bidding too low presents a greater risk of cost overruns. Additionally, independent engineers can play a role in monitoring the project’s progress and certifying that the contractor has achieved the milestones on schedule.

Operating risk, the operator is the company or entity charged with the responsibility of maintaining the quality of the assets that generate the project’s cash flow. Of course, lenders and investors want to make sure that the assets remain productive throughout the life of the project, or more importantly from their perspective, the life of the loan or investment. Hence, operating risks center around the efficient, continuous operation of the project, whether it is a mining operation, toll road, power plant or pipeline. Contracted incentive schemes are one way to allocate this risk to the operator.

Product risks might include product liability and design problems. The underlying risk here is unperceived risks with the product like unforeseen environmental damages. For instance, an electrical transmission project running through a populated area might carry the risk of affected the population through the detrimental health effects of the electro-magnetic radiation. Using older, tested designs and technologies reduces the risk of unforeseen liabilities. For instance, the Asian infrastructure developer Gordon Wu built his reputation by recycling one straightforward power plant design in his many projects instead of re-designing each individual project. Through using a tested design, Wu was able to not only reduce product and construction risks, but also to reduce design costs through economies of scale.

Competitor, this risk is related to industry risk, however it focused more directly on resources with which the competitor might be able to circumvent competitive barriers. Exclusive agreements, offtake agreements and supply arrangements all contribute to defending a long-term competitive advantage.

The funding risk is that the capital necessary for the project is not available. For example, equity participants might fail to contribute their determined amount. Or, the underwriters might not be able to raise the target amount in the market. Another funding risk is re-financing which occurs if the duration of the initial funding does not match the duration of the project. Funding risks can also relate to the division between local and foreign currency funding. As funding is often the linchpin of project financings, it is difficult to reduce the risk of not finding the funding. The choice of an experienced financial advisor as well as seeking capital from a broad range of sources represent two ways to mitigate this risk. Also, it is sometimes possible to restructure transactions to delay drawdown dates or to change the amounts of foreign versus local currency.

Currency, there are two currency risks facing project companies. The first risk is exchange rate fluctuation, devaluation erodes the value of a contract or payment in the project company’s home currency, or the currency in which it must service its debt. The second risk is currency controls, which relates to the sovereign government limits the project company’s access to foreign exchange or curtails its ability to make foreign currency payments outside of the country. Another possible means of mitigating currency risk is to engage in a currency swap.

Interest rate, fluctuations represent a significant risk for highly-leveraged project financings. Arranging for long-term financing at fixed rates mitigates the risk inherent in floating rates. Furthermore, projects can enter into interest rate swaps to hedge against interest rate fluctuations.

Risk allocation, just as important as identifying the risks, is the need to allocate the risks to the parties that are most suited to control and address the risks. Thus, risk allocation is a form of risk mitigation at the macro level. If the wrong parties are responsible for risks they are not suited to manage, the entire structure is at risk. Therefore, the crux of every project finance transaction is the proper allocation of risk. It might also be the most difficult aspect of assembling a transaction. As one project financial advisor argues, “the most significant characteristic of project finance is the ‘art’ of minimizing and apportioning the risk among the various participants, such as the sponsors, contractors, buyers and lenders.”

How the principal instruments for allocating the risks and rewards of a project financing are the numerous contracts between the project company and the other participants. “While often the cause of delay and heavy legal costs, efficient risk allocation has been central to making projects financeable and has been critical to maintaining incentives to perform.

9.What are the sources for finance for a project, discuss each in detail

First, there is sale and leaseback Assets can be sold to a financial institution and then leased back for a certain term. This releases capital in assets, which can be used for investment, but should be offset by the rental payments and loss of capital growth should the assets increase in value.

Loan Capital Debentures, some loans are secured by a fixed or floating charge against a company’s assets and are known as debenture loans. Debenture holders receive their interest payment before any dividend is paid to shareholders and if the business fails the holders will be preferential creditors. Parts of the funds raised for the Jomo Kenyatta airport in Nairobi Kenya were financed by either debenture (Heldman, 2018).

Business Angels, these are private investors who invest directly in a company in exchange for an equity stake and perhaps a place on the board. They normally invest in the region of £10k to £100k and they invest in order to receive a capital gain, they are usually experienced entrepreneurs and can be a source of useful knowledge for the business.

Venture Capital or Capitalists usually offer 100 USD or more to companies that other financial institutions might consider too risky. They exchange their capital for an equity share and involvement at a strategic level often through a non-executive position on the board. Their prime aim is to increase the value of their shares so that they can sell them at a profit. Example, the British Venture Capital Association (BVCA) represents most UK based private equity and Venture Capital firms.

Share Capital is raised through the company shareholders. In exchange for their investment they receive a share of the profits through a dividend. They may also receive a capital gain through sale of their shares are some future date. There are two main types of shares. Ordinary shares are held by the owners of the business who have a right to a share of the company profits through dividends, which vary in value depending on performance. As owners of the company they have voting rights at Annual and Extra-Ordinary General Meetings, however they are liable should the company become insolvent and are therefore accepting a level of risk with their investment. Preference shares are less risky as the holders of preference shares are not owners of the company. They offer a guaranteed dividend although this may be less than that received by ordinary shareholders. As preference shareholders are not owners of the company they have limited voting rights.

Retained profits Not all profits are distributed to shareholders: the company retains a proportion as reserves. This is usually the most significant source of equity finance, costs far less than external sources that charge interest and can be distributed as the company sees fit.

Issuing shares can be issued through new issues or rights issues. New issues are generally made at the same time as the company is floated on the stock market, and the capital raised is significant. The price of the new share is based on project growth rates, stability, market sentiment, and comparison with other similar companies and the capital structure of the company. A rights issue is a way of raising more capital from existing shareholders by offering them the opportunity to buy more shares. Rights issues are cheaper and a better deal for existing shareholders than new issues. The price is set lower than the current share price and shareholders can choose to buy more shares, sell their rights or let the rights expire.

Private finance initiative (PFI), was launched in 1992 with the purpose of transferring the risk of designing, building, constructing and operating public services to the private sector. Since then over 500 deals have been agreed. PFI contracts are long term and may last up to 30 years. PFI is attractive in the short term as it enables government departments to finance projects for which they don’t have the capital. However, in the long term the payments can be higher than conventional borrowing methods and may lead departments to favor projects that are suitable for PFI.

Project Grants and funding Grants are given to individuals or a business for a specific project. They don't need to be paid back, but they do need to be applied for, and the application process can be highly competitive and time consuming. Statutory funding is available from quangos like Connexons, English Heritage or the Learning and Skills Council.

Government funding is provided through government schemes. Other sources include: The National Lottery, the European Union, philanthropy, trusts and foundations, direct endowments and specific fundraising initiatives.

10.What is the importance of looking at the sources of finance for a project

A business without a funding source will flounder under the weight of its own debt. Funding is the fuel on which a business runs. A business can take different avenues to attain funding, and more than one option can be used. The chosen funding will depend on the business' desire to be in debt, how solvent the business owners are at the time the business is founded and the amount of money a business will need to launch and maintain itself through a variety of events.

Materials, office supplies, equipment, a website and business cards all cost money and it has to come from somewhere. an investor of a small business loan or the owner’s savings account must be raised to get the business started (Kerzner, 2013).

A business owner needs to draw a salary to survive. If the business has employees, they must be paid. There are utilities to pay, insurance to buy and a laundry list of other expenses that must be paid for the business to survive. When a business first starts, profits are going to be low, so business funding is needed to allow for the cash flow to meet expenses until profits pick up.

When a business outgrows its current location, or there is a demand for new goods or services, expansion becomes an option. A new location, product and marketing research, new services and additional staff if needed can be financed with business funding.

Accidents happen. Fires, floods, tornadoes and hurricanes can wreak havoc on a business and its bottom line. Although insurance will cover most catastrophic events, premiums and deductibles have to be paid and there needs to be money in the coffers to pay salaries while the business is repaired. Even less disastrous events can call for a rather large cash outlay. For example, equipment becomes outdated and computers need to be upgraded or replaced. A line of credit or corporate business card with a special rate can come in handy at these times.

A company can explore several options where financing is concerned. Traditional bank loans can still be attained by a small business. Lines of credit or corporate credit cards with special rates can also be an option. Keep in mind that attaining funding will mean presenting your business idea to potential investors, so you will need to be confident and know the business model inside and out. But if a business owner wants to bootstrap the business himself, a loan of 401USD, dipping into a savings account or investments from family or friends are options as well.

11.With the aid of the project finance structure discuss the various participants and their relevance

PROJECT FINANCE STRUCTURE

Government

Owners

Contractor

Operators

Power plant

Fuel Supplier

Power purchaser

Bank

Source: Princeton pacific group

Government, though local governments generally participate only indirectly in projects, their role is often most influential. The local government’s influence might include: approval of the project, control of the state company that sponsors the project, responsibility for operating and environmental licenses, tax holidays, supply guarantees, and industry regulations or policies, providing operating concessions.

Project sponsors or owners, the sponsors are the generally the project owners with an equity stake in the project. It is possible for a single company or for a consortium to sponsor a project. Typical sponsors include foreign multinationals, local companies, contractors, operators, suppliers or other participants. The World Bank estimates that the equity stake of sponsors is typically about 30 percent of project costs. Because project financings use the project company as the financing vehicle and raise nonrecourse debt, the project sponsors do not put their corporate balance sheets directly at risk in these often-high-risk projects. However, some project sponsors incur indirect risk by financing their equity or debt contributions through their corporate balance sheets. To further buffer corporate liability, many of the multinational sponsors establish local subsidiaries as the project’s investment vehicle (Schmidt, 2009).

Project companyis a single-purpose entity created solely for the purpose of executing the project. Controlled by project sponsors, it is the center of the project through its contractual arrangements with operators, contractors, suppliers and customers. Typically, the only source of income for the project company is the tariff or throughput charge from the project. The amount of the tariff or charge is generally extensively detailed in the off-take agreement. Thus, this agreement is the project company’s sole means of servicing its debt. Often the project company is the project sponsors’ financing vehicle for the project say, it is the borrower for the project. The creation of the project company and its role as borrower represent the limited recourse characteristic of project finance. However, this does not have to be the case. It is possible for the project sponsors to borrow funds independently based on their own balance sheets or rights to the project.

The contractor is responsible for constructing the project to the technical specifications outlined in the contract with the project company. These primary contractors will then sub-contract with local firms for components of the construction. Contractors also own stakes in projects. For example, Asea Brown Boveri “created a fund, ABB Funding Partners, to purchase stakes in projects where ABB is a contractor. Subscribers to the fund are a mixture of institutional investors focused on the energy sector, and the financing arms of big contractors.” Richard Ingham, managing director of the project finance group at Chase Manhattan, argues that much of the infrastructure development “is being driven by the contractors which may ultimately view equity investment as a cost of doing business.”

Operators are responsible for maintaining the quality of the project’s assets and operating the power plant and pipeline, at maximum efficiency. It is not uncommon for operators to also hold an equity stake in a project. Depending on the technological sophistication required to run the project, the operator might be a multinational, a local company or a joint-venture.

The supplier provides the critical input to the project. For a power plant, the supplier would be the fuel supplier. But the supplier does not necessarily have to supply a tangible commodity. In the case of a mine, the supplier might be the government through a mining concession. For toll roads or pipeline, the critical input is the right-of-way for construction which is granted by the local or federal government.

The customer is the party who is willing to purchase the project’s output, whether the output be a product (electrical power, extracted minerals, etc.) or a service (electrical power transmission or pipeline distribution). The goal for the project company is to engage customers who are willing to sign long-term, offtake agreements.

Commercial banks represent a primary source of funds for project financings. In arranging these large loans, the banks often form syndicates to sell-down their interests. The syndicate is important not only for raising the large amounts of capital required, but also for de factopolitical insurance. Even though commercial banks are not generally very comfortable with taking long term project finance risk in emerging markets, they are very comfortable with financing projects through the construction period. In addition, a project might be better served by having commercial banks finance the construction phase because banks have expertise in loan monitoring on a month-to-month basis, and because the bank group has the flexibility to renegotiate the construction loan.

While not part of the project finance angel, the following components make the angel diagram even more complex.

Capital markets.Major investment banks have recently completed a number of capital market issues for international infrastructure projects. Through the private placement market, the banks have successfully raised capital from institutional investors. As a consequence, many pundits are touting the capital markets as the instrument of choice for financing emerging markets transactions. The capital market route can be cheaper and quicker than arranging a bank loan. In addition, the credit agreement under a capital market is often less restrictive than that in a bank loan. Furthermore, these financings might be for longer periods than commercial bank lending; might offer fixed interest rates; and can access wider pool of available capital and investors such as pension funds. The disadvantages of capital market financings include: the necessity of preparing a more extensive disclosure document; capital market investors are less likely to assume construction risk; the bond trustee plays a greater role; more disparate investors - not a club of banks; unlike bank debt, proceeds are disbursed in a single lump sum, leading to negative carrying costs. Credit agency ratings for project finance transactions, however, are making the capital market route much smoother by making credit evaluations more transparent (Shaw, 2011).

Direct equity investment funds.Private infrastructure funds represent another source of equity capital for project financings. Examples of these funds include AIG (Asian Infrastructure Fund) ($1.1 billion), Peregrine’s Asian Infrastructure Fund ($500 million), Global Power Investments ($500 million) and the Scudder Latin America Infrastructure Fund ($100 million, with target of $600 million). These funds raise capital from a limited number of large institutional investors. Then their advisory teams screen a large number of infrastructure projects for potential investment opportunities. The funds typically take minority stakes of the infrastructure projects in which they invest.

Multilateral agencies. The World Bank, International Finance Corporation and regional development banks often act as lenders or co-financers to important infrastructure projects in developing countries. In addition, these institutions often based capital requirements; a general decline in commercial bank credit quality.

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