

# **PROJECT MANAGEMENT**

## **The Project Life Cycle (Phases)**

The project manager and project team have one shared goal: to carry out the work of the project for the purpose of meeting the project's objectives. Every project has a beginning, a middle period during which activities move the project toward completion, and an ending (either successful or unsuccessful). A standard project typically has the following four major phases (each with its own agenda of tasks and issues): initiation, planning, implementation, and closure. Taken together, these phases represent the path a project takes from the beginning to its end and are generally referred to as the project "life cycle."

### **Initiation Phase**

During the first of these phases, the initiation phase, the project objective or need is identified; this can be a business problem or opportunity. An appropriate response to the need is documented in a business case with recommended solution options. A feasibility study is conducted to investigate whether each option addresses the project objective and a final recommended solution is determined. Issues of feasibility ("can we do the project?") and justification ("should we do the project?") are addressed.

Once the recommended solution is approved, a project is initiated to deliver the approved solution and a project manager is appointed. The major deliverables and the participating work groups are identified, and the project team begins to take shape. Approval is then sought by the project manager to move onto the detailed planning phase.

### **Planning Phase**

The next phase, the planning phase, is where the project solution is further developed in as much detail as possible and the steps necessary to meet the project's objective are planned. In this step, the team identifies all of the work to be done. The project's tasks and resource requirements are identified, along with the strategy for producing them. This is also referred to as "scope management." A project plan is created outlining the activities, tasks, dependencies, and timeframes. The project manager coordinates the preparation of a project budget by providing

cost estimates for the labour, equipment, and materials costs. The budget is used to monitor and control cost expenditures during project implementation.

Once the project team has identified the work, prepared the schedule, and estimated the costs, the three fundamental components of the planning process are complete. This is an excellent time to identify and try to deal with anything that might pose a threat to the successful completion of the project. This is called risk management. In risk management, “high-threat” potential problems are identified along with the action that is to be taken on each high-threat potential problem, either to reduce the probability that the problem will occur or to reduce the impact on the project if it does occur. This is also a good time to identify all project stakeholders and establish a communication plan describing the information needed and the delivery method to be used to keep the stakeholders informed.

Finally, you will want to document a quality plan, providing quality targets, assurance, and control measures, along with an acceptance plan, listing the criteria to be met to gain customer acceptance. At this point, the project would have been planned in detail and is ready to be executed.

### **Implementation (Execution) Phase**

During the third phase, the implementation phase, the project plan is put into motion and the work of the project is performed. It is important to maintain control and communicate as needed during implementation. Progress is continuously monitored and appropriate adjustments are made and recorded as variances from the original plan. In any project, a project manager spends most of the time in this step. During project implementation, people are carrying out the tasks, and progress information is being reported through regular team meetings. The project manager uses this information to maintain control over the direction of the project by comparing the progress reports with the project plan to measure the performance of the project activities and take corrective action as needed. The first course of action should always be to bring the project back on course (i.e., to return it to the original plan). If that cannot happen, the team should record variations from the original plan and record and publish modifications to the plan. Throughout this step, project sponsors and other key stakeholders should be kept informed of the project’s status according to the agreed-on frequency and format of communication. The plan should be updated and published on a regular basis.

Status reports should always emphasize the anticipated end point in terms of cost, schedule, and quality of deliverables. Each project deliverable produced should be

reviewed for quality and measured against the acceptance criteria. Once all of the deliverables have been produced and the customer has accepted the final solution, the project is ready for closure.

## **Closing Phase**

During the final closure, or completion phase, the emphasis is on releasing the final deliverables to the customer, handing over project documentation to the business, terminating supplier contracts, releasing project resources, and communicating the closure of the project to all stakeholders. The last remaining step is to conduct lessons-learned studies to examine what went well and what didn't. Through this type of analysis, the wisdom of experience is transferred back to the project organization, which will help future project teams.

### **Example: Project Phases on a Large Multinational Project**

A U.S. construction company won a contract to design and build the first copper mine in northern Argentina. There was no existing infrastructure for either the mining industry or large construction projects in this part of South America. During the initiation phase of the project, the project manager focused on defining and finding a project leadership team with the knowledge, skills, and experience to manage a large complex project in a remote area of the globe. The project team set up three offices. One was in Chile, where large mining construction project infrastructure existed. The other two were in Argentina. One was in Buenos Aires to establish relationships and Argentinian expertise, and the second was in Catamarca—the largest town close to the mine site. With offices in place, the project start-up team began developing procedures for getting work done, acquiring the appropriate permits, and developing relationships with Chilean and Argentine partners.

During the planning phase, the project team developed an integrated project schedule that coordinated the activities of the design, procurement, and construction teams. The project controls team also developed a detailed budget that enabled the project team to track project expenditures against the expected expenses. The project design team built on the conceptual design and developed detailed drawings for use by the procurement team. The procurement team used the drawings to begin ordering equipment and materials for the construction team; develop labour projections; refine the construction schedule; and set up the construction site. Although planning is a never-ending process on a project, the

planning phase focused on developing sufficient details to allow various parts of the project team to coordinate their work and allow the project management team to make priority decisions.

The implementation phase represents the work done to meet the requirements of the scope of work and fulfill the charter. During the implementation phase, the project team accomplished the work defined in the plan and made adjustments when the project factors changed. Equipment and materials were delivered to the work site, labour was hired and trained, a construction site was built, and all the construction activities, from the arrival of the first dozer to the installation of the final light switch, were accomplished.

The closeout phase included turning over the newly constructed plant to the operations team of the client. A punch list of a few remaining construction items was developed and those items completed. The office in Catamarca was closed, the office in Buenos Aires archived all the project documents, and the Chilean office was already working on the next project. The accounting books were reconciled and closed, final reports written and distributed, and the project manager started on a new project.

### **PERT and CPM: Techniques of Project Management (Advantages and Disadvantages)!**

PERT and CPM are techniques of project management useful in the basic managerial functions of planning, scheduling and control. PERT stands for “Programme Evaluation & Review Technique” and CPM are the abbreviation for “Critical Path Method”. These days the projects undertaken by business houses are very large and take a number of years before commercial production can start.

The techniques of PERT and CPM help greatly in completing the various jobs on schedule. They minimise production delays, interruptions and conflicts. These techniques are very helpful in coordinating various jobs of the total project and thereby expedite and achieve completion of project on time.

PERT is a sophisticated tool used in planning, scheduling and controlling large projects consisting of a number of activities independent of one another and with uncertain completion times. It is commonly used in research and development projects.

**The following steps are required for using CPM and PERT for planning and scheduling:**

(i) Each project consists of several independent jobs or activities. All these jobs or activities must be separately listed. It is important to identify and distinguish the various activities required for the completion of the project and list them separately.

(ii) Once the list of various activities is ready the order of precedence for these jobs has to be determined. We must see which jobs have to be completed before others can be started. Obviously, certain jobs will have to be done first.

Many jobs may be done simultaneously and certain jobs will be dependent upon the successful completion of the earlier jobs. All these relationships between the various jobs have to be clearly laid down.

(iii) The next step is to draw a picture or a graph which portrays each of these jobs and shows the predecessor and successor relations among them. It shows which job comes first and which next. It also shows the time required for completion of various jobs. This is known as the project graph or the arrow diagram.

The three steps given above can be understood with the help of an example. Suppose, we want to construct a project graph of the simple project of preparing a budget for a large manufacturing firm. The managing director of this company wants his operating budget for the next year prepared as soon as possible.

To accomplish this project, the company salesmen must provide sales estimates in units for the period to the sales manager. The sales manager would consolidate this data and give it to the production manager.

He would also estimate market prices of the sales and give the total value of sales schedules of the units to be produced and assign machines for their manufacture. He would also plan the requirements of labour and other inputs and give all these schedules together with the number of units to be produced to the accounts manager who would provide cost of production data to the budget officer.

Using the information provided by the sales, production and accounting departments, and the budget officer would make the necessary arrangements for internal financing and prepare the budget. We have seen that the project of preparing the budget involves a number of activities.

## **PROJECT MANAGER**

### **1. Activity and resource planning**

Planning is instrumental for meeting project deadlines, and many projects fail due to poor planning. First and foremost, good project managers define the project's scope and determine available resources. Good project managers know how to realistically set time estimates and evaluate the team or teams' capabilities.

They then create a clear and concise plan to both execute the project and monitor its progress. Projects are naturally unpredictable, so good project managers know how to make adjustments along the way as needed before the project reaches its final stages.

## **2. Organizing and motivating a project team**

Good project managers don't get their teams bogged down with elaborate spreadsheets, long checklists, and whiteboards. Instead, they put their teams front and center. They develop clear, straightforward plans that stimulate their teams to reach their full potential. They cut down on bureaucracy and steer their teams down a clear path to the final goal.

## **3. Controlling time management**

Clients usually judge a project's success or failure on whether it has been delivered on time. Therefore, meeting deadlines is non-negotiable. Good project managers know how to set realistic deadlines, and how to communicate them consistently to their teams.

They know how to effectively do the following:

- Define activity
- Sequence activity
- Estimate the duration of activity
- Develop a schedule
- Maintain a schedule

## **4. Cost estimating and developing the budget**

Good project managers know how to keep a project within its set budget. Even if a project meets a client's expectations and is delivered on time, it will still be a failure if it goes wildly over-budget. Good project managers frequently review the budget and plan ahead to avoid massive budget overruns.

## **5. Ensuring customer satisfaction**

In the end, a project is only a success if the customer is happy. One of the key responsibilities of every project manager is to minimize uncertainty, avoid any unwanted surprises and involve their clients in the project as much as is reasonably possible. Good project managers know how to maintain effective communication and keep the company's clients up-to-date.

## **6. Analyzing and managing project risk**

The bigger the project is, the more likely there are to be hurdles and pitfalls that weren't part of the initial plan. Hiccups are inevitable, but good project managers know how meticulously and almost intuitively, identify and evaluate potential risks before the project begins. They know how to then avoid risks or at least minimize their impact.

## **7. Monitoring progress**

During the initial stages, project managers and their teams have a clear vision and high hopes of producing the desired result. However, the path to the finish line is never without some bumps along the way. When things don't go according to a plan, a project manager needs to monitor and analyze both expenditures and team performance and to always efficiently take corrective measures.

## **8. Managing reports and necessary documentation**

Finally, experienced project managers know how essential final reports and proper documentation are. Good project managers can present comprehensive reports documenting that all project requirements were fulfilled, as well as the projects' history, including what was done, who was involved, and what could be done better in the future.

Do you need a project manager?

No matter how large or demanding projects are, you need someone who will reliably and consistently maintain efficiency and productivity. Not only has research shown that 89% of high performing organizations include a project manager, but also that the profession is consistently one of those most in demand. Project management is indispensable to successful businesses, and business owners need leaders with the right vision, the right skills, and the right know-how to face the biggest challenges and ensure projects are completed successfully and according to schedule.

Project managers are integral parts of almost every kind of organization—from small agencies with only one project manager guiding a handful of projects to multinational IT companies that employ highly specialized project managers



placed in charge of ambitious projects. If one of these describes your business or any kind of enterprise in between, then the answer is definitely yes.

## Assessment of Tax

Assessing the tax burden on “old” versus “new” capital The assessment of the corporate income tax burden on firms operating in a given country essentially involves an analysis of the taxation of income earned on assets held at the corporate level – including financial capital (cash, bonds, stocks), physical capital (buildings, machinery and equipment), land, inventory capital, and intangible capital (patents, trademarks).<sup>3</sup> In making this assessment, a key distinction is between the income tax burden on existing capital assets, as compared to the burden on a prospective investment. This distinction between tax burdens on “old” versus “new” capital is critical for policy analysis purposes on account of two considerations. First, an assessment of the tax burden on existing or “old” capital is particularly relevant to tax policy questions concerning equity in the tax system, whereas an assessment of the tax burden on “new” capital is particularly relevant to analysing investment incentives and related policy goals. Second, the measured income tax burden on the existing capital stock will often differ significantly from that on newly acquired capital. The differential tax burden on “old” versus “new” capital arises as the existing capital stock in the corporate sector consists of a mix of financial and non-financial assets of varying types, vintages and tax attributes acquired in the past. Consider first the fact that corporate tax owing in the current period on income derived from that existing capital stock will depend on the particular mix of assets held. Thus so too will the amount of corporate tax payable per unit of income generated. Therefore, historic average tax rates measured as corporate tax liabilities as a percentage of economic profit will differ from the effective corporate tax rate on capital acquired at the margin (or a weighted average of such marginal tax rates) to the extent that the prospective investment (or a weighted average of prospective investments) consists of a different asset mix subject to varying tax treatment, including particular tax subsidies. Tax

depreciation rates vary across capital asset classes, certain types of income may be drawn into the tax base at different inclusion rates, different rules will typically apply to income earned on domestic versus foreignsource income, and so on. An assessment of the tax burden on the existing capital stock may provide a misleading indicator of the tax burden on newly acquired capital on account of other provisions that operate to link one tax period to the next. One of the most important factors in this respect is the tax treatment of losses. Most tax systems allow businesses to carry non-capital (business) losses forward to offset tax payable in future years, in recognition of the fact that the tax year (i.e., a 12-month assessment period) is an artificial construct.<sup>4</sup> Differences in tax burdens on old versus new capital tend to be even more pronounced where tax policy changes over time, as it often does. Consider for example the implications of a reform where accelerated depreciation schedules are replaced with rates that more closely reflect economic depreciation, in which case the tax reducing effects of the old depreciation regime would tend to understate the tax burden on new investment. The tax burden measurement for income derived from depreciable capital purchased in prior years, written-off for tax purposes at rates that differ markedly from depreciation rates applied to capital purchased in the current period, would not be representative of the tax burden on new investment.<sup>5</sup> In short, the fact that the income tax liability of a corporation, or a group of corporations, in a given year is an amalgam of tax considerations relevant to income generated on existing capital stock – which may differ for a number of reasons from the tax considerations relevant to a prospective investment – means that corporate tax liabilities measured in a prior year (or even in the current year) relative to (adjusted) financial profit may be a highly misleading indicator of the tax burden on “new” capital, and vice-versa. These points are taken up and elaborated below in Sections 6.4 and 6.5, which address the choice among alternative tax burden measures for tax analysis purposes.

Assessing the corporate tax burden, from an equity perspective

The design of corporate tax policy often involves a balancing of revenue, equity, efficiency and “competitiveness” and perhaps other considerations (e.g., simplicity), with different groups holding different views over what the appropriate balance is, how that balance should be achieved, and how the resulting corporate tax burden should be measured. Virtually all would agree that corporations should bear at least part of the tax burden. Corporate-level taxation is necessary to avoid tax deferral possibilities that would otherwise exist. And equity considerations recognise that corporate entities, not just individuals, benefit from public expenditures including infrastructure development and costs in administering legal and regulatory frameworks. Furthermore, corporate taxation permits source country taxation in the case of taxexempt and non-resident investors who might otherwise avoid contributing their share towards public expenditure in support of business activities. In measuring the corporate tax burden to address equity concerns that the corporate sector is currently paying its “fair share”, the approach generally taken is to determine corporate income tax liabilities as a percentage of (adjusted) corporate-level profit derived from the existing corporate capital stock. The particular asset mix that gives rise to current period tax liabilities is generally irrelevant, with a focus only on the total amount of corporate tax paid in relation to corporate profit – in the sense that a “buck is a buck” raised from the corporate sector.<sup>6</sup> Given the lags with which corporate tax and profit data are compiled and made available, reference generally must be made to data measured in prior years (e.g., the most recent year in which the requisite data is available). Turning to a consideration of possible tax measures, it is clear that the nominal corporate tax rate cannot be used in isolation to assess the tax burden on corporations. This stems from the basic fact that the tax liability of a corporate entity and of the corporate sector as a whole depends on a range of provisions impacting on the tax base, in addition to the nominal rate.<sup>7</sup> Aggregate tax-ratios are a common yardstick by which tax systems are assessed. Since they were published for the first time in 1973, the OECD Revenue Statistics have consistently reported aggregate tax revenues as a percentage of gross domestic product (GDP.) Also shown are corporate taxes as a percentage of GDP, personal taxes as a percentage of GDP, and similar ratios for other broad tax aggregates. However, tax-to-GDP ratios may provide misleading indicators of tax burdens. As reviewed in Chapter 3, corporate tax-to-GDP ratios are problematic, as the ratio fluctuates with changes in the share of corporate profits in GDP, even with the share of corporate tax in corporate profit

held constant. First, both measures assess tax liabilities on newly-acquired capital only. The resulting tax rate measures will probably misrepresent the tax burden on previously installed or “old” capital, for the reasons noted in Section 6.3. Second, ATRs derived from project analysis and METRs derived from equilibrium conditions reflect the tax burden tied to a set of assumptions (e.g., relating to rates of return, financing and distribution policy, loss carryover/utilisation rates, expected inflation and interest rates) that may not be representative of actual values determining past (or current) period profit levels, investment patterns and taxes paid. Also, the choice over the weights used to obtain an average of individual project ATRs or METRs (each derived for a different mix of assets and industry), representative of the tax burden on capital at corporate level for the economy as a whole, would necessarily be an arbitrary exercise. Policy Relevance of Alternative Tax Burden Measures 71 © OECD 2000. Moreover, such measures typically overlook possible tax-planning techniques that in practice may lower the tax burden far below that implied by simple financial structure assumptions. Despite the fact that such models can be run under alternative sets of assumptions on key variables, they provide a highly stylised and therefore limited measure of the actual tax burden on firms, which can only be fully captured with reference to actual corporate taxes paid. In summary, of these potential measures, in general the best indicators of the income tax burden on corporations are backward-looking profit-based ATRs, derived using firm-level or aggregate data on actual taxes paid. The measures are more reliable where profits are adjusted to correct for accounting practices which open up a gap between profits reported in book accounts and true economic profits, and where profits are further adjusted to ensure consistency between numerator and denominator amounts (primarily in relation to the treatment of losses and foreign source income) and to correct for inflation. Such figures should be interpreted taking into consideration the fact that they are “first incidence” measures that do not account for the possible shifting of corporate tax liabilities onto consumers (through higher prices) and workers (through lower wages).