Framing and Aligning the Project and Team[1]

"Would you tell me, please, which way I ought to go from here?"
"That depends a good deal on where you want to get to," said the Cat.
"I don't much care where--" said Alice.
"Then it doesn't matter which way you go," said the Cat.
"--so long as I get SOMEWHERE," Alice added as an explanation.
"Oh, you're sure to do that," said the Cat, "if you only walk long enough."
(Alice's Adventures in Wonderland, Chapter 6)

The above quote is often mistakenly referred to as: "If you don't know where you're going, any road will get you there." It also represents conventional wisdom for project management, that is, the importance of a clear goal and deliverables. While clear goals and deliverables are essential for projects, the path to or process for achieving the goal is not always clearly specified.

The overarching purpose of Chapter Two is to assist the reader to effectively and efficiently organize and manage projects to either (1) support on-going operations or (2) support innovation, which are described by March (1991), Martin (2009) and Page (2009) as the explore-exploit trade-off, and by Govindarajan and Trimble (2010) as the Performance Engine vs. Innovation. This is a brief chapter; however, my sense is that it is probably the one of the most important chapters in the book because it argues that the best approach to project management is IT DEPENDS.

The principal questions that need to be answered to categorize a project are: (1) how clear is the goal/task/deliverable? And (2) how clear is the path/process? Responses to these questions help guide the choice of project management approach and in part, the type of team that is most likely to pull it off. Here is a figure adapted from Wysocki (2011) that helps position projects:

Process Clarity	Goal/Task/Deliverables Clarity	
	Low	High
High	Adaptive Project Management (APM)?	Traditional Project Management (TPM)
Low	Punt	Adaptive Project Management (APM)

Figure 2.1 Selecting a Project Management Approach

If the goal, task and/or deliverable is well-defined and the process needed to reach it is clear, then a Traditional Project Management (TPM) approach is probably well suited. If either the goal or the process

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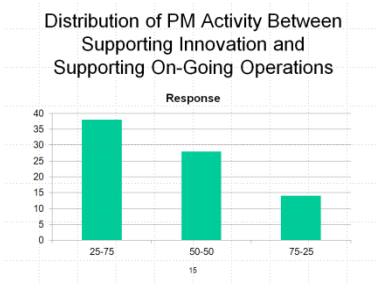
is not well defined, then an Adaptive Project Management (APM) approach is probably best. Adaptive Project Management is a relatively new idea, and is probably most often identified with the Agile Manifesto (2001) and the Declaration of Interdependence (2005).

If neither the goal nor the process is clear, then it may be best to avoid the project; or if there is a strong hunch of promising territory, then perhaps the best approach is to jump in and see what emerges.

REFLECTION

Think about the projects you've been involved in and where they fit in Figure 2.1. What proportion fall in the clear goal/clear path quadrant?

I've asked this question to students in my Management of Technology (MOT) and Infrastructure Systems Management and Engineering (ISME) MS classes as well as participants in workshops such as the MSPE Engineers Leadership Institute, and in each case the response is "About 20 percent." Figure 2.2 shows more detailed survey results for four groups of the participants (primarily engineers) in these classes and workshops.



These data indicate that about one-half of the respondents report that the at least fifty percent of their work is focused on supporting innovation.

Figure 2.2 Distribution of PM work - Innovation and On-Going Operations

Additional survey results indicates that the majority of their work is project work and that most are working on five or fewer projects (Figure 2.3)

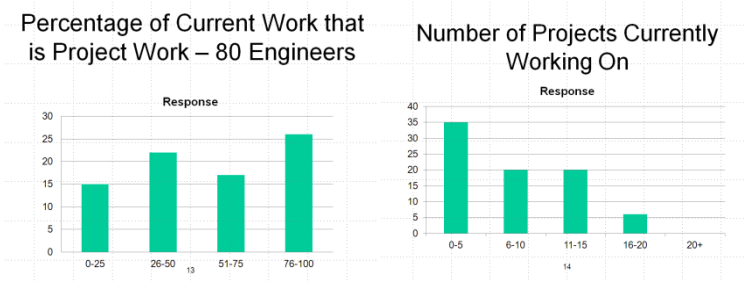


Figure 2.3 Percentage of Project Work and number of projects

Initially, I was stunned at the class and workshop respondents' spontaneous comment that only about one in five projects fit in the clear goal/clear process quadrant, and the data in Figure 2.2 indicates that

for these 80 predominantly engineers it may be higher than that. Wysocki notes in his 2011 *Executive's Guide to Project Management* notes that testimonial data suggests about 20% of all business projects fit in the TPM category.

Yet the predominant project management approach is TPM.

Selecting a project management approach requires deciding if your project is focused on supporting on-going operations (exploitation) or supporting innovation (exploration). James March (1991) described these contrasting approaches as exploitation (doing old things better) and exploration (doing new things).

Reflection on Exploration and Exploitation

I encountered James March's (1991) article many years ago and the idea lay dormant until about ten years ago or so when I started mentioning it in my project and knowledge management graduate classes. It didn't seem to resonate with the students. I summarized the idea in the 3rd Edition (on page 62 in the Project Management Principles and Practices chapter). I almost gave up on the idea and was considering removing it from my project and knowledge management courses and books. In 2009 and 2010 the floodgates opened and numerous authors embraced March's idea. The explore – exploit trade-off is back and is an organizing feature of the 4th edition.

March's (1991) distinction between exploitation and exploration, summarized in Table 2.1, provides some guidance on differences.

Exploiting Old Ways: Organizing for Routine Work	**Exploring New Ways: Organizing for Innovative Work**
Drive out variance	Enhance variance
See old things in old ways	See old things in new ways
Replicate the past	Break from the past
Goal: Make money now	Goal: Make money later

Table 2.1 Exploiting Old Ways vs. Exploring New Ways

Roger Martin elaborated on the characteristics of exploration and exploitation in his 2010 book, *Design of Business* (Table 1-1, p. 20). Martin's comparison, shown in Table 2.2, provides deeper insight into the nature of projects in these two domains, especially the contrast between the two in "overriding goal,"

"driving forces," "progress," and "risk and reward." He also highlights the potential challenge if there is too much emphasis on either.

	Exploration	Exploitation
Organizational focus	The invention of business	The administration of business
Overriding goal	Dynamically moving from the current knowledge stage to the next	Systematically honing and refining within the current knowledge stage
Driving forces	Intuition, feeling, hypotheses about the future, originality	Analysis, reasoning, data from the past, mastery
Future orientation	Long-term	Short-term
Progress	Uneven, scattered, characterized by false starts and significant leaps forward	Accomplished by measured, careful incremental steps
Risk and reward	High risk, uncertain but potentially high reward	Minimal risk, predictable but smaller rewards
Challenge	Failure to consolidate and exploit returns	Exhaustion and obsolescence

Table 2.2 Martin (2010) Design of Business Table 1.1

Complexity theorist and author Scott Page argues in his 2010 *Understanding Complexity* – Lecture 5 Explore Exploit: The Fundamental Trade-Off – that to succeed in a complex environment requires balancing exploration and exploitation. He highlights the need for both and as with Martin suggests potential catastrophic consequences of overemphasis on either. Complexity and complex adaptive systems are discussed further in Chapter 15, Teamwork for the Future.

Govindarajan and Trimble (2010) *The Other Side of Innovation*, articulate key differences between typical planning processes for the Performance Engine and best practices for innovation (Table 4.1, p. 99). Similar to Martin (2010) and Page (2010) Govindarajan and Trimble argue that both are important and must be balanced in order to succeed. Their comparison of planning processes summarized in Table 2.3 is an excellent guide to thinking about an appropriate approach to project management.

Planning Principles for Innovation	Norm in Performance Engine
Invest heavily in planning	Invest in proportion to budget
Create the plan and the scorecard from scratch	Just modify last year's plan
Discuss data and assumptions	Focus on data
Document a clear hypothesis of record	Document clear expectations
Find ways to spend a little, learn a lot	Be on budget, on time, and on spec
Create a separate forum for discussing results	Separate forums are unnecessary
Frequently reassess the plan	Deliver the results in the plan
Analyze trends	Analyze totals
Allow formal revisions to predictions	Revisions frowned on
Evaluate innovation leaders subjectively	Evaluate based on results

Table 2.3 Typical Planning Processes for the Performance Engine and best practices for Innovation (Govindarajan and Trimble, 2010, Table 4.1)

As you can see from these representations and comparisons of exploration and exploitation, and all the varieties of descriptions; the most effective approach to project management and teamwork depends to a great extent on which of these best describes your situation. Furthermore, it is important to develop a repertoire of skills for working on as well as organizing, managing and leading both (all) types of projects.

GROUP REFLECTION

Discuss and develop a strategy for identifying project features (based on the comparisons of March, Martin, Page, and Govindarajan and Trimble) that you can use to guide your approach to organizing and managing new projects. Additionally, start to identify specific projects that fit into each of these categories.

Routine, on-going operations such as assembly, fabrication, food service, hotel management, purchasing and payroll fit fairly well in the exploitation category and can be managed via traditional project management strategies.

More complicated and complex operations such as logistics and supply chain, computer and IT services, and construction may be approached via traditional project management; however, a combination of traditional and adaptive approaches might be more effective.

Innovative operations such as design and development of new products or services, research and development, and program development likely can be approached most effectively with adaptive or agile project management strategies.

Amy Edmondson provides a different perspective in her book on teaming on the contrasting approaches involved in exploration vs. exploitation projects. She describes the contrast as organizing to execute versus organizing to learn (Edmondson, 2012), which will be elaborated on in Chapter 15.

The Waterfall Model is wrong and harmful; we must outgrow it – Fred Brooks

Fred Brooks, author of the famous project management book, *The mythical man month: Essays on software engineering* (Brooks, 1975, 1995), argues in his recent book *The design of design: Essays from a computer scientist* (Brooks, 2010) that "A design is a created object; associated with a design process, which I shall call design, without any article. Then there is the verb to design (p.5)." He contrasts *original design* (the design of complex systems in which his viewpoint is that of the engineer who is focused on utility and effectiveness but also on efficiency and elegance), with the *routine redesign* of an object after object with changed parameters, and *adaptive design*, which is essentially the modification of a preceding design or object to serve new purposes.

Traditional project management approaches are suitable for routine design and to some extent for adaptive design; however, a different approach is needed for original design. Approaches for original design are presented in Chapters Eight and Fifteen.

References

Agile Manifesto 2001. *Manifesto for Agile Software Development*, ©2001. http://agilemanifesto.org/principles.html

Brooks, Frederick P. 1975, 1995. *The mythical man-month: Essays on software engineering*. Upper Saddle River, NJ: Addison-Wesley.

Brooks, Frederick P. 2010. *The design of design: Essays from a computer scientist*. Upper Saddle River, NJ: Addison-Wesley.

Declaration of Interdependence 2005. Agile and adaptive approaches for linking people, projects and value. http://pmdoi.org/

Edmondson, A.C. 2012. *Teaming: How organizations learn, innovate, and complete in the knowledge economy.* San Francisco: Jossey-Bass.

Govindarajan, Vijay and Trumble, Chris. 2010. *The other side of innovation: Solving the execution challenge*. Cambridge, MA: Harvard Business School Press.

March, James G. 1991. Exploration and Exploitation in Organizational Learning. *Organization Science*, *2* (1), 71-87.

Martin, Roger. 2009. *The design of business: Why design thinking is the next competitive advantage*. Boston, MA: Harvard Business Press.

Page, S.E. 2009. *Understanding complexity*. The Great Courses. Chantilly, VA: The Teaching Company.

Wysocki, Robert K. 2011. *Executive's Guide to Project Management: Organizational Processes and Practices for Supporting Complex Projects.* New York: Wiley.