

Using Risk Management in the Front End of Projects

Gregory D. Githens, PMP, NPDP, Catalyst Management Consulting
Richard J. Peterson, Essilor of America, Inc.

Projects don't fail at the end; they fail at the beginning. However, many project managers plunge in, hope for the best, and later find themselves reacting to risk events and their consequences.

This paper describes general issues associated with identifying, selecting, and using front-end risk management tools. In particular, we will describe how organizations can improve project performance through front-end risk management by focusing on two tasks: *selecting appropriate tools* and *the supported application of the selected tools*.

We will illustrate with examples from Essilor of America, Inc. to describe experiences with selecting and applying front-end risk management. Essilor is a worldwide corporation, is firmly committed to excellence in innovation, and has achieved world leadership in ophthalmic optical products, offering a full range of vision-correction products including corrective lenses, instruments for opticians and contact lenses. In the 1960s Essilor designed and introduced two of the world's greatest optical innovations: the Orma CR39 organic lens and the Varilux® progress lens for presbyopes. Essilor is the founder of the first internet prescription laboratory for eye care professionals, and are universally known for the brand names of Airwear® polycarbonate lenses, Crizal® lenses, and the world's most successful progressive lens, Varilux® (one out of every two progressive lenses in the world is Varilux®). Essilor is involved in partnerships with important international players such as US-based PPG and Japan-based Nikon.

In the following sections, we will explore issues related to the adoption of front-end risk management tools. We will describe avoiding typical mistakes in new product development. We will describe how Essilor has adopted front-end risk management tools. We will then return to a more theoretical discussion of adaptation and adoption, and conclude with a discussion of benefits of front-end risk management.

Avoiding Typical Mistakes in New Product Development

At the project level, strategic means those decisions affecting "success and failure" of project objectives. We observe the best project managers and teams have a clear idea of the cause-effect linkage between enablers and successful outcomes. A key to success is mistake avoidance. A good front-end risk management

project capability will help to avoid common errors in development, which include the following:

- The tendency of project teams to plunge into projects without thinking things through. Many project teams approach the problem in a fragmented (rather than holistic) way, breaking the problem into smaller elements and then pay attention to those development elements that are in the individual's comfort zone.
- The tendency of project teams to focus on visible problems.
- The tendency of project teams to assume that a review will catch any problems or mistakes.

These tendencies manifest themselves in project performance in waste and ineffectiveness. First, errors of omission—a failure to perform basic project management practices—can lead to total project failure or significant rework. Second, we observe that most product performance problems occur at interfaces, not within the subsystems. Consequently, there is considerable rework and suboptimization of the project performance. Thirdly, as frustrations continue to mount in the project, the morale takes on a deathmarch-like tone; there is little satisfaction from work and the goal is just to survive the project. The best project managers and teams have a clear idea of the cause-effect linkage between enablers and successful outcome. We have repeatedly seen that highlighting risk and managing it is an excellent and proactive way to avoid the common frustrations of innovation projects.

Risk gets its greatest leverage in the front end. The front-end portion of the project is the period from authorization of the project to the point where the project team used planning to remove a substantial amount of uncertainty.

Essilor's Front-End Risk Management Process and Toolkit

New products are the instruments of an organization's business strategy. Risk and opportunity management are essential parts of innovation. Essilor's national and international markets are competitive, demanding quality and value. In order to remain a market leader, Essilor's management must accept certain project risks.

Essilor currently does business in over 100 countries, and has over 20,000 employees worldwide. The Essilor workforce is quite diverse and global. Essilor's process that embraces this diversity

Exhibit 1. Steps in Essilor Risk Analysis Process

1. List tasks (functions of the project work)
2. Describe potential fault(s) with that task
3. Describe the cause
4. Describe the effect
5. Assess the “capacity for correction”
6. Risk notation 1-10 for
 - Gravity (of the effect)
 - Probability (of the cause)
 - Manageability
7. Multiply values to obtain prioritization value = Gravity x Probability x Manageability

and this capability fosters the capture of ideas, issues, problems and solutions from a technical, cultural and political perspective.

Essilor performs basic project planning before starting to identify and assess specific risk events. This process includes a letter of intent (management authorization and commitment to proceed with the project), product specification, statement of work, and economic objectives. This ensures that project participants understand the goals and objectives.

The project manager drives the project risk management process, often acting as the team’s facilitator. The project manager has these responsibilities:

- Develop and negotiate a contract for project delivery that incorporates risk and opportunity data
- Conduct periodic risk reviews and maintain contingency and mitigation plans
- Assess and record the potential impact of the risk/opportunities
- Ensure compliance with business model objectives and company policy/procedure
- Advise management of project progress and the results of the risk/opportunity assessments.

After preparation is complete, the process of capturing risk/opportunity can begin. Essilor uses the Nominal Group Technique (NGT) to capture the unique insight from Essilor’s diverse experts. NGT works equally well in complex and simple projects. The NGT process is simple and if properly conducted will generate risk/opportunities very quickly. This method puts the focus on problems, not people. Additionally, it encourages open communication, active participation and tolerates periods of conflict or wild creativity.

Essilor has developed a software tool to encourage the standardized treatment of NGT data. The project enters the data in a software database. This tool was designed to allow maximum flexibility to capture risks by user-defined types (e.g., Cost, Schedule, Milestone, Phase, Quality, etc.), and provide a management, analysis and reporting system in one tool. This tool allows the manager to visualize his or her risks graphically and

linearly, in a ranked fashion. This feature is very useful, as it gives the project manager the ability to understand and react to the exposure horizon, even in large complex projects.

The goal of the project risk management process at Essilor is to rank and quantify risks for further management analysis and decision. Exhibit 1 lists the steps. This process has been refined over the years, emerging with a simplified approach that multiplies the variables together to come up with a prioritization value (Gravity x Probability x Manageability). The actual score is not as important as is the ability to rank the risks.

Essilor’s project managers have learned how to create results by influencing both team members and functional managers. Influencing is strongest with valid data, and the Essilor risk tool graphically shows how risk accumulates at certain times and in certain areas. This accumulation of risk originates in specific technical areas and business functions and affects them, too. The graphical display helps the project manager persuade functional managers of their need to support the project with proper resources in a timely fashion.

Once the project team has completed the front-end assessment, management can determine the desired course of action, and the level of risk exposure that the organization is willing to accept. Additionally, these actions form the foundation for the official launch of a project where the company and the team understand the baseline, and are prepared to more effectively manage the project and the risks throughout its life cycle. Because they have common language, personnel at all levels are required to provide clear and early warning of the potential project risks and are empowered to take action to manage risk.

The Essilor approach to front-end risk management emphasizes response planning to enable the project team to define the opportunity and avoidance areas. There are four generic risk response strategies for managing project risk: avoidance, transference, mitigation, and acceptance. Essilor primarily applies mitigation, as technical people populate most teams. Since the goal is always to maximize technical reliability, mitigation (reducing the probability or consequences of the risk event) is the preferred approach. Essilor project teams often use contingency planning as response strategy, too.

Effective front-end risk management requires the concerted efforts of the entire team during all phases of a project. Essilor project teams continue the risk and opportunity assessment process through the back end (completion phase) as well as the front end. Before launching the product, the project team needs to create or facilitate strategies for manufacturing and operations to include production, warranty, logistical issues, and resource management. Many of the same risk analysis and response planning tools are appropriate.

Adaptation and Adoption of Front-End Risk Management Tools

Essilor started with an initial strategy and modified it to the organization’s specific needs, resulting in the risk management

Exhibit 2. Other Front-End Techniques

Front End Tool

Common language

Prospective hindsight

What About

Risks versus Issues

Project Completion Criteria

Requirements walkthrough and definition

Project Acceleration Workshop/Strategic Project Planning

Description

Essilor for clear and consistent communications. For example, Essilor uses the PMBOK Guide's definition of risk as an uncertain event or condition that, if it occurs, has a positive or negative effect on a project objective.

Ask the project team to visualize and described project failure, and then imagine the causes of that failure

Brainstorming on "what are you concerned about?"

Defining concerns into different categories to apply different managerial responses

Define the criteria for successful completion of the project

Facilitated walkthrough of requirements to assure correct, complete, and unambiguous

Facilitated team planning

approach described in the previous section. Further, each project manager can tailor the degree of application to his or her project.

The following paragraphs describe four important factors to the adoption of front-end risk management: management push, tool championing, performance and metrics, and training.

Management Push

Essilor of America Inc.'s adoption of risk management was stimulated by requests from its international headquarters and development teams. There were two important reasons: First, Essilor needs the revenues and profits from new products to satisfy the investment community. Second, a global new product launch is very complex and there are a number of high-level and low-level decisions that affect performance. Risk is a way to assure that the right people focus on the right decisions.

A desire to refine risk management techniques and development tools has been an improvement initiative at Essilor for several years. In order to remain progressive and practical, Essilor has established specific teams that consist of internal expertise and outside advisors. These teams have directly influenced the process and tools used today.

Tool Championing

Exhibit 2 lists other techniques that have been used in Essilor. They emphasize elicitation. They focus attention on strategic outcomes, and enablers of those outcomes. These others have not been championed to the same degree as the software tool.

Performance and Metrics Focus

Essilor is increasing its focus on project performance and encourages people at all levels of the organization to think strategically about organizational outcomes and their personal contributions to the outcomes.

Training

The international use of risk analysis has increased with the use of multinational and global teams. To function in this new environment, Essilor requires project team members to participate in a three-step training approach that presents the fundamentals of Essilor's processes. This training has proven to be a key to the acceptance of risk management; and the benefits are now seen throughout all the functional organizations. The first training exposure is in an introductory course and includes about two hours of exposure to risk concepts. The second is a two-day risk analysis class. The third is on-the-job coaching and training. As a result, individuals increasingly understand that project planning is a process that has many purposes, one of which is the recognition and removal of uncertainty. In addition to improved project performance, managers and individual contributors take back new skills they can apply in their specific job.

Benefits

Risk management is an important activity for developing products quickly and maximizing value. Essilor and other organizations have recognized many benefits, including those listed below:

- **Senior Management Support**—Front-end risk management encourages the understanding of tradeoffs by senior management, including identifying marketing uncertainties and modeling risk in business plans. Thus, the organization can avoid further investment in high-risk, low-return product concepts.
- **Bottom Line Results**—Another benefit is shorter product development times. The development of worldwide risk management in projects has had a pronounced affect on Essilor's ability to meet the commitments to the business.

- **Completion Focus**—Front-end risk management encourages the project team to define the completion criteria of a project, and fosters critical thinking. In particular, it encourages the identification of critical product technology issues early in the project life cycle.
- **Team Buy In and Integration**—Front-end risk management provides project teams with a forum to have collaborative discussions that build common direction, unity and camaraderie. Project risk management is an integrating framework for the expertise centers to provide and align key resources for better managing company assets and control of risk.
- **Consistency**—Essilor has made great improvements by using common language and practice for development teams in the U.S. and France. By standardizing the risk management function and using continual review cycles, people throughout the company have a common planning focus for global, cross-functional projects, and are finding ways to use the output to solve a myriad of organizational problems. One immediate benefit is more accurate project schedules with better understanding of the critical path(s).
- **Efficiency**—Front-end risk management can help project teams hit the ground running at the start of the project.

Product innovation is essential for organizational success, and project risk management is an important enabler, as threats and opportunities can arise from a number of sources. Essilor has incorporated risk management into its project execution process and has shown that the organization benefits from improving project performance. By carefully managing the selection and adoption of appropriate tools, Essilor has developed an effective project management culture.