

Take the PMBOK to the Bank: How Project Management Expertise Can Help Finance Projects

David L. Pells

ABSTRACT

This paper discusses how professional project management can contribute to the financing of projects. Specifically the author describes how to address various PMBOK topics during the pre-investment project planning, development and financing stages, primarily to reduce project completion risks. Project owners and sponsors can benefit from applying this approach. Investors and bankers will appreciate better project planning which reduces risks. This paper identifies how the investment process can be improved, with the help of project management professionals.

INTRODUCTION

The main purpose of this paper is to stimulate further research in the project investment and pre-investment stages of projects. Project financing, and the project investment decision, are not aspects of projects with which project management professionals and practitioners have normally been involved. The reasons for this may be obvious. Project management has historically been concerned about the implementation of a project, after the investment decision has been made. However, the return on investment in a project, and many other issues addressed during the project financing process, will depend on the management of the project during implementation. At the same time, project management success during implementation can be affected by the objectives, decisions and features of the project established during the investment/financing process. This paper provides a very summarized look at some of the issues associated with project finance, namely how to address certain aspects of risk during the investment process using project management perspective and expertise.

A large body of knowledge exists in the banking and finance sectors, with regard to financing projects. However, just as in the project management field, new developments and approaches are occurring in international banking as well. In the case of project finance, a project's life cycle included not only implementation but also operation and retirement of the asset. A strategic view of projects is needed, where the results of successful project management are related to the overall success of the enterprise. (i.e. completing a higher quality project or product before the competition can increase market share and cash flows, thus increasing profitability and return on investment, for example). Yet, this too raises questions. For instance, what if we get to market sooner but with an inferior product? What if the technology used is obsolete before the project is completed? What if currency devaluations or fluctuations in the financial markets require the project to be delayed during construction/production? What is the effect on our share price (company value) if this project is successful or fails? Etc.

The future of project management is directly tied to the future of projects. While we promote advances in the management of projects, it is equally important to advance the processes and

techniques associated with analyzing, selecting, structuring and financing projects. Many issues determine the success of a project, many of which can be identified and addressed at the very beginning, during the project financing stage.

PROJECT FINANCE

In international banking, the term “Project Finance” has taken on specific meaning in recent years. Initially associated with large capital projects in developing countries, project finance simply means that a project is financed based on its own merits and projected cash flows, not based on the balance sheet of the sponsoring organization(s). Project finance became popular in the nineteen eighties, when government organizations and major corporations began seeking ways to initiate and fund large infrastructure projects in developing nations.

For instance, “over the past few years, the balance of attention has switched from the relatively simple business of arranging export credits and syndicated loans to more sophisticated analyses of costs and cash flows. This has been caused by two factors: 1) the debt crisis in the developing world, and 2) the trend towards privatization in the OECD countries. (Ball 1988). “Project finance translates simply as the financing of large-scale projects, and can include oil and gas, steel manufacturing, real estate or telecoms projects, where funding works on the assumption that the project will generate sufficient cash flow to enable both debt servicing and returns to sponsors” (Emmanuelle 1996)

Where classical lending for projects has always considered the financial strength and the balance sheets of the companies involved, this is not the case with modern project finance. “Conventional credit assessment has no place in classic project finance. Financing projects is a different matter.” (Ball 1988) Project finance is based on cash flow lending in which repayment is linked to individual transactions usually secured by specific assets. The lending only has limited support from, and recourse to, the project’s sponsor. Instead the project needs to live on its own merits. Project lenders will look at the specific assets of the deal, comparing them to the associated liabilities, including various forms of debt.” Most importantly, project lenders will look at cash flow from these assets, which will determine the project’s ability to service debt. In doing so, the lenders may decide to set stringent requirements that the project achieve specific targets before they release additional funds. These requirements could include specific completion dates, pricing and cost guarantees, customer sign up schedules, and quality and service-level commitments.” (Chehayl/Berger 1994)

“Project finance allows projects to go ahead that could not be supported from sponsor’s own resources. Sponsors like this approach since they can limit their financial commitment to a project, thereby reducing their own risks. Also, equity holders increase the potential return on investment due to the normal leveraging of project financing, which is normally a debt to equity ratio of 80:20. Project finance offers a route by which various equity partners can join together in a joint venture company and limit their individual risk.” (Bain 1996)

“The growth of project financing reveals the comparative advantages it can offer over financing supported directly by the sponsor. It can provide sponsors with access to a very large amount of funding while preserving their credit standing, and enables lenders and investors to take mitigated risks.” (Emmanuelle 1996) While this type of finance has distinct advantages for some sponsor groups, it can be more complicated to set up. (Bain 1996) “The

problem for bankers is that project finance is a riskier business than lending to a company, where they have the balance sheet as security. In the latter case, the bank has a claim on the company's assets should the project fail. In an off-balance sheet, project-financed scheme, the lending banks have only some or no call (limited, or non-recourse, financing respectively) on the sponsoring company's assets in the event of failure." (Bain 1996)

PROJECT FINANCING RISKS

General

Two general categories of risk exist on most projects: External risks and traditional project risks. External risks include country, political or regulatory risks, and currency risks. Project risks include construction/production risks, force majeure risks, operational risks, and unanticipated competition. "If a project is perceived to have significant risks in either category, it will jeopardize the possibility of a successful project financing." (Pita/Padilla 1996) Project (internal) risks might include changes in requirements, schedule risks, cost overruns, technology risks, organizational risks, key person risks, etc. (GPMBOK 1996) "The risks which must be identified include sponsor risk, completion risk, technology risk, availability of fuel supply, operating risk, environmental issues, and offtake/sales risks." (Bain 1996)

"Banks often finance 70-80% of construction finance, but insurers may only cover 40-50% of the risks. The "unmanaged risks" might include market risk, schedule risks, cost overruns and political risks." "Risk management can make large construction projects more attractive to banks". By identifying all the risks involved in the construction of large capital projects, the risk manager can help find ways to fill gaps in coverage, either through the traditional insurance markets or alternative risk-financing methods." (Howard 1996)

Risk phases include 1) engineering and construction (or production), 2) commissioning, and 3) operations. Operational risks include resources, input or throughput risk and market risk." "The highest risks are at the end of the first phase, when costs are highest and no cash flow is yet being generated. There are political and force majeure risks throughout a project. "Identifying and quantifying risks and then structuring the deal to allocate these among participants is a pivotal part of project finance. A detailed evaluation of every single aspect of the project – from sponsor to the political environment – is required." Then each risk is dealt with in turn. (Emmanuelle 1996)

External Risks

External risks relate to uncertainties beyond the control of the project team, such as market shifts or government actions. Country, political and regulatory risks include changes in regulatory policies or laws, economic and political instability, and currency devaluations. "Currency risks arise whenever revenues, expenses, capital expenditures and debt financing are in more than one currency." (Pita/Padilla 1996)

Various mitigation strategies can be implemented to address external risks. For instance, "Develop natural foreign-exchange hedges by raising part of the financing in the currency of production or one that's closely aligned to it". Flexibility in choosing production sites or equipment vendors can increase financing flexibility and reduce risks. "Local working capital

financing “provides a “partial natural hedge against local revenues, which is particularly important in volatile exchange-rate environments where hedging instruments may not exist.” (Chehayl/Berger 1994)

External risks exist in all countries, including the USA. While political uncertainty and currency risks may be greater in developing countries, even in the USA consideration must be given to local laws, environmental regulations, tax and investment laws, public opinion and other external factors. For major projects outside of the USA, which are sponsored by US companies, political risk insurance can be obtained from US government and commercial sources, which cover some but not all political risks. Multi-lateral financial institutions such as the International Bank for Reconstruction and Development, can also assist in this regard on international projects.

Project Completion Risks

Project risks can be separated into project completion risks and operating (cash flow) risks. Project completion risks are those which are generally addressed by project managers, and can include uncertainties associated with every aspect of the project. Common categories of project completion risk include technology risks, sponsor risks, supply risks, contract risks, cost and schedule risks, etc.

Technology risks. A fine balance is often needed between technology that is advanced enough to provide the project with competitive advantage, but not so advanced that additional development is needed. Sponsors should be prepared to demonstrate that:

- the technology has a good track record
- the contractor building the project has experience with the technology
- the adequacy of the guarantees/warranties which have been negotiated,
- the ease with which maintenance and component replacement can be carried out,
- that the availability/efficiency levels predicted can be easily achieved. (Bain 1996)

Technology/fuel risks include the risk that the proposed technology will not be competitive in the future (due to the choices of fuel for power plants, for example). (Pita/Padilla 1996)

Sponsor risk. Two aspects of the sponsor(s) concern the banks: 1) will they see the project through?, and 2) can they make the project work? Commitment to the project is usually measured by the equity contributions. Banks will also be looking for sponsors with technical and financial “depth” who can turn a project around if it runs into trouble. (Bain 1996)

Input/supply risks. Sponsors need to demonstrate the security of the fuel supply and the price. (Bain 1996) “Get suppliers to be responsible for completion contracts. The result of carefully managing all of your suppliers is low-cost financing, passing some risks on to your suppliers and, when you diversify your suppliers, reducing your overall completion and quality risks. And by sharing your equipment-procurement risks, your chance of a successful project-finance structure increases substantially.” (Chehayl/Berger 1994)

Contract risks. Each of the contracts necessary to construct and operate a project, such as the construction contract, the operations contract, the fuel supply contract and the site lease also present difficult issues that must be assessed. For example, the cost-plus type contracts frequently used in Latin American countries have serious defects and represent enormous construction risk. Contracts for fuel, water or other commodities also must be carefully analyzed. (Pita/Padilla 1996)

Cost/Schedule risks. Banks will be sensitive to the risk that a project will fail before generating any revenue. Banks will often require some kind of external recourse until completion, for instance with insurance or joint venture partners. Lenders will focus on the cost-overrun and time-delay aspects of the completion risk in great detail, since this is the time of greatest risk for the lender. Lenders will face total write-off if a project produces no cash flow. It will seek to minimize this risk by strategies such use of fixed price contracts. Lenders will also analyze contractors for financial soundness and whether they are covered by performance bonds or third party sureties. Sponsors should demonstrate that pre-completion risks are on the one hand modest, and on the other hand that everything possible has been done to minimize these risks or lay them off onto other parties. (Bain 1996)

Banks will require project sponsors to address all risks, and may require sponsors to change aspects of the project structure to minimize lenders' exposure. (Bain 1996)

Project Operating & Cash Flow Risks

Operating risks. Banks want a stable and reliable cash flow from the project once it is up and running. They will be looking for a skilled and experienced operating team. Lenders will often be more comfortable if a third party O&M contractor is employed by the sponsor, because additional operating experience can be brought in but also because the O&M costs can be contractually fixed. Also, sponsors should be careful with their estimates of outages and productivity. It is better to use easily attainable levels of efficiency. (Bain 1996)

“The most important undertakings in a project are the contracts which represent the obligation to make a payment to the project on the delivery of the project's output, because they are the key to a project's cash flow”. “Critical aspects of these long term contracts are the protections against deterioration in the credit worthiness of the output purchaser.” “It is also important to analyze whether prices or tariffs will cover project costs.” “Another important issue that may affect cash flow is the treatment of force majeure events. These events may include such things as drastic government action, acts of war, invasion, embargo, riots, insurrections, failure to renew or grant necessary authorizations or consents, and changes in law, particularly environmental or tax law.” (Pita/Padilla 1996)

“Banks are intensely interested in all aspects of the offtake or sales risk, since these affect cash flow. Banks will not accept “volume risk”, the risk that the produce will find no buyer. Acceptance of “price risk” depends on the maturity of the market and the volatility of prices. An output purchase agreement, or contracts in hand, are a plus. (Bain 1996) Risks related to the cash flow after operations or sales begin are the most important issue to most investors, since this is when debt will be repaid and returns realized.

Summary of Project Risks

In summary, successful project financing requires extensive analysis and evaluation of the project and its risks, in light of the aims of the parties' allocation of the risks to the various project participants, and evaluation of their ability to perform their contractual obligations. (Pita/Padilla 1996)

By being prepared for financiers' demands for risks to be identified and insured effectively, prospective project sponsors can comply more easily with the requirements of bankers, thereby speeding up the financing process. If projects are off-balance sheet project financed, then banks will be much more stringent in checking whether the insurance arrangements are correct. Financiers will want to see that the risks to the project have been identified, analyzed and evaluated at the earliest possible stage of planning, and those that cannot be otherwise controlled have been adequately insured or are within the project company's ability to self-insure. (Bain 1996)

USE OF GPMBOK TO REDUCE PROJECT FINANCING RISKS

PMI's Guide to the Project Management Body of Knowledge (GPMBOK) offers a good model for identifying many uncertainties associated with project completion risks, and provides a systematic approach to quantifying, analyzing and managing those risks. The GPMBOK, which is widely recognized throughout the world by project management professionals, identifies and describes generally accepted knowledge and practices related to the management of projects. It includes discussion on the management of project life cycles and integration, scope, time, cost, quality, human resources, communications, risks and procurement. The GPMBOK is used as the basis for PMI's "project management professional" certification program. (PMI 1996)

The GPMBOK can be extremely useful during the project planning process. With respect to project finance, the chapter on Risk Management should be used to address all aspects of the project, since it provides a process and guide to identifying, quantifying, mitigating and managing risks. (PMI 1996) As recommended in the GPMBOK, use of a checklist can simplify the risk identification process. A checklist or set of questions derived from each of the chapters in the GPMBOK can be compiled, based on the nature of the project being financed. Aimed at identifying uncertainties and confirming the adequacy of project preparations, these questions might include the following:

- Is there an adequate feasibility study?
- Is there a project implementation plan?
- If so, does it adequately define project scope?
- Does the plan include a work breakdown structure?
- Does the plan include schedules, logic, critical path, and resources?
- Is the project management information system to be used identified?
- Are planning assumptions and constraints well defined?
- Is the Organization (Project Team) complete and organized?
- Are all necessary functions covered by project participants or organizations?
- Do participants have policies or systems to ensure quality and financial controls?
- Has historical information been incorporated into the cost estimate?

- Is there a project management plan, which describes how the project will be implemented and controlled?
- Is there a project acquisition plan, or contracting plan?
- What contracts are in place and are they adequate?
- How have project stakeholders been involved or considered, and how will they be managed?
- Is everything included in the cost estimate, including reserves and contingencies?
- What change control procedures will be utilized?
- What reporting procedures will be used?
- Who will be in control? Who will be the project manager during implementation?
- How have operational needs been factored into project planning and design?
- Does the project plan adequately address project startup, or transition to market?

By systematically addressing the issues in the GPMBOK during early project planning and definition, a more comprehensive risk assessment can result. Project finance requires more aspects of the project to be planned and organized prior to approval of funding and startup, often including the identification of project participants, contracts, sales agreements, insurance, implementation plans and operating (business) plans. The GPMBOK can provide a very useful tool for addressing these issues.

THE PROJECT FINANCING PROCESS

For successful project-financing, many companies must rely on a melange approach – that is, a blend of sponsor equity, local borrowing, MFI participation, Export Credit Agency (ECA) involvement, vendor financing, international debt/equity financing, derivative products to hedge exposure, and so on. “What makes it work is the uniqueness of the most advantageous combination of financing sources available given the time, the place, the nature of the project and the players involved.” (Chehayl/Berger 1994) Project finance often involves a mix of financing: aid finance, lease financing of equipment, commercial loans, construction loans, customer/contractor finance, equity, investment funds, venture capital (Emmanuelle 1996)

The 1st stage in structuring a project financing arrangement is fairly standard: A sponsor establishes a vehicle company through which to channel funds and accomplish a project.”

The 2nd stage includes financial engineering: risk analysis, sources of finance, accounting and tax considerations, and recourse options” (Emmanuelle 1996) “Today, financing large-scale projects can often be more complex than executing them. But complexity and flexibility are the strengths behind the project-finance approach.” (Chehayl/Berger 1994) “Completion of project finance is often delayed by the mismatches between the needs of sponsors, financiers and insurers. By being forewarned of the requirements of bankers, prospective project sponsors can speed up the process and get on the ground before their competitors.” (Bain 1996)

The project financing process is fairly straightforward, though not easy. As the above references and quotations suggest, successful project financing requires thorough planning, complete assessment of the risks involved, sophisticated financial structuring, and complete documentation. And sometimes that is not enough. Teaming with well-established or respected partners, corporate or government guarantees, insurance coverage, hedging and

other enhancements may also be needed, depending on the type, nature or location of the project.

THE PROJECT FINANCE PACKAGE

The importance of thorough and comprehensive documentation in support of project financing proposals cannot be over emphasized. With project finance, bankers and investors are sharing the risks with the project sponsor. Therefore they want to reduce those risks as much as possible. In 1994, the U.S. Export-Import Bank launched a new Project Financing Division and project financing process in support of US companies involved in developing major projects in other countries. In support of their project financing process, and application, EXIM developed the requirement for an extensive project finance package of documents, including technical feasibility studies, complete financial analysis, preliminary contracts with major participants, background and historical information on the sponsors, copies of licenses and agreements, off-take contracts and purchase agreements, project implementation plans, insurance policies and project risk assessments. Other financial institutions require similar documentation. Projects for which complete project finance packages, including project implementation plans and risk assessments, have been completed are much more likely to be well received by international banks and investors, and to make it to the second round of discussions.

ROLE FOR PROJECT MANAGEMENT PROFESSIONALS

“A few big banks have developed the in-house resources to provide advice and financial support throughout a project’s life. In 1995, the top project financing banks included Chase Manhattan, ABN Amro, Societe Generale, Citicorp, Fuji Bank, Banque Paribas, and Banque Nationale de Paris.” (Emmanuelle 1996) However, “in order to protect their interest, most banks and investors employ independent risk and insurance advisors to assess project risks, as well as other advisors to scrutinize other aspects of the project”. (Bain 1996)

Some large corporations have also developed in-house project financing expertise, including Bechtel, Exxon, Westinghouse, ABB, Sprint, and AT&T. In addition, there are now a number of project development companies which utilize the project financing approach, especially in power, real estate and O&G. (Emmanuelle 1996) But most project owners or sponsors need advisors for project financing transactions. Project finance advisors should have the necessary technical expertise, banking contacts, track record and innovation to “stitch together complex financial engineering”. (Emmanuelle 1996)

Project management professionals and experts are most useful for project sponsors, who need to develop the project plans, risk assessments and other documents prior to presentation to funding sources. Project management expertise, however, can be useful to all parties, since a broad understanding of project management issues and risks over the entire project life cycle is necessary for both managers and investors. Project management professionals who have been certified by the Project Management Institute (PMI) can provide additional expertise, based on their knowledge and use of PMI’s GPMBOK.

CONCLUSION

Historically, project management experts have gotten involved in projects after the project investment decision has already been made, often by investors, bankers and executives who may not have backgrounds or in-depth experience in project management. That is, many critical investment decisions are made without a full understanding or assessment of all of the risks associated with various stages of project implementation. In many cases, project risks may be covered by insurance or legal documents. Many investment risks, however, require a more comprehensive approach, including thorough project planning, appropriate contracting methods, organizational teaming and professional staffing, advanced cost and schedule control methods, efficient information processing, effective environmental and safety planning, quality assurance programs, global communications capabilities, and even professional risk management programs. In other words, project investment risks can be reduced by strategically addressing the various elements of PMI's Guide to the Project Management Body of Knowledge (PMBOK) at very early stages of a project.

As the global economy continues to expand, along with industries, organizations and technologies, thousands of projects are being considered, planned, financed and initiated worldwide. Investment decisions are being made which effect billions of dollars, thousand of jobs and hundreds of organizations. Many of these investment decisions are made with inadequate project information or documentation, or are delayed due to uncertainties or risks associated with incomplete planning or preparation. In many cases, banks and investors may lack good criteria or procedures for fully evaluating certain types of projects, especially those in developing economies. In these cases, opportunities exist for project management experts to assist in the project financing process, by identifying project risks over the entire life cycle of the project and by identifying and planning for solutions based on proven professional project management theory and methodology. Project management professionals can assist both the project sponsors and funding organizations to reduce investment risks. Tides of future change will require that project management professionals take a more active role in all phases of a project, including the earliest pre-investment and financing stages.

REFERENCES

A Guide to the Project Management Body of Knowledge, PMI Standards Committee, Project Management Institute, Newtown Square, Pennsylvania, USA, 1996.

Project Criteria and Application Information Requirements, attachment to fact sheet entitled *A New Approach to Project Finance*, Project Finance Division, Export-Import Bank of the United States, 1994.

Bain, Fergus, Project Finance Risks - Getting It Right First Time. *Modern Power Systems*. April 1996. v.16. n.33.

Ball, James. Understanding the Mechanism (Project Financing). *Euromoney*. Aug. 1988. p. S8 (3).

Bull, Michael P., and Savage, Keith H., Financing the Project. Chapter Nine in *Project Management Handbook*. Dennis Locke, ed. Gower Technical Press Ltd. 1987. Pp169-187.

Chehayl, Peter W. and Berger, Edward E., Sprint to the Finish on Financing Projects. *Financial Executive*, Jan.-Feb., 1994. v.10 n.1. p.17 (5).

Gonzalez-Pita, J. Alberto, and Padilla, Santiago J., Charting a Course: Analysing and Mitigating Project Risk. *Latin Finance*. March 1996. n.75 . p.16C (3).

Howard, Lisa S., Good RM seen Luring Bank Funds (Risk management crucial in attracting financing for construction projects). *National Underwriter Property & Casualty – Risk & Benefits Management*. Dec.9, 1996. n.50 . p.7 (2).

Martin, Thomas J., Nine Ways to Kill a Financing – or Any Major Negotiation. *The Business Owner*. Jan.-Feb. 1995. v.19. n1. P7 (3)

Moors de Giorgio, Emmanuelle, The Name of the game is risk (Project Financing), *African Business*, June 1996, n211. P26 (2)

Pells, David; How to Finance any project in Russia; *Modern Project Management: Unification of Professionals for Individual Success*, Proceedings of the International Project Management Symposium in St. Petersburg, Russia, The Russian Project Management Association (SOVNET), Moscow, Russia, September, 1995.

Souder, William E., Selecting Projects that Maximize Profits. Chapter Seven in *Project Management Handbook*, 2nd Edition. Edited by David I. Cleland and William R. King. Van Nostrand Reinhold. NY. 1988. pp.140-164.

About the Author



David L. Pells

Managing Editor, PM World Journal
Managing Director, PM World Library
Addison, Texas, USA



David L. Pells is Managing Editor of the ***PM World Journal*** (www.pmworldjournal.net), a global eJournal for program and project management, and Managing Director of the PM World Library (www.pmworldlibrary.net). David is an internationally recognized leader in the field of professional project management with more than 35 years of experience on a variety of programs and projects, including energy, engineering, construction, defense, science, transit, high technology and nuclear security, and project sizes ranging from several thousand to ten billion dollars. He has been an active professional leader in the United States since the 1980s, serving on the board of directors of the Project Management Institute (PMI®) twice. He was founder and chair of the Global Project Management Forum (1995-2000), an annual meeting of leaders of PM associations from around the world. David was awarded PMI's Person of the Year award in 1998 and Fellow Award, PMI's highest honor, in 1999. He is also an Honorary Fellow of the Association for Project Management (APM) in the UK; Project Management Associates (PMA - India); and Russian Project Management Association SOVNET. From June 2006 until December 2011, he was the managing editor of the globally acclaimed PMForum.org website and the *PM World Today* eJournal. He occasionally provides high level advisory services for the US government and on major programs. David has published widely, spoken at conferences and events worldwide, and can be contacted at editor@pmworldjournal.net.