

From Risk to Revenue

By C. Richard Panico

The drive to gain a competitive advantage and differentiate your products quickly and repetitively is speeding up. With project management, you get more compact and focused research that ultimately will deliver a commercially viable product.

The product development lifecycle represents multiple progressions of research: exploratory, conceptual, feasibility, and development.

Under pressure to shorten your product development timeline? Take heart. You're not alone. Over the past decade, product life-cycles have shortened and the trend shows no sign of letting up. Companies look to make the most of recent technological advances to define new markets and launch an array of products that supply consumers with increased value.

To manage this reality effectively, project management continues to gain notoriety. Although many corporations have acknowledged project management as "potentially useful", few understand how to integrate the profession fully to all aspects of the product development lifecycle.

CONTROLLING THE LOOP

Significant to early-stage product development – and contradictory to conventional business procedures is how science is used to solve the most complex problem: the unknown. The scientific community employs a research loop (Figure 1) to solve problems.¹

Research is a repeated progression summarized as hypothesize, experiment, assess data, and incorporate knowledge. The process is then repeated with the knowledge gained from the preceding iteration. Therefore, the end of the research loop strongly influences the direction of the next research loop. After numerous cycles, the focus of the research project may no longer be connected with the original business objective and the sought-after innovation.

Simply put, the product development lifecycle represents multiple progressions of this research loop during four primary stages: exploratory, conceptual, feasibility, and development.

Exploratory. Executive level management gives researchers instructions and general direction for the research program. Using a qualitative approach, research proposals that are strategically aligned with the organization's vision are prioritized by probability of success, resource requirements and risk-adjusted return-on-

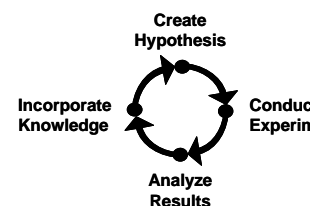
investment projections.

Conceptual. The concept is broadened to meet the commercial application criteria, such as efficacy, reliability, and aesthetics.

Feasibility. If the platform shows strong commercial promise, it proceeds to the feasibility phase. Sometimes, the concept is married with existing products to produce a new prototype product or an enhancement to an existing product. Note that at the move from concept to feasibility, the concept can be applied to a number of product development paths simultaneously to generate differing product possibilities.

Development. Here, activities imminent to product launch dominate, such as manufacturing scale-up, product safety, packaging design, supply chain development, product positioning, and market launch strategies.

FIGURE 1. The Research Loop



Research activities are either complete or they are on a steep slope as the product nears launch. While innovation still can influence the outcome, the focus clearly shifts in this phase to ongoing operational elements.

The merits of project management typically are recognized for what it does in the later development phase. Project management provides order and predictability to complex initiatives. The number of cross-functional teams and the gross volume of communications/decisions call for the role of a project manager, the composer. However, it is in earlier phases where the value of professional project management is vastly unrealized.

The project manager is the organizational link between the business objective and the detailed activities required to realize the objective.

WHAT PROJECT MANAGEMENT DOES

The fundamentals of project management are simple. The process (defined by the Project Management Institute) consist of five phases: initiate, plan, execute, control, and close.² Initiation defines the project objective and identifies the project stakeholders. Project planning identifies and schedules activities and resources. Execution is implementing the plan. Control is about how to systematically manage changes to the objective, plan, and schedule during execution. Last, closure documents to capture what was learned to ensure that the organization continuously improves performance.

When applied correctly, this project management process compresses schedules, uses limited resources more effectively and increases the predictability of outcomes.

While the process is important, the project manager is vital to success. Organizations invest large amounts of capital to develop comprehensive project management structures and processes yet they fail to institutionalize the methodology due to a lack of project management resources or poor selection of the project manager.

Now, this does not imply that all technical resources make poor project managers. However, skills must be determined when assigning who will lead projects. The project manager should possess extraordinarily strong interpersonal skills, be a good negotiator, and have a good overall understanding of the business and its organizational structure. He or she should be knowledgeable of the project management protocol, and be disciplined and confident leading cross-functional teams. Leadership and discipline are essential.

APPLYING NEW PROJECT MANAGEMENT EARLY

Assuming the new product has potential, the uncertainties associated with product development are summarized broadly into two principal categories: technical risk and execution risk. While these two risk components together equal a project's total risk, their magnitude is inversely proportional as the project moves through the four phases of the product development lifecycle.

In the exploratory phase, technical risk accounts for the overriding majority of the project risk, due to the lack of knowledge on how the organization will technically achieve an executive-level vision. On the other hand, execution risk is minimal during this phase as project/research teams are likely to be small in numbers with a low degree of cross-functionalism.

As the project moves toward and into the development phase, the technical risk component steadily decreases as the solution become more tangible. However, the decrease in technical risk is offset by an increase in execution risk as the project team grows in both numbers and functions. A way to compensate this see-saw effect is to adopt a modular approach, Progressive Project Management Focus (PPMF®).

PPMF describes a methodology where the project management process is applied to each phase of the product development lifecycle with increasing levels of intensity to diminish project risk (see Figure 2). Each phase of product development has unique risks, challenges and requirements calling for a discrete application of the project management process. Although application of the project management process at the four phases of product development may be intuitive, it is important to understand how the process affects the two components of product development risks.

The project manager is the organizational link between the business objective and the detailed activities required to realize the objective. By applying the project management process per the five phases mentioned earlier, the project manager plays a critical role in minimizing product development technical risk. Using the project objective to establish a plan and schedule (although it may be flexible during early-stage development) the project manager ensures research activities remain focused to the business objective. The plan and schedule provides a baseline to measure

research that ultimately will deliver a commercially viable product.

As the product development lifecycle continues, technical risks decrease and project execution risks increase. However, the project management process and approach remain applicable through the lifecycle.

Therefore, the project manager becomes more focused on minimizing execution risk in late-stage product development. Product development execution risk is correlated directly with the project

Progressive Project Management Focus (PPMF)[®]

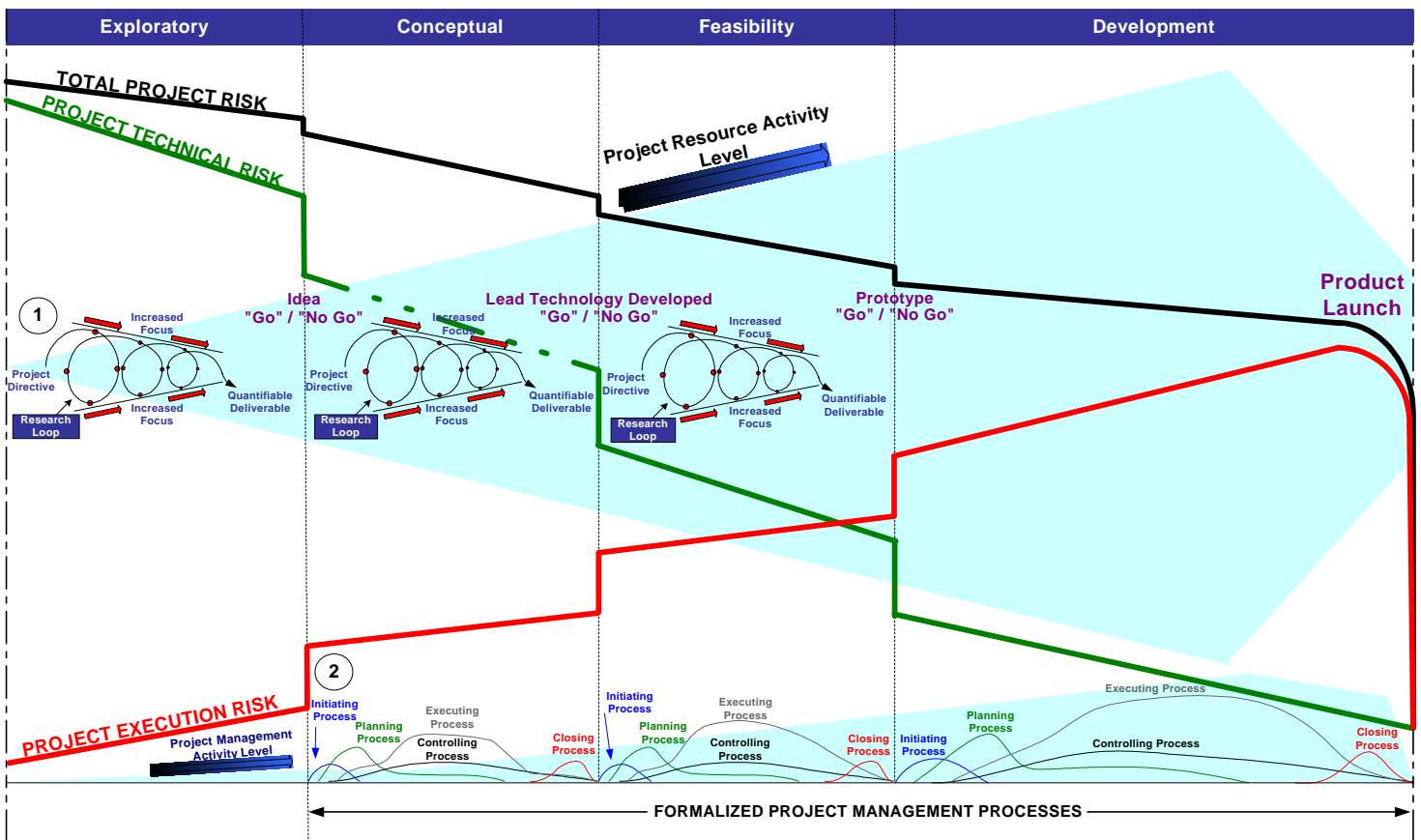


Figure 2

and control project progress and assist the iterative research loops to a quantifiable project deliverable.

Without this discipline, research loops than become broader as they increase in scope produce an ineffective research program and an anemic product development pipeline. With project management, you get more compact and focused

resource activity level. As additional resources and functional disciplines are added to the project, project coordination, and communication more become imperative. Aligning all resources to the project objective through fundamental project planning and execution establishes control and direction for the collective team.

Although a company sometimes may be able to absorb the lost investment of human resources and money spent on failed attempts to innovate and commercialize, most cannot afford unproductive time or the inability to get new products from idea to revenue quickly and reliably. ■ GCI

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² Project Management Institute, A guide to the Project Management Body of Knowledge (PMBOK Guide), 2000, p.31, Newton Square, Pennsylvania

Project Management

- Market pressures to compress product development timelines are a business reality.
- Project management is a competency that can facilitate timeline compression through risk mitigation.
- The focus and intensity of project management should vary over the course of the product development lifecycle.
- During the exploratory and conceptual phases, the project management activity level required is relatively low, and the focus is primarily on minimizing technical risk and driving convergence of the research lops to a viable deliverable.
- During the feasibility and development phases, the project management activity level steadily increases due to increased program complexity, and the focus is primarily on minimizing execution risk associated with final approval, manufacturing, and commercial launch.
- An individual's technical proficiency and knowledge do not guarantee proficient project leadership.