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How to Successfully Develop Projects ©

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Introduction

Most projects (almost 9 out of 10), under consideration, are unsuccessful and often never completed. There are many reasons why projects fail. This paper examines why projects fail and how to screen and select projects with the best potential for success. The methodology briefly described in this paper, applies to projects in almost all sectors.

The daunting challenges to developing a successful project are:

- Finding viable projects and ranking them in the order for potential success.

- Finding the project with the greatest promise for success, in a timely fashion, without unduly expending resources on the screening and selection process .

- Devoting and focusing the bulk of the resources to the project, with the most potential for success.

Projects have two distinct phases:

(a) The Development Phase
(b) The Management Phase

This paper focuses primarily, on the Project Development Phase. However, since successfully implementing the project, i.e. managing the project, is an extension of the development phase, some important aspects of project management will be briefly discussed.

The project development phase includes all efforts performed prior to obtaining committed financing. The project management phase includes activities performed, after securing financing. The two phases are interlinked and some critical decisions made in the development phase are carried forth in the management phase. A good project normally has these two phases in a "seamless" configuration.
In many projects, the key personnel from the development phase stay on and continue to lead in the management phase.

During the project development phase, there are some projects that should be aborted as they have some fundamental "fatal flaw" issues. These are issues that cannot be compromised and changing them would structurally change the project. Historically, these projects do not succeed and it's recommended to not pursue them.

During the project management phase, some projects fail. The major reasons why projects fail in this phase, is presented later in this paper.

The Development Phase

The development phase is very critical, time consuming, and requires a disciplined approach. Usually, this phase is not financeable and therefore requires frugal deployment of internal resources, reserves and in most cases, overhead funds. The Project Development phase includes all efforts performed prior to obtaining firm financing.

The first step in this phase is to select a qualified Manager (usually designated as Project Director or Project Manager or Sponsor) to head this effort. Project Director is the designation used in this paper.

Project Director

Projects are like symphony orchestras. Projects have team members, with different skill sets (akin to musicians in the orchestra). The Project Director is the "conductor" of the symphony (project). He decides when and how to deploy resources for the required result. He corrals and motivates the project team to perform at its peak.

The selection of the Project Director is critical as this is the inception phase and sets the stage for the entire project.

An ideal project director has the following qualifications:

a) Excellent communicator, both oral and written

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b) Has interpersonal skills and is good at managing people

c) Has a proven record of technical and managerial excellence

d) d. Has successfully developed projects or played a major supporting role in developing projects

e) Has a good rapport with senior management and has their confidence

f) Subscribes to the overall mission and goals of the organization

g) Aspires and plans to grow with the organization

The Project Director is responsible for assembling and managing a complimentary team. There can be a single team to develop multiple projects or an individual team for each project. After the team(s) is formed, the project director initiates the process of preparing term sheets for all potential projects under consideration. He and his team will be responsible for ranking the projects, in the order of potential f or success. They will then present their findings to senior management for notice to proceed.

Writing a Term Sheet

The term sheet is the "forest" view of the project as opposed to the "tree" view. It is a 3 -4 page tightly written document. The term sheet is used:

- To select and build a winning stakeholder team

- On a macro level, to identify information needed and prepare action items

- As a preliminary due diligence exercise

-To test the project for the six fundamental criteria

- For the selected project, the term sheet will serve as the "mother of all documents"

Usually, a good project term sheet will identify two of the ten projects, which have a potential to succeed.

This paper will systematically explain, using real world examples, how the two phases can be executed successfully using well written documents. W riting a tightly written term sheet is often a difficult task. It requires fully addressing 12 elements, known as "Double Rubik's Cubes". The term sheet is a tightly written "living" document that forms the overall matrix for all project documents, such as engineering design, financing, ownership and permitting. The term sheet fully explains th e Project from a macro point of view, leaving the details to the subsequent documents to address.

The Rubik's Cube of Project Development

Developing a project involves many areas of expertise, each one diligently analyzed, assessed and risks and unknowns identified. Any area not fully wetted can cause the project to be in jeopardy. It is therefore crucial all the areas and they are 6 broad categories have to satisfy the requirements for the success of the project. Even if one of the categories fails to meet the required criteria, the project cannot move forward. This is not unlike the Rubik's Cube where all sides have to meet the criteria of having a single color. Hence Project Development is sometimes referred to as solving the Rubik's Cube of the different broad areas of impact to the project.

The following are the six broad areas that usually affect the development of the projects:

a. Financial
b. Technical
c. Institutional
d. Economics
e. Marketing
f. Ownership Issues

a. Financial Viability (Can the Project be financed?)

Not all projects can be financed. For instance, certain financing institutions will not participate in projects that for example, seriously impact the environment or involve relocations of large rural communities, or affect local flora and fauna in the area.

Each project developer must prepare a short list of potential interested investors/financing groups. There should be preliminary discussions with the short list group and an on-going communications with them.

b. Technical Viability (Does the technology work?)

The technical viability must be fully analyzed and due diligence performed by a reputable third party engineering enterprise. Care must be taken in the selection of the independent due diligence consultant. His reputation is very important and may affect the financing of the project. A formal report (preferably, professionally stamped and certified) must be prepared by Consultant.

c. Institutional Viability (What are the governmental, local, environmental, permitting and regulatory issues?)

Every country, region and provinces have specific regulations and rules for developing projects. A thorough study of these issues must be done and formally documented. Some 0f the issues are land use, permitting, environmental impacts, emission levels, etc. For many projects in developing countries, this can be a major issue and needs to be fully understood before proceeding with development.

d. Economic Sustainability (Will the Project make money?)

The debt and financing of the project is serviced by the revenue generated by the project. Furthermore, there must also be enough economics in the project , to generate profits, in accordance with the industry and the associated risks.

Recommend preparing a good pro forma analysis, preferably certified by a third party reputable independent consultant. All assumptions used in preparing the pro forma must be clearly stated in the beginning of the economic report.

e. Marketing Viability (Is there a need for the Project?)

A need assessment of the project must be done to make a case for the project to various organizations, such as local and federal governance, communities, potential stakeholders and financiers. The product or services from the project must justify the marketplace and create proponents for the project.

f. Ownership Issues (How is the Project ownership setup?)

The ownership structure must be organized, albeit in preliminary terms at the beginning of the project. On most projects, this is one issue that may change and evolve as the project progresses. This issue needs good legal advice from reputable law firms, preferably in the area. Regulations in many countries and provinces require attorneys and in some cases law firms to be registered and qualified to practice l aw in the region.

To summarize the above six broad issues must be carefully studied, analyzed and formally documented, before proceeding on the project. Since the majority of the projects do not have the promise to succeed, the Rubik's Cube of Project development is an excellent project screening technique.

Cost Estimates

Formal estimates should be prepared for each phase, preferably by an experienced Cost Engineer and reviewed by a third party independent reputable Consultant. The cost estimate must include the assumptions made and the contingencies used, based on the unknowns and the work done to date.

The following is a type of estimate system and contingencies used to prepare budgets. There are other systems and criteria for contingencies but th e important point is to prepare budgets in a formal, disciplined and transparent fashion.

Types of Capital Cost Estimates and Contingencies

There are 6 types of cost estimates shown below, based on the unknowns and work done to date. The respective contingencies are a function of the unknowns and also whether the project has historical data or has "greenfield" characteristics.

Type I: Order of Magnitude Estimate

This is a very preliminary estimate with a minimum of engineering work done. The contingencies are usually in the 25% range.

Type II: Conceptual Estimate

This estimate is based on the conceptual design. The contingencies vary from 20% to
22%.

Type III: Preliminary Estimate

This estimate is done when preliminary engineering is completed. The contingencies vary from 15% to 18%.

Type IV: Definitive Estimate

This estimate is prepared as the design progresses. The contingencies are about 12%.

Type V: Engineering Estimate

When engineering is about 70% completed and some equipment ordered and information received. The contingencies used are about 10%
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Type VI: Bid Estimate

After all major bid have been awarded, the Bid estimate is prepared. The contingencies for this estimate can vary from 5% to 7%.

The Management Phase

In the Project Management phase the scope, budget and schedule requirements of the Project are value engineered, controlled and successfully met.

There are several good guides on project management published by the Project Management Institute (PMI). Following the guidelines of the Project Management Book of Knowledge (PMBOK) is a good starting point.

In addition to the Term Sheet ("mother of all project documents"), two important documents must be created in this phase:

a. Project Management Plan (PMP)

This is a roadmap of how the project will be managed and the goals accomplished. It includes the organization chart and a clear definition of roles and responsibilities of the project team members. The PMP gives an overall view of the project and the major milestones and events to be accomplished.

b. Project Procedures (PP)

The project procedures give the day-to-day protocols to be followed as it pertains to the operations, communications and reporting functions.

Why Projects Fail

Extensive studies have been done to determine why projects fail. Surprisingly, projects fail due to only a few major reasons. They are:

a. Vague Scopes

Scope should be defined clearly and preferably in terms of Work Included and Work Not Included.

b. Inadequate Budget

Budgets must be realistic and must always include contingencies for unknowns and unanticipated events in the future.

c. Inexperienced Staff

Key project staff must have solid experience working on similar projects.

d. Lack of Cost Tracking System

Project Costs must be closely monitored and tracked on regular bases. Monthly Progress report should always include a "snapshot" of the costs to date, deviations and overruns. There should be no "surprises"!

e. Lack of Time Management Reports

Time charged on the project must be tracked with a good code of account system.

f. Poor Project Management

This is usually due to not having a qualified project manager.

g. Lack of Training

Training is an important component of career growth. It is often used to retain high performing employees. Several studies have shown that training ranks very high as an incentive to young employees and in some cases to mid management.

SUMMARY

The three important steps to developing a successful project are:

1. Carefully select a Project Director, who has the qualifications of a very able "orchestra conductor" and who can put together a diverse and complimentary team.

2. Prepare a tightly written term sheet. Use the term sheet to screen the project, build a team, shop for financing and assemble a good group of stakeholders.

3. Prepare a professional scope, schedule (with sub-milestones) and budget (with contingencies). Closely monitor the project progress (for scope, schedule and budget) and formalize all communications.

Author

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Mr. Iyer has over 36 years of project management, development and engineering experience. His experience spans all aspects of project work -- from the conceptual and feasibility stages through design, financing, procurement, construction and commissioning stages. Mr. Iyer's past engagements are in the Energy, Environmental, Minerals, W ater and Infrastructure engineering and development areas for public and private sector clients.

Mr. Iyer prepared financial, valuation and technical due diligence reports and bankable documents for projects and ventures. He successfully led teams in the development and management of projects and was responsible for the technology, execution, cost and schedule. Mr. Iyer has extensive hands-on experience in the design and construction of fixed fee turnkey projects. He assisted in the startup of an electric and water utility district. He also

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Mr. Iyer held senior management and technical positions at Bechtel Corp., Kaiser Engineers and Resource Management Inc., in California. In addition to developing and managing projects, Mr. Iyer had fiscal, fiduciary and operational res ponsibilities for business units. He staffed and managed offices and projects in Beijing (China), Abidjan (Cote D'Ivoire), Linden (Guyana), Jakarta (Indonesia), Lima (Peru) and Manila (Philippines) and worked in 16 countries.

Mr. Iyer has Bachelor of Science degrees in Electrical Engineering (BSEE) and Mechanical Engineering (BSME), Master of Science in Mechanical Engineering (MS) and a Master of Business Administration (MBA). Mr. Iyer is a Registered Professional Engineer (PE) and a member of Project Management Institute (PMI) and other organizations. Mr. Iyer taught Venture and Project Development and Management at the University of California. He has authored several technical and management papers and chaired conferences. He also conducted workshops, in many countries, for project stakeholders and other professionals.