12

The Role of Senior Management in Novel Projects

While project managers and their teams are responsible for executing projects, even in the difficult situation when unk unks are present, novel projects place a much greater demand on the involvement, time commitment, and knowledge of senior management than do routine, planned projects. Much less can be delegated, and top management must engage by investing time to be well informed, by being open to dialogue, by being willing to question its own assumptions, and by allowing the discomfort and insecurity of changing agreed-upon plans. Senior management must also be committed to *fair process* (see Section 10.2.3) in order to maintain loyalty and commitment of the project team under the pressure of unk unks.

In summary, senior management must set up an environment in which novel projects have a chance to succeed. We believe that senior management must contribute three critical elements in order to support the project team: Choose the project scope so that it fits the organization's strategy, build the organizational capabilities to deal with unk unks, and ensure appropriate sponsorship of the project. These three contributions are the topic of this chapter.

12.1 Choosing the Project Scope
12.1.1 Understanding the Strategic Rewards

Novel projects pose inherent and unavoidable risks. Even if a team manages its project impeccably, unforeseeable events may lead to failure. And, indeed, most novel or breakthrough projects go through periods of demotivation and doubt about the final success, and often they *do* fail, at least at the first attempt. This is exacerbated by the fact that large projects often require up to a third of the project in financing up front, an investment that is sunk if the project does not succeed.[1] Therefore, such projects should only be undertaken if they offer commensurate rewards.

Rewards from novelty *do* exist. Miller and Lessard state that "successful projects are not necessarily the easy ones, but those whose real value can be created by hard, creative work, leverage at the right moment and influence on the right groups."[2] Similarly, Hamel and Prahalad conclude that capturing large opportunities from new kinds of activities requires operating in unstructured areas and having the perseverance of a marathon runner.[3]

However, novelty does not guarantee strategic rewards! It is the responsibility of senior management to understand the vision of the project and to ensure that, should the project deliver, the results are compatible with what the organization wants to achieve in its business (or in a new business) and that the organization really can appropriate the results from the project. Examples abound of projects that succeeded and were then rejected internally by the organization. The Vol de Nuit project in Chapter 11 is a clear example of this.

Thus, it is the responsibility of senior management to:

- ▲ Understand the project vision and think through what the organization will do if the project succeeds.
- ▲ Clearly, openly, and frankly think through the risks that can be anticipated, assess the vulnerability to unk unks, and make these vulnerabilities known.
- ▲ Involve the key partners in this process of thinking through the rewards and risks. Of course, the project team must also be involved, in order to have access to the best possible information, and in order to create ownership by the team and a mutual understanding between the team and management.

This is costly and takes time, and moreover, it takes courage because uncomfortable findings may arise. The earlier uncomfortable findings can be articulated, the less difficult will be subsequent partner and stakeholder management (Chapters 10 and 11). If management does not perform these up-front activities, it may set the project up for failure.

12.1.2 Shaping the Project Portfolio

As highly novel projects, which are vulnerable to significant unk unks, are so risky, no organization can undertake only projects of this type. In most organizations, routine projects with well-understood rewards and risks should be the norm, and novel projects should be the exception, accounting for a small part of activity. For example, R&D organizations of large industrial companies spend only between 1 percent and 10 percent of their total R&D expenditure on risky, long-term, and potentially breakthrough work. What the right percentage is depends, of course, on one's business and one's strategy—there may be engineering contractors who carry out a large novel project that temporarily accounts for a great part of their turnover. But such contractors had better protect themselves or they could run the risk of bankruptcy.

The point is that senior management must have a very clear picture of its project portfolio and the uncertainty profiles of the projects in it. If the fraction of risky projects is high, management should articulate explicitly their benefits to provide reasons to incur those risks. Finally, the fraction of risky projects is not a given, or something that "emerges": It is a *decision*. Novelty is not fully imposed by client demands or industry competition; the design of a project includes (implicit or explicit) decisions to accept a certain level of uncertainty, or to limit the chances of being confronted by unk unks. For example, one design parameter is the choice of technology—how cutting-edge does it need to be? In electronics, we discussed in Section 10.1.2 the example of the German TollCollect project, which combined novel elements in a complex architecture. While contractual difficulties exacerbated

the problem, discussions of the project also suggested that some simpler system components might have been used. In a construction project, one can choose a spectacular architectural design that requires novel techniques and thus may give rise to more unk unks, or one may prefer a more traditional architectural design and thus limit the potential for unk unks. For example, the spectacular collapse of the Paris Charles De Gaulle Airport terminal project in 2004 was due partly to its difficulty to realize its novel design. In summary, management should have a policy, or a rule of thumb, on how many novel and risky projects it allows.[4]

12.1.3 Enforce Risk Reduction in the Projects in Which Novelty Is Not Critical

The third aspect of choosing the scope is *discipline*. For those projects in the organization's portfolio for which high novelty has not been identified as critical for achieving an important contribution, novelty should be avoided. In other words, such projects should be directed toward understood customer needs and should use well-known technologies, stable processes, and a system architecture that guards against unforeseeable interactions from complexity (see the discussions in Chapters 4 and 7).

This is nontrivial and takes senior management direction because technical personnel often tend to prefer more challenging, higher-quality, and higher-performance solutions when offered the choice. This is because more sophisticated work is more interesting; it gives them respect and provides them with stories to tell within their technical community, and they may even hope to surpass the expectations of management. However, if the organization wants to avoid a proliferation of unknown risks, it must combine the flexibility of managing novel projects with the discipline of limiting routine projects to remain just that: routine.

12.2 Building Organizational Capabilities

The second key responsibility of senior management is to ensure that organizational capabilities are developed such that they enable the organization to execute novel projects. This will involve hiring, developing, and assigning the right people to the right projects, building the proper project infrastructure, and implementing appropriate project governance. We discussed these topics in Chapters 9 and 10, but they cannot be accomplished within the team alone; senior management must set the stage.

12.2.1 The Project Management Team

The less structured nature of novel projects necessitates three requirements for the profiles of the team members: experience, flexibility, and mindfulness. The first requirement, *experience*, refers not only to deep experience in the technical subject area but also to previously having witnessed unk unks and the responses to them, so that the team member does not panic or

become confused when unk unks emerge. Project teams who are inexperienced in novel projects will too often come with a planning mind-set and instinctively fall back on standard PRM techniques and approaches when they are not appropriate. Building such an experience requires careful career management. For example, a large organization might groom a cadre of project managers that can cope with novel projects. Grooming these people consists of allowing them to develop through a sequence of projects in which they become more and more confronted with uncertainty and have to deal with increasingly complex external interests and stakeholder constellations. Building such networks often requires well-planned lateral career moves through different departments and geographies.

The second requirement, *flexibility*, refers to personality profiles who are not dependent on fixed routines (as opposed to people who find security only in stable work patterns) and who do not become too attached to work that has been carried out under certain assumptions, so abandoning it does not become too stressful. The project team must be able to anticipate and exploit early information if it is to benefit from early probing.

The third requirement, an *organizational mind-set*, refers to the culture and the informal, or "automatic," behaviors of the project team when dealing with novel projects. One important aspect of this culture is *mindfulness*, the ability to detect and respond to unexpected events in novel projects. As we discussed in Chapter 8, mindfulness has five components:[5]

1. *Preoccupation with failure.* Project teams must be able not only to tolerate but to seek failures, especially early in the project, and to learn quickly from these failures.

2. *Reluctance to simplify.* Project teams that are alert to unk unks try to simplify less and see more, acknowledging the complex and unpredictable nature of the project.

3. *Sensitivity to operations.* Normal operations, procedures, and processes often reveal observations that have no immediate consequence but are "free lessons" that could signify the development of unexpected events.

4. *Commitment to resilience.* A key characteristic of unk unks is that no matter how well one prepares, the unexpected *will* happen.

5. *Deference to expertise.* Decision making is pushed down in the organization, where faster detection, more knowledge at the decision-making level, and more variety in approaches increases the chance of finding a good solution.

In Chapter 8, we discussed mindfulness as a characteristic of the team that carries out the project. But, of course, the team does not operate in isolation. If senior management violates mindfulness, for example, suppresses dissent, or is not knowledgeable about key aspects of project operations, it torpedoes the team culture and risks making it difficult, if not impossible, to be open-minded and flexible.

The combination of these three requirements of experience, flexibility, and an appropriate organizational mind-set is difficult. It raises the question of whether one can find these characteristics outside the organization or whether they can be developed and sustained only internally.

It is certainly possible to hire external, experienced project teams who know how to respond to unk unks. However, the fuzziness of project targets, and the unforeseeable demands on resources, which come with the presence of unforeseeable uncertainty, require close integration of the project team with the organization. Handling unk unks happens in a particular organizational context, sensitivity to the operations requires a deep understanding of the organization, and a commitment to resilience demands a credible and respected project manager. Thus, a highly novel project often requires a longstanding intimacy with the organization. Therefore, it appears to us that it will, in the normal course of events, be difficult to hire these capabilities from the outside and have them rapidly operational.

12.2.2 The Project Infrastructure

In addition to the right people, novel projects must also have the appropriate project infrastructure. Project infrastructure includes *systems* for planning, monitoring, coordination, information management, and performance evaluation. The infrastructure must distinguish planned, selectionist, and learning aspects of projects and subprojects.

We discussed these management systems, and their various configurations, for planned, selectionist, and learning (sub) projects in detail in Chapter 9, but only from the viewpoint of the project team. However, while the team can competently *use* these systems, it has only a very limited ability to *install* them. Only senior management can install the systems of the project management infrastructure.

It is not widely accepted in organizations for multiple versions of project management systems to be needed. Most companies have an established and documented project management system, and then a "light" version of the same process for small projects or for "exploratory" projects that need more flexibility. However, while a "light" process version may indeed succeed in providing somewhat higher flexibility, this approach fails to capture the fact that a novel project, which is managed with selectionist and learning elements, needs a different approach to planning, monitoring, coordinating, and evaluating performance. As we discussed in detail in Chapter 9, what is planned and monitored is fundamentally different, concerning experiments, testing hypotheses, information sharing, and halting trials, rather than the progress toward the specified target. The systems must be concerned with a "meta level" of how a team can learn and adapt, in addition to being directly concerned with progress.

Only senior management can bring about the development and installation of systems that embody such a different philosophy. Project management, then, has the responsibility of leveraging these systems to produce

value, and to feed back learning, so that they can be adapted and improved upon. The first step toward the decision to implement such systems is the understanding by senior management of what they are for, and why a different approach is needed. This is the discussion to which this book hopes to contribute.

12.3 Sponsoring Novel Projects

Project sponsorship is concerned with "behind-the-scenes" support, protection and advocacy for the project, and sometimes informal "begging" for funds (like fundraising).[6] An ideal project sponsor is a political heavyweight in the organization who can help to protect the project and to influence decision makers.

We discussed in Chapter 11 how a team should attempt to influence the network of stakeholders—the parties that are external to the project and who do not have an official role but can, nevertheless, influence the project and will do so because their interests are at stake. Again, this discussion proceeded from the team's viewpoint, although the team cannot accomplish this alone. The Vol de Nuit team in Chapter 11, for example, was effectively abandoned by its natural sponsors; its isolated position in the organization at large was only to a small degree its own doing, but reflected a failure of senior management to support the team.

Effective sponsorship is critical in novel projects, even more so than in planned projects. This is because emerging unk unks are likely to lead to team needs, such as resources, expertise, or strategic support that were not planned and are not easy to obtain. Organizations are notoriously reluctant to provide additional resources unexpectedly, on the fly, because that smells like misuse or fraud. A heavyweight sponsor in the senior management of an organization is like an additional buffer for the team, a buffer that provides some crucial flexibility in responding to unexpected events and can help fashion a solution that keeps the project vision within reach.

It is therefore the responsibility of senior management to ensure sponsorship for a novel project that has been initiated. For instance, the top management team can assign one senior manager to each of the novel projects under way. Such an assignment must, however, be "real" as opposed to just paying lip service. In other words, the sponsor should not be given this assignment simply "on top" (which implies that he or she will not have the time or make the investment to become informed and to closely follow the project and its unexpected twists and turns), but that this assignment comes with some resources or time attached.

It is important to realize that the sponsor is not only nice to have for the team. The sponsor also represents supervision by top management. Sponsors should encourage and support the team through difficult times in the project's history but should equally ask the tough questions and cool off the team when it gets too excited about unexpected progress. If the sponsor indeed stays closely involved and informed, the team has less leeway to find

excuses or to misuse positive surprises to make its own life easier rather than to produce more value.

Recall that we concluded in Section 9.2.4 that "process incentives" are favored as evaluation systems to costly upside incentives if management has the ability to observe what the team does. A closely involved sponsor, while helping the team, also improves senior management's ability to do just that—namely, to observe closely what the team does. In addition, the sponsor establishes a win-win relationship with the team: "I help you, but you play it straight with me." In this relationship, the team acquires a personal obligation to perform; it goes beyond the official performance measurement criteria. In other words, the sponsor also has the ability to keep the pressure on.

12.4 Conclusion

Thus, we conclude the book. We do not have profound words of wisdom, except to express a humble hope that project managers find it useful. Project managers are our heroes. They are often underappreciated players in organizations, and yet it is they who do the novel stuff that the organization cannot accomplish in its everyday processes.

This book is meant as a resource for project teams that have to deal with novel projects. Even if everything in this book was of supreme wisdom, it would not make managing novel projects trivial. Dealing with unknown unknowns is inevitably uncomfortable and dangerous. We hope this book provides some guidance or red thread in the chaos of dealing with unexpected and hard to interpret events.

In this last chapter we hope to remind senior management that it has an important role to play. Projects do not happen in isolation but are implemented in an organizational context. This context is created by senior management. In many organizations with which we are familiar, senior management does not heed this responsibility, being too occupied with financial measures and strategy. But the recommendations in this chapter are real—if they are disregarded, the ability of the organization to successfully pull off novel projects may be severely compromised.

Endnotes

1. Miller and Lessard 2000, p. 12.

2. Miller and Lessard 2000, p. 198.

3. Hamel and Prahalad 1994, p. 37.

4. Well-known methods exist to support the risk balance of project portfolios, for example, with the "strategic bucket" model of assigning appropriate resources to new markets, new technologies, and incremental projects. See, for example, Roussel et al. 1993, Cooper et al. 1998, Kavadias and Loch 2004.

5. As we have stated in Chapter 8, this is based on Weick and Sutcliffe 2001, Chapter 1.

6. Fusfeld and Roberts 1997, p. 276.