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BOOK REVIEW

Reinventing Project Management: The Diamond Approach To Successful Growth and Innovation, A.J. Shenhar, D. Dvir, Harvard Business School Press, Boston, MA, 2007, 276 pp

Project management is a significant activity for many organizations. Projects may involve extending capability of the current products or services in existing or new markets, development of entirely new products for existing or new markets, or even efforts to retire a product and exit the market. Project management as a subject and discipline has been around for several decades. Much has been written on the subject. And, quite a few people and organizations profess their project management expertise.

Yet, history reveals that the success rate of project management is low. The authors state: “85 percent of the projects we studied failed to meet time and budget goals, with an average overrun of 70 percent in time and 60 percent in budget.” (pp. 5). And, the failure rate is tied not just to a specific type of industry or product or the experience of project managers.

So, why do even the well-planned projects, run by experienced managers, fail? The authors suggest: “The common theme of all these failures was that executives as well as project teams failed to appreciate up front the extent of uncertainty and complexity involved (or failed to communicate this extent to each other) and failed to adapt their project management style to the situation.” (pp.7).

The authors build on this finding an approach that they believe will help improve success rate of the projects. The authors call it the “adaptive project management approach” that views project not just as series of activities or operations but as “business related process that must deliver business results”. The project management style also has to adapt to the specific type of project. The adaptive approach has two major aspects. First, it emphasizes the use of project success criteria as an integral part of project planning and management. Second, it uses a diamond-shaped framework to help differentiate projects in terms of their risks and benefits and a set of rules and behaviors that fit the specific project type.

The adaptive approach involves establishing the specification and selection of success criteria up front, during project planning. The project manager and the project team would then use these criteria to guide and evaluate the progress of their work. The success criteria will need to go beyond the traditional measures related to budget and time. Specifically, five criteria are suggested:

- *Project success* measured in terms of meeting time and budget goals.
- *Impact on the customer* to address meeting customer satisfaction, benefits and loyalty.
- *Impact on the project team* that considers personal growth, retention and satisfaction of team members.
- *Business results* measured in terms of return on investment, market share, and growth.
- *Preparation for the future* to assess how the project will prepare the company for using new technologies, reaching new markets, and providing new capabilities.

The authors suggest that failure criteria must be specified as well, to anticipate what might go wrong.

The diamond model and analysis tool classify a project based on its novelty, technology, complexity and pace. Each dimension includes three or four project types. There is a specific diamond associated with each project and affects project management in specific manner. Specifically, the diamond consists of the following four bases:

- *Novelty*: represents the uncertainty of a project's goal(s) and in the market. Novelty allows considering how clearly project requirements can be defined up front. Novelty is of three types: derivative, platform, and breakthrough. Derivative product is an extension of existing products. Platform product is a new generation of existing products that can replace an existing product, a new car model for example. Breakthrough product is an entirely new product for the market, a product that the customer has probably not seen before, Apple's iPod for example.
- *Technology*: represents the task uncertainty in terms of technology used for the project. Technology includes four project types: low-tech, medium-tech, high-tech, and super-high-tech. Low-tech project relies on existing technology; medium-tech project employs existing technology but with new features; high-tech project uses technology that is new to the firm but may already exist; and, super-high-tech project uses technology that does not exist when the project is initiated. Technology impacts the length of time and number of iterations required to get the right design and be able to release the design specifications. This dimension also helps determine the technical skills required by the project.
- *Complexity*: represents the complexity of the product and tasks. It includes three types of projects: assembly, system, and array. Assembly project combines parts and sub-assemblies into a product. System project involve collection of interacting components and subsystems. Array project deals with a large, widely distributed collection of systems that must work together to accomplish a common purpose, telecommunication and electric power networks for example.
- *Pace*: represents the timeliness of the project — how urgent the project is to a company. Pace includes four project types: regular, fast/competitive, time-critical, and blitz. For a regular project, time is not critical for project success. Fast/competitive projects are the most common ones, deployed to address market opportunities. Time critical project has firm time-to-complete deadlines, Y2K project for example. Blitz projects have urgency and most time-critical, crisis response projects for example.

The diamond model (N, T, C, P model) can thus help identify the project type along these four dimensions and the project style that will need to conform to that model. For example, a project that is "derivative", "medium-tech", "system" and "fast/competitive" will need to be managed very differently than a project that is "breakthrough", "high-tech", "system" and "blitz". The latter type of project will require more sophisticated ways to manage the risks, resources, project team, and the interactions with company executives.

In essence, the diamond model provides a conceptual and practical framework that can be used by project manager to plan and manage the activities, risks, resources and involvement of the team members and company executives. The authors provide many examples of past projects whose success or failure can be understood by comparing the actual and required style of project management. For example, the authors suggest that a reason for the problems encountered by the FCS (military Fire Control Systems) project was due to the gap between the actual and required styles. The project was managed as platform, medium-tech, assembly, and fast/competitive project. But, the required style should have been platform, high-tech, system, and fast/competitive.

The book consists of three parts. Part 1: A New Model for Managing Projects consists of three chapters that explain the motivation and foundation for the authors' work and also include a detailed discussion of the diamond framework. Part 2: The Four Bases of Successful Projects, consisting of

four chapters, explains, in more detail, the four bases of the diamond model. Part 3: Putting the Diamond Approach to Work, consisting of four chapters, discusses how the diamond approach can be used by various types of organizations. A quite useful part of the book is the seven Research Appendices where the authors provide details of their work over many years leading to the work reported in this book. These appendices indicate the rigor and experiences that underlie the approach presented in this book.

A number of cases are included to illustrate by examples the ideas presented in various chapters. In Chapter 2, The Sydney Opera House and the Los Angeles Metro subway cases are presented to illustrate what makes projects successful. Chapter 3, on the diamond framework, includes cases on FCS, a military fire control system, Sony's Walkman, The BMW Z3 automobile, the federal response to Hurricane Katrina, and the World Trade Center. Cases to illustrate the novelty dimension include the creation of the Toy Story movie, the Segway personal transportation system, and a financial middleware software program. Chapter 5 on technology includes cases on the Denver International Airport, The SR-71 Blackbird reconnaissance aircraft, NASA's Apollo moon landing program and the Space Shuttle program. To illustrate the complexity dimension, cases include the Ford 2000 restructuring effort, the English Channel tunnel, and the Harmony project which is a software project in the telecom arena. Chapter 7 on pace dimension includes cases on NASA's Mars Climate Orbiter, and the Y2K problem. Several cases address the issue of how to use the diamond approach; these include: selection of IT projects in a large media corporation, the Market Watch software project, the invention of flash memory, the history of microwave oven, the Quadrant model, and a wire coating project.

The authors seem to have extensive experience in project management. And, they have strong opinions in some areas and useful insights for project managers, project team and company executives. Some examples:

i "Top managers frequently look at project budgets as a cost, not an investment, and see project activities as part of operations. They rarely appoint a "chief project officer" or vice president of projects, and their project teams are left on their own with little guidance from the top." (pp. 7)

i "Most modern projects are uncertain, complex and changing, and they are strongly affected by the dynamics of the environment, technology and markets." (pp. 10)

i "You must learn how to control and manage your project's uncertainties. There are two major types: the what and the how uncertainties. These correspond to the uncertainty of requirements and the uncertainty of technical specifications and design, which are measured by project novelty and technology. No project can freeze the final requirements and then start working on designing the product. These uncertainties are resolved simultaneously, until the final requirements are frozen and the design completed." (pp. 185)

i "Rather than "plan your work, and work your plan," you should plan some of your work, work that plan, and then replan the next piece of your work and so on. Plan only for those things that you are highly certain will not change." (pp.187)

i "Project management is not about delivering a project on time, on budget, and within requirements. Instead, project management is about serving a customer need and creating business results to support the company's short-and long-term objectives." (pp.206)

i "Project management is not a universal activity with one set of rules and processes for all projects. Rather, it is situational and contextual, and one size does not fit all. To succeed in projects you must use

an adaptive project management approach, adopting your project management style to the environment, the goal, and the project task.” (pp. 206–207)

i “Treat project management as the next core of your competitive assets. Raise the awareness of managers at all levels about the potential of their projects. Make clear that project management is not the business only of project managers.” (pp. 209)

The authors close the final chapter by predicting that project management will evolve to become a more strategic activity, focusing not only on how to get the job done but also to satisfy the customer and improve the bottom line of the company.

Overall, this book will be a useful addition to the bookshelf of a project manager. The authors have done a nice job in presenting a new conceptual framework for planning and managing complex projects. I would have liked more discussion of how the conceptual framework, the diamond model and the associated tool, can be better integrated with the traditional approaches to project management, particularly with the widely used project management techniques and tools. The authors do provide some details, especially in Chapter 9. However, the discussion is more conceptual than tactical.

Still, the authors have provided here a valuable and useful work on project management.

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