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## How Can the Trade off between Corporate Business Strategy and Project Risk be Optimized?

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### Abstract

The biggest challenge for business leaders today is making sure initiatives that are undertaken at the project level are aligned with the strategic and financial goals of their organizations. Unfortunately, business leaders who recognize the need to use tools to validate the business case of every initiative are finding relatively few truly viable options. Organizations are looking to implement a project and portfolio management (PPM) solution to help ensure they pursue only those projects that provide the greatest business value with the minimum or accepted organizational risk. This paper provides a practical framework in aligning business opportunities with overall project risk through an assessment process from the strategy, technology exposure, organizational change management, and communication, financial, project organization, project management and project complexity point of view. In the proposed framework, if the project with an accepted risk matches the organizational business strategy, it will be forwarded for the rest of evaluation process in the Project Portfolio Management. To demonstrate the approach, a case study is conducted in one of the biggest Iranian Power Industry Contractors.

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### 1. Introduction

Organizations constantly have to transform themselves to continue growing in today's fast changing business environment. However, being strategically agile is not easy for today's leading automotive and

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energy companies, long accustomed to a period of industry consolidation and growth through increasing capacity. Business leaders need to revisit their organizational portfolio periodically to decide what will continue to be their core focus or competency and what to do with non-core businesses. Corporate strategy not only involves choosing the right plan for growth today, but also ensuring that the company can quickly react to dynamic marketplaces and competitive environments through a corporate portfolio management.

Successful organizations make large investment and capital allocation decisions using a robust approach that analyzes each option's 'risk-return trade-off' and reflects each option's overall impact on the existing portfolio. Poor investments, on the other hand, can result in share price depression, lost market share, departure of key leadership and negative media attention.

By incorporating a risk-return perspective into Corporate Portfolio Management, organizations will be equipped better to answer the following questions:

- How can risk be incorporated into the decision making process so that multiple investment options are consistently evaluated?
- Will the expected return in any single investment justify the level of risk required to pursue this option?
- What is the optimal combination of investment options to achieve our mid- and long-term strategic objectives?
- Where should I spend my next investment dollar?

This study provides a theoretical multidimensional framework to measure the performance of project portfolio management through the three criteria of Value or Return, Risk and Corporate strategy alignment, see Table 1. Many studies have been done and show the tradeoff between Risk and the value but how can a project alignment be calculated and considered in a portfolio management. So the aim of this article is measuring project risk and project alignment to the corporate strategy. The position of project value or return is included in two other criteria of project risk and strategy alignment in this study by evaluating fiscal area as one of the most important areas in the proposed framework, see Table 3.

Table 1. Three main criteria in the evaluation process of project portfolio management

Return	Risk	Corporate Strategy Alignment
Earning performance	Volatility of returns	New markets/ technology
Growth	Downside exposure	Consolidation/ Scale
Capital requirements	Correlations	New markets/ technology

## 2. Basic concepts of the study

Regarding that the basic concepts of this study have many kinds of interpretations on many occasions, a deeper understanding is required to better appreciate this study purpose.

### 2.1. Corporate Business Strategy

Business strategy is determined at the corporate level in a "deliberate" (i.e. planned) or "emergent" (i.e. reactive) response to the external business environment. The success of strategy is purely determined on how well it is executed. Projects serve as the vehicle to implement and execute the corporate strategy. Some firms are project-based organizations and recognize revenue by delivering on contractual projects. However, other firms may perform projects internally as a means to grow the company. In some cases,

both situations may exist. Regardless of whether or not projects are internal or external, the alignment of the corporate initiatives with the project components is critical to the long-term position of the company. Portfolio management provides the link between strategy and implementation of projects into the operational environment.

## 2.2. *Project Portfolio Management*

Since the 1950's the dominant corporate strategy has been diversification, providing multiple products to diverse customers. The modern corporation chooses which businesses will receive capital funds through its investment strategies. A diversified firm operates multiple businesses in diverse markets. The businesses constitute a "portfolio". Just as stockholders hold multiple stocks of diverse businesses in their portfolio, similarly a corporation manages a portfolio of projects as investments.

Intelligent organizations know that poor project selection may lead to ineffective use of resources. The challenge of portfolio management is to align strategic plans and to achieve a profitable balance between strategic goals, project risks and corporate capabilities. Project selection, therefore, should be carried out using sophisticated procedures, rigorously challenging all underlying assertions. This means that corporate portfolios must be developed in an audited process, with clear decision criteria and an accepted level of risk. Performance goals are intelligently monitored, preferably in real time, and adjusted where necessary to optimize resource utilization.

Portfolio Management seeks to answer the following questions:

- "Which projects should we start?"
- "Which projects should we continue?"
- "Which projects should we drop?"
- "What level of risks can we accept?"

Portfolio Management has a strategic interest in goal achievement, and therefore monitors performance goals. This assures operational projects stay in line with the strategic direction. Remember that the corporate portfolio is a collection of businesses and projects that execute the firm's strategy.

## 2.3. *Project Risk Management*

Management should first undertake a detailed risk assessment that includes identification and quantification of all material risks in order to provide a clear understanding of current volatility in each portfolio entity (e.g. business unit, region, facility, program).

In this assessment process, management must first focus on developing a comprehensive understanding of risks from all risk categories (financial, strategic, operational, and hazard). The goal of the risk identification exercise is to highlight the risks that can have a material impact on the value of the company. The second step requires that a risk profile be developed through a quantitative analysis (either top-down or bottom-up) of volatility in the projected financial performance, see Figure 1.

This type of assessment goes beyond the relative prioritization of key risks typically found on 'heat or risk maps' and offers quantitative risk metrics for use in decision making. In addition, this risk assessment highlights the cross-correlations between business units as well as new investment options, providing senior management with a more robust view of overall volatility and portfolio diversification effects.

The first step in operating risk management is to identify the risks to which the company is exposed. A common approach is to identify the types of risks that will be measured. In the early days of corporate risk management, financial institutions focused mainly on market and credit risks. Eventually operational risk was added. As a result, a common practice for this study is to classify all risks into eight categories, see Table 2.

For assessment of each risk area, there is a list of questionnaire and depend on the value options selection, an amount of risk rank will be assigned to each risk criteria. The average amount of the risk ranks will be the risk exposure of the project in each area, see Table 3.

Table 2. Risk breakdown structure - 8 categories

Risk Areas
Strategic
Technology
Organizational Change Management
Communication
Fiscal
Project Organization
Project Management
Project Complexity

### 3. The Proposed assessment framework

#### 3.1. Conceptual model

The suggested framework (see Figure 1) implies that portfolio management builds on a management system that integrates corporate strategy with project risk and profitability. Based on this framework, three sets of activities are interrelated with the project portfolio management. In other words, each face of the framework corresponds to the integration and interaction of portfolio management with two other organizational functions.

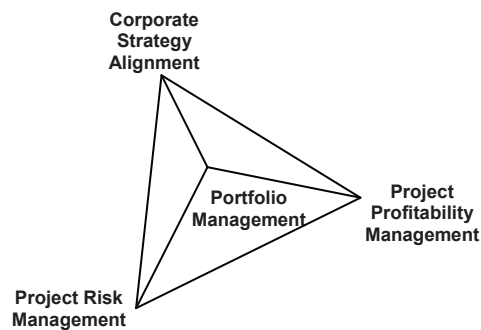


Fig. 1. The proposed framework for project portfolio management

One of the visible faces of the proposed framework represents the integration of portfolio management with corporate strategy and risk. That would imply a portfolio management system related to corporate strategy and risk management that are needed to exploit business opportunities. This face of the framework is the exact purpose of the paper and would be assessed in the next part. This face correspond to the strategic improvement projects of the organization which the profitability of the project is not the mail goal of the corporate. Therefore it can be considered as a fiscal risk in the process of risk management.

Another visible face of the framework corresponds to the integration of portfolio management with risk and value. Obviously, this face has been studied in many papers and there are many tools for the measuring the tradeoff between risk and return. The central idea of diversifying the portfolio is to manage risk and value creation at the same time, see Figure 2.

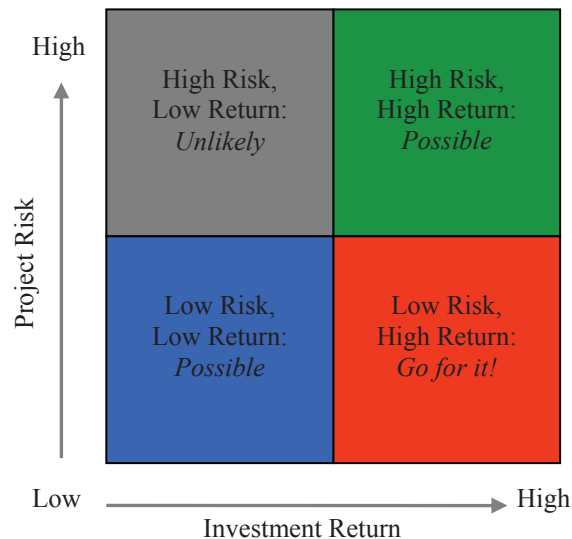


Fig. 2. Central idea of diversifying the portfolio: Managing risk and value creation

The true value and risk of a project is determined by the impact on the aggregated risk and aggregated value of the portfolio. Clearly, understanding the degree of correlation or dependency amongst the projects (all faced with uncertain futures) is essential to capturing full portfolio value.

The third face represents the integration of portfolio management with value and corporate strategy. Consequently, this concerns a portfolio management system that is related to creating and exploiting business opportunities through the generation and execution of profitable projects aligned to the corporate strategy.

This conceptual framework allows connecting the potential and realized value of a project with strategic objectives. Thus, the conceptual model is the basis to structure the information necessary for portfolio selection and for monitoring the implementation of projects. The goal of linking portfolio management to the strategy is to balance the use of resources to maximize value in executing strategic and operational activities.

The challenges of creating a premium portfolio include selecting new product development projects to achieve the following goals:

- Maximize the profitability or value of the portfolio.
- Minimize the portfolio risk.
- Provide balance to, and support for, the strategy of the enterprise.
- Respond appropriately to changes in the economy.

Achieving targets and the goals set by the leadership needs monitoring. That requires best practice, using the following processes:

- Keep checking the portfolio against strategic corporate objectives.

- Adjust to the company's working interest when required by lagging performance.
- Optimize resource utilization.
- Compare the portfolio performance with that of other viable portfolios.

### 3.2. Evaluation tool

The framework we are trying to introduce here has a focus on the trade off between project risk and corporate business strategies. This framework has been designed to support selection of the right project in Project Portfolio Management. Using this framework in project based organizations not only ensure the alignment of projects with corporate business strategy but also considers total project risk in the selection of the right project. In this framework all the proposed projects are assessed and evaluated from two different aspects. Two-criterion comparison grids, like the graph illustrated in Figure 3, are among the most utilized and effective graphical tools to compare components that must meet more than one selection criterion. A typical pair of criteria used by organizations is level of project risk (Criterion 1) vs. strategic alignment (Criterion 2). These two aspects provide a four quarter matrix that each project will locate in one of them according to the evaluation results. While having the least risk, projects that locate in quarter (1) are aligned the most with business strategy. These projects not only have the most chance to be implemented successfully but also will help the organization to fulfil the long term plans and objectives. The projects which locate in quarter (2) are mostly aligned with business strategies but they may face high risks that may hinder the success of the project in fulfilling the required results. In quarter (3), projects have low risk but their alignment with corporate business strategies is doubtful. Project which locate in quarter (4) are very dangerous for the organization. While their level of risk is very high they do not match with corporate strategies. These projects will only waste the resources of organization and their results for the organization are blurred.

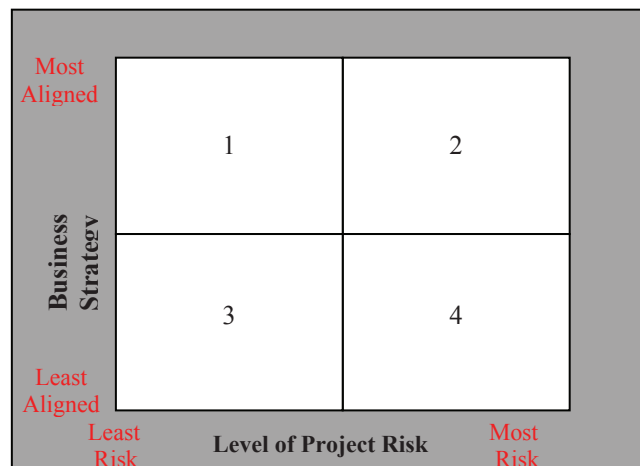


Fig. 3. Assessment Framework

Having this evaluation and categorization of the organization's projects will help decision makers to select the right projects but a very important question is that how can we evaluate and categorize the projects in a right way?

Table 3. The assessment tool

Evaluation area	Number of Questions	Question (Example)
Strategic	12	Have all project business requirements, objectives, assumptions, constraints, and priorities been defined and documented?
Technology Exposure	6	Does the agency have experience working with, operating, and supporting this technology in a production environment?
Organizational Change Management	9	Has a documented organizational change management plan been prepared for this project?
Communication	7	Have all required communication channels and interfaces been identified and documented?
Fiscal	16	Does the project have a clearly defined and documented business case that demonstrates measurable and tangible benefit to the agency?
Project Organization	9	Have all the roles and responsibilities for the project management team been clearly defined and documented?
Project Management	17	Has a project schedule specifying all project tasks, necessary checkpoints and critical milestones been defined and documented?
Project Complexity	10	Is the proposed system more complex than current agency systems?

The proposed framework is supported by a assessment tool that helps the organization to evaluate its projects in two aspects (Level of project risk Vs Amount of alignment with business strategy). This assessment tool is based on the evaluation of eight important areas that must be analyzed in selection process of a project portfolio management. These areas have been extracted from semi structured interviews with 16 senior managers from 3 of the biggest general contractors in Iran Power Plant Industry (IPPI). These areas cover most of the risks and opportunities that one project may face during its life cycle and include: (1) Strategic area, (2) Technology Exposure area, (3) Organizational Change Management area, (4) Communication area, (5) Fiscal area, (6) Project Organization area, (7) Project Management area, and (8) Project Complexity area.

To evaluate each area several questions (86 questions in sum) has been designed that should be answered based on a Likert scale. A workgroup of experts in all of these 8 areas must answer these questions in accordance to project available data. Table 3 summarizes number of questions in each area along with some examples from each area. Answers to these questions will calculate the level of project risk and the degree of project alignment with corporate strategies. There is a calculation method for this process through which the level of project risk and the degree of project alignment with corporate strategies will be measured and determined between 1 and 8. Each project will reflect on the framework according to these scores. For example a project with the level of risk from 1 to 4 and degree of alignment with corporate strategy from 4 to 8 will locate on quarter (1) while another project with the level of risk from 4 to 8 and degree of alignment with corporate strategy from 1 to 4 will locate on quarter (4).

#### 4. Case study results and discussion

The framework and evaluation tool introduced in previous section is designed and used in one of the Iranian biggest general contractors in the field of power industry.

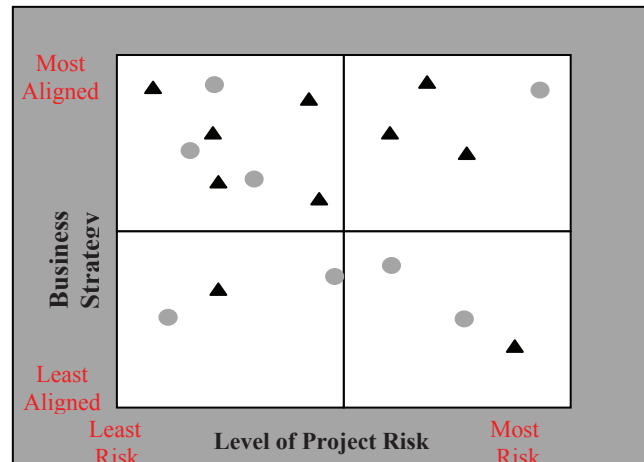


Fig. 4. Case Study Results

Mapna Group is an Iranian enterprise which operates in the area of construction and development of thermal power plants under EPC scheme, independent power plants (IPP), oil and gas as well as rail traction projects. Since its incorporation in 1993, Mapna Group has contributed to the engineering, manufacture of equipment and construction of power plants within the framework of commissioned, under construction and prospect projects scheduled to generate a total of 52000MW of electricity and constituting 86% of Iran's installed power plants capacity. The total contractual value of Mapna Group's projects in three spheres i.e. power, oil and gas and rail traction exceeds Euro 17 billion.

This framework was implemented as part of selection process in PPM to evaluate and select the best projects out of 8 newly proposed projects and also for evaluation of 10 ongoing projects which have recently been approved in this company. A questioner of 86 questions was prepared for each project and was answered by relative informants in each area. The result of using this framework in this company is shown in Figure 4. The ongoing projects are illustrated with ▲ and evaluation results of newly proposed projects are reflected by ●.

Results show that from 8 newly proposed projects, 3 projects are in quarter (1) and have the most potential to be more useful for the company. Also it is obvious that 4 projects are located in quarter (3) and (4) which have the least alignment with business strategies and 2 projects out of these 4 projects have also high level of risk for the organization (danger area). There is also 1 project in quarter (2) that has the most alignment with business strategies but they may face high level of risks. If the company can prepare a suitable risk management plan for this project, it could be good chance for the organization.

Although this framework should be used in selection of the right projects but comparison between 8 newly proposed projects and 10 ongoing projects shows lack of appropriate tools and processes to evaluate projects in Project Portfolio Management (PPM) have resulted in the selection and approval of 1 project out of 10 projects that are located in quarter (4). The organization could have replaced this project with other unapproved projects in quarter (1), (2) or (3).

## 5. Conclusion

While investment decisions should include the strategic concerns and management perspectives that pushed the company to initially investigate a given investment option, a risk-return quantitative analysis



ensures that management will neither overpay for the potential strategic gain nor underestimate the potential risks of any new investment.

In comparison to current risk-based decision making practices, the Corporate Portfolio Management approach provides the following benefits:

- Increased decision making transparency through a more consistent evaluation of all business units
- A consistent approach to risk measurement
- A clear enhancement to the due diligence process
- Better understanding of value creation among new investment opportunities
- Consideration of the correlation and diversification effects of the organization's different businesses and investment options
- Guidance for strategic planning (e.g. identification of where the company needs to move to improve its risk-return position)
- Consideration of qualitative and non-financial implications

These benefits can easily be recognized across most organizations, regardless of size or industry. Our experience has shown us that a great deal of the information and expertise required by the Corporate Portfolio Management approach is already available within an organization. The key is to ensure that management understands and continually evaluates the risk-corporate strategy alignment position of the business opportunities to create the most value in the long-term.

In this article, we have discussed how risk management and the corporate strategy alignment can be used for project evaluation in a project portfolio management (PPM).

Although the key principles that underlie the theory of the framework are well-established, it should be clear from this article that additional research is needed to help with the implementation of portfolio management. In particular, while much attention has been paid to measures of risk like VaR, it has become clear from attempts to implement risk management in a project portfolio management that a more simple technique for the risk measuring is quite a need for the organization.

The actual measurement of the risk in a portfolio depends on the tools, techniques and matrices utilized to measure the attributes associated with project portfolio management. Therefore, the integration of results obtained from using several techniques is a practical issue and is considered as an area of future research. This study can be extended in many ways both in qualitative and quantitative fields.

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